

A

>TcasGr1 (AM292322)

MQHEVVKKFLHSVRIVFVQSEIFCLVNFNHRESYFRLSKAKSFCTFVAALVYCSVTFFALSE
LLTDLATSILLKVSSLLIGFCASIYVGTWINTSINGTKFIEFINKLIEFDVKLQNVSLIIN
YENQRTRSRIHLFVRYVFTSYLLFDYFVQRNQEYKYYQILSHLSGIFFTVFNVAQCYLTT
LVLMLQTRFVILNKQLTKITVKNFATKTQSAVLGKICTLHHHLSKLVTRFNEIFGLGLLLMF
AVSFLIITQVIFVICVLVQSEKIVWLHLVYISFLGIICAADVFIICHVCYATIQEVRAKIYF
FYLVKFYKVSXSGELIHKIETNEHEIIDKIEMFSLQILNERAEFNAAGFFPIDYTLVFSVSF
G

>TcasGr2 (AM292323)

MEKSTKIFPVPGDKNLHKSYSKMLILAQIFGFFPVQGVGPDFRSLRFSWKSARVVYALFTL
LGTFLISGFQMOKIATKGLDLLEANRLFFFLTGMASLLFLNLAKRWPKFVKDWCVVDFATFA
SYGWPKGLNKKLNTLTVFMLIALGEHWLSRYSWAKVFLVEHILVQTNKLVLALECNNTTAE
GFTYFLGNMSFAHIFALVEYDIFKALVLQNTINLQITFIWYNDLDFVMLISTALAYRFGQITR
RIAAVASEKIKNEI IWKKLREDDYTRQCRLVRKVDKEIAYIVLLTFASDLLFILIQLFNSLRR
MRNDLERLYFYWSFALLITRIVCLCLFGAKVHDESIIKPLLTLSVPTIYINLEIQRFIQQIG
NSDIAITGKNFFSITRGLILSFVDYFVFLLC SILVNIAFIKLATEWPQLMKAWLKIELLVGN
LGMRRNFRKCLDFIFTFITLLTIGLYFQLCEFSRLNFSVEHLLMELSRAIDSVACSKTVSDG
IRHYVNVTFPHLFNGLVDYSLWKALIFQISNLQTTFGGTFGDTFIIILLSMAFATRMKQSR
KIEALVKSHIAGAIPTYELVVIQFNRLR

>TcasGr3 (AM292359)

MYHQDQAVSILGEAIPKRRSVFLESGVNSADSFKASKVGPAPPIKFINKSSTDKFGNGAIYE
VLKPIYALMRIVGIFPIKNTTEPGMFRVAPPELLGYSVVVFMGYIGFIEWDKVEIVRSQEG
RFEEAVIDYLFVYLLPIIINPLVLYEARLANVVTDWVNFERYIYKLTKKKLSVFFGNKPV
ILTVVLPPLLACGVMVTHITMAHFKIIQVVPYCYINCLIIYLIGGFWMQCDVVGKVASQLAE
DFQMALKHVGPSSQVADYRSLWMLLSKLRDVGNASGYTVTFCLCLYLFLIITLTIYGLLSQL
QAGFSTKDIGLTINAGLAIFILYFICDEAHYASNCLRVOFQKLLLELSWMNDEAQQEINM
FLKATEMSPTDISLVGFFDVNRNLFKSLLATMVTYLVVLLQFQISIPPEASPTNSTTITTTQT
PN

>TcasGr4 (AM292325)

MVRPELDLNSLKCITKVLTIILGLLSCSFPKLLVYCIIFGAIATLTCIEGLRDCPRKYSTPL
AKITLILQRYCSVLLVFLTYFFNILFRKLLNAVKILSKIDETLNSKPLKPKIRTKVYLVY
CSSALVLAAMTTFHLYEAGHSYKCGIQYHICNTVISATVCFMMLLMLEIWRRTILNNYL
TIVLGETWTSLSVYHLVEISEIHFDLCAADDLNRVFEVQVLTIFGVSYFFISTFFYFFTT
GNI IATYDKQFYIHNALIVRALFLFFQLWATVYTSSQVTREVQSRSNRMTPLKLQPQNF
SI

>TcasGr5 (AM292326)

MTIQLLSLICKFGGWMGLTPVSVEPTGFSKPGYSLWILLFTLGVTISGVYRTDFYKLLSPM
RLIVQTCDFLLALNISTILTTVRKQQQWAQLIQNLKVVATTKTKAWFLPFVVTNIIFVLF
HTYEAFVWTRIMGVAYYEQYAVEFFQFYAQFIVYFLIYAVLEMLLQKYKTVTYVMTGQLKQ
NSNLLKSVCADLCLLSECVDLFNSLFGFLVLLVALTTLQLLIYIQVIVIGTKNTIETVAYS
VIFILWHIVGTFSGIFLCLDIRREIANVQVLAYKIEAKRRDNEIKMFVKIVDASCRNFTAAR
FFELNRRITILGVSNAVITFLIVMVQKASYEKLSPVFLIQVAADTVLFI LNISTIIITARKK
QQWNSLIKILKTVSNRNDKGDIFWFSPLVANLAFVTIVTYETFWWTQIMGAEFFKLYAVEY
FQMYAQFIVGTFSVFCDLIEQKVKNIQMLVYQNEAEVVKILLDVINHPHFTAARFFDLN
RKTILGVLNALFTFLIVVQFENLTS

>TcasGr6 (AM292327)

MEISDLAQLYGNELHIKQISKWLRGSARAQEIQRSELDKDGHVIDEHDQFFRDHKL LLLVL
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LSTLIIIIISLGLILAVVLLTSLALLEGFTLYHTTAYLHIITMINMNCALWYINCRAVGNA
STALAESFQNVLPPTASNSKSTKVLFKDVRNCSAYIIAHYRVLWLSLSDLLQKMGNAYART
YSTYSLFMMANITVAVYGFTSEIVDHGIRFSFKEIGLLVDSTYCLFLLFVFCDCSHQASLNI

ARRVQVTLQVNLSQVDPATRKEIDIFLVAIQMNPPKVSLKGYTVVNRELVTASVATIAIYL
IVLLQFKISLLNMRG

>TcasGr7 (AM292328)

MRVQPSNTPPEKSQSLSTADTANLINKSLGKHNLOKSFQVAVILAQIFGFFPAQOGILGRDFRA
IHFTWASARVGYTIVTILGATFVTVLQLHKIFAKGLNVI EANRLFFYCGLASGYLYLKLAM
KWPRFMKDWSCVEVMASYGWPAGLNRRLNVLLAVFMSLALIEYIILMQTNKLVLALECNST
SEGFYDFGKMSYSHIFSLMDYNIVMALVLQFITLQHTFIWVFNDFVMLLSTALAYRFTQV
TDRTOQSMSESKNKSES AWKNLREDYNRLCRLCKRVDEEISYIVLMSFASDLLFILIQLFNSL
RQMKNNLERIYFYWSFGFLIVRTVCLCLFGGKVNDSTQPMLVLSVSADVYNLEIQRFIHQ
IGTLEVAFTGKNFFSITRGLILSIAGAIVSYELVLMQFNDSLLETISEQIDSCPYYL

>TcasGr104 (AM292329)

MCYFNYSKDIRSLSFYKICNIFGIVPPYSFEKPDSQKSLWKKIQGVVLSIIAAGTAYSI
YVRHTYYRRLYTITHLVLDYLDEFILVALAFQVILNSCFCDPAKWIRLNNLQYIDEVLKNR
DSHETNLLRNVSQFVYVILYILATVFLAYVVICEMGVVTLQAYTLHLFCVLYVLLHFLT
YNLSLGIKLRYYDDVNNLFRIESEEKNIIVSLRQIGSLSQLLSETVALFNDVFGTCLILITG
KSIVQLLTCLNFITNNLKSENEEFKEKLLAANLCLVIYTLVSVSLVMVTCDACTIASKQTI
WCYKLOEQFVTNSEVRTELFKLAQHVSANIVHITAGNYFEINKATLCGIFGTTTTTYFIVILQ
FNQSSAK

>TcasGr9 (AM292330)

MEKSTKIFPVPDGNLHKSYSKMLILAQIFGFFPVQGVGPDFRSLRFSWKSARVVYALFTL
LGTFLISGFQMQKIATKGLDLLEANRLFFFLTGMASLLFLNLAKRWPKFVKDWCVVDFATFA
SYGWPKGLNKKLNTLTVFMLIALGEHWLSRYSWAKVFLVEHILVQTNKLVLALECNNTTAE
GFTYFLGNMSFAHIFALVEYDIFKALVLQNTINLQITFIWYNDLDFVMLISTALAYRFGQITR
RIAAVASEKVTSEKSWIALNDDYNRLCHLCFLLEKLSYIILTSFLNNFYFIFQVFESEFYL
HKATTLETVYYFISLGLLILRLVSVCFYGSWINEESKLSLDLSSYVPREVYNKEISRLVETL
KFQSITSAVVTYELIVIQFRKKMERDEKPYSRNSIC

>TcasGr10 (AM292331)

MRNDHGSNTHLHPDDAIRRAKIVKVAASPTSANPDEEPDPELLDRYDNFYQTTKSLLVLFQI
MGVMPIERSGKGRTRFRWLSSTSIYAYFIFGAETIFVTMVFKERLYLILRPGKRFDEYIYGI
IFLSILIPHFLLPVAAWTNGTEVAKFKNMWTRFQLKYYQVTGTPIFHNLTILITYSLCVISW
AVGIGIMLAQYYLQADMLLWHTFGYYHILAMLNCLCSLWF INCTAKGRVAVWMCNNLHKALE
SRNPAKILGAYRDLWVDLSHMMQQLGKAYSMSMYCLLILLTTIVASYGSVTEIMDQGISF
KEAGLFMIAFYCMTLLYIICNEGHHATRKMGEFRERLLNVNLSAVDQKTRQEVHMFMAIE
KNPPIMNNGYANVNRKLISSVTTSIATYLVMLMQFRLLTLMRNAQLAARRAIANVSVSSGNT
TMS

>TcasGr11 (AM292332)

MIKFSKVKSFTTHHDTLHNIYTSMKPVYAICKLIGLNTLRIGRKGELKQHKSDYFYFSFYI
TSYTLISVYSLFRIATNENNSLVINKRLIFIECFVMMALTLIVTLFTFLARGTLIKSFDMLS
HVDVSFIKAGFRLEYKQLLRSYLIISFVLFSLARVPVMLMTISADFIQQIMLFVSALIKA
FSKYQFVVLVLQLQHRFGKINRTMRSFFSDNKQDDKIPQISDNLYILCRLHYKLTSMQKIN
SAFSVQLLVSIGVSLFDVLFQAYLYYVATGKASFVTVPMIVCPIVWLMDEVVEIYLLVYAC
ASTCEQANDTPSILHELNNYFHMDELNNVIL

>TcasGr12 (AM292333)

MSNLKLLKFLKLLGQLLGLAPVKFYVQKFYVVILAFLLTAGAIIISLVYQAPVYKELTDIKLV
LNILSDVTLWLSNVNSLTTLTKRKKWNLLFKTLTHDEPRKSSLVQLILTQAFILMFVSYNIY
VCQTVSNFEYFQKILLMIQLYYLYFDVIVISTFLQLFLEHYEVINRQTLDTADVKTTLTTVV
EKECYKMKVTIDAFNDIFGWSFLLFTLYSSLLLLDYVSCVVALIILILQCGRVRSEVVKILN
VLKKIALRRQTTNGDLDELIVTLSTHYFPVFSACDYFTIETKTVDLVLGVTVTYLVIIQFD
DKIVQV

>TcasGr13 (AM292334)

MRFLGESPNGIYLYHDGRVKLLEGRVVDCCDDVSSVSQSEAGDEDRFSFTSSMVQSLDGNSS
DLENSSEENCVMSNLKLLKFLKLLGQLLGLAPVKFYVQKFYVVILAFLLTAGAIIISLVYQA
PVYKELTDIKLVNLSDVTLWLSNVNSLTTLTKRKKWNLLFKTLTHDEPRKSSLVQLILTQ

AIFLMFVSYNIYVCQTVSNFEYFQRKILLMIQLYYLYFDVIVISTFLQLFLEHYEVINRQTL
DTADVKTLLTTVVEKECYKMKVTIDAFNDIFGWSFLLEFTLYSSLLLLLDYVSCVVALIILILQC
GRVRSEVVKILNVLKIALRRQTTNGDLELIVTLSAHYFPVFSACDYFTIETKTVLDVVG
TVTYLIVIIQFDDKIVQV

>TcasGr14 (AM292335)

MPLLPKTPPLPLTLLYKLLGIIQFPISAHFSFMSRFLCLPFYSYFFYLSYIYTTYSRKLSGIF
KYIDQMAGYTGFLAMLTSMVMFYKRSNDLKTLLSNLESIQIYSIKPKERNSNHVRSGLFAL
ITGNVLFYFPFLPSDVSYNLFSFVPLVVNALDHLFLNDILSDICDKFEQINQHFRRQIKSVDL
FVIFPLTKAEKVRNLKEDEVTFVSVQKIQELSHLHYKLANFTVKISGLFEITTTITAMVMWFGY
VIDTMYLFIHIRSRQEDTDTLVVIYTFNLFYLCFCFYWLLVMVAMFSRTQQSANKTATFVHE
IWNKYALKNEVDKRVRLQLVAIRLLNNTKLQFTAKDFNLDWTFCHMMIAALTTYLVILIQF
NF

>TcasGr15 (AM292336)

MDIKSIKTCFYVAKFFAITPSSYDKPTKLYQKLYPVLMLFIYTTITEIYSVYERRYMNAHLS
GIQLVVRNLLDISLYLNAYHVFTMMTLKRHKWSTLFEILLKLESKDLSTRTFYGFVIVAHLL
FLVIFVLNIWCWIVEIGGWLAFTKQLLIKFVEVYPLFVLLIVSNVVLKILVEKYRHQKNFIN
ESNVETVKFNLFLLSQAVETFNDFGWTILQTVFFTVPRVLMYFDIFITEHESKPNWLFLLA
NFLTNLLFEWFDQIVNVAYRMETWNVVFNNGSRKNLDVMKSFVNFRRPSFTAARFFEIDRINAE
SRKPIRILFDVSSEIYNVEYKNVEFWRNIREDYDRLARLTQFLDKELSYLILFSIGFNCFWV
MKLLYNVLRFGAESQTINFMFSFGFILLRFLSVFESCTRLNNESTRKPSFVIQFSHIPVDNIE
FAGALVTYELTLFQYHAFYLT

>TcasGr16 (AM292337)

MPQVKLHKHYVPIILLSKILGIAPISYKNSNVNYSKIGIVQTVAYFVIFIIILTIVFFEKRSA
LSPFELIQIRTINVFATFRTIANIILMAVLF LGTFIGRAKFLAILKQMRNLEPEFLKLDQLG
ATVRNNRQIRRMVFLIGVLSFNLF GDLTLFIKEELDLVWREVCTFVVQVYPRLVVNTIN
LTFLLTLLMILEGRFRVINDGIQALINDSRKVTRFPTELTCFNKIKHLVNLHKNLVKVAKDHN
SLYSLHLLLWITVTFILLVGDYSYIVMYVFFFHLSDVRYVMVYLLKNNVLYGLELFI LAKIV
TDLQCQEANSTKKLIVKIKIDIDKEDERNEVISSALKLSQNELEITACKFFSIDNALLFSANS
TKKLIVKIRIDIDKEDERNEI ISSALKLSQSELEITACKFFSIDNALLSICGASSSYLFIM
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>TcasGr17 (AM292338)

MNTFKIFRPIKILAEIFGLSPMTQKLTLSPLKVLQTVILGTTTCIYLTSLYIWFILTQMTFSG
VTSPTIMKFVLSFRTGSFTFLMVAVLSSGTTFKLVAKTLENMTKIDKDLTELQKQKYLEKR
NRHIFRTSVLLIFVMHLMFDTLGGLYSTWSKSKQVEYFLIHWYPRMLISTKLLAHFLILTV
LKARFEAINNIIDSIRQNSQTRNQAVPTGTIKTLVQMHSNLVTTSEEVCDSFSIFGLVWISL
IFVVLIGDAYAVLNSVLFQNVYKPLPVLIVSIVKNCLSYCFNLYHLASKSNQLSREAKVTKTV
LLGVKIDICNEEERNSHCLGGTITRTMWFYQICGSAFSYLFIMLQFDLNNKKNQSLGNGTTA

>TcasGr150 (AM292339)

MNTFKIFRPIKILAEIFGLSPMTQKLTLSPLKVLQTVILGTTTCIYLTSLYIWFILTQMTFSG
VTSPTIMKFVLSFRTGSFTFLMVAVLSSGTTFKLVAKTLENMTKIDKDLTELQKQKYLEKR
NRHIFRTSVLLIFVMHLMFDTLGGLYSTWSKSKQVEYFLIHWYPRMLISTKLLAHFLILTV
LKARFEAINNIIDSIRQNSQTRNQAVPTGTIKTLVQMHSNLVTTSEEVCDSFSIFGLVWISL
IFVVLIGDAYAVLNSVLFQNVYKPLPVLIVSIVKNCLSYCFNLYHLASKSNQLSREAKVTKTV
LLGVKIDICNEEERNSSVAVLQLMENKIEITACRLFNIDNALLFAICGSAFSYLFIMLQFD
LNNKKNQSLGNGTTA

>TcasGr19 (AM292340)

MTSKARTFTIKCPVKKRKCTVSNVSLHSLKNKRSGASLQVGILDVFKCYNLRRIYFYCV
SITFNVHLLFLLCSGYFTVHLLFYCPFIIFTVHLLCTYYFYAFIILLCVYFYFYAFIIFT
VHLLFLLCIYFYFVPLFLLCIYFYCAFIIFTVHLLFLLCIYHFFCAFIIFTMHLFFCCAF
IFFNMHLLFLLCLDYFTLHLLFLPCIYFYSAFIIFTIHLFYCVLIILLCIYFYFYAFILF
TVHLLLLVCIYFYFYMHLLFCCAFIIFTMHLFLLCIYFYCALIILLCIYFYFCRAFIIFT
HFYCAFSLYPLKSTFYLVNVRPFPERSMGITPMIWNSTRRLFVW

>TcasGr20 (AM292341)

MTPHALISSDFHDIKPLINLTKIFGFLPVCSSQKGQKTCLNLSINYCICGYIFSAIFLSLS
ILGLTEDLNSAPIRMKNPIVKYIILIDLGEVAVTVLGILTPFKLPYFWKMLTGFGKIEQV
LPPHHAPEEKKRSFWAVTIFLVLAASVIFFDVWVWGLSASDLGVFFKRFLPVYVSYLLIFVQ
QIPFCFFVRVIRLKI EDLNGAFRAGLERVQNGENQWISVMKVNKQPKVIQKGSALS YERLNE
FMRLVEEIEDVIEAINGFYGVHTLLILFSCLLHLVVTPTYLLIEVCNAGYLPFILLQVAWIV
LHLIRLMYQVTTNLVLKLLTSPLLPDIKEQVEILAVQVSNKKIKFSSFGMLKISRSLTSTFG
GALTTFLVILFQYGGIHNVY

>TcasGr21 (AM292342)

MLPKQFLKLFKDPDVCVYTAIHPLFYVCTFFGLAPYSLVRVENGKKVFKFAWWPLTRNALLVL
ILLGALTYHAIFDLISFKDSDLQQLRYFEEVFSLLSCCSVIFGCIFALKVIEVFNIEEV
DVAFRSLAVWVPYKHLVYVNIHLISGLVTVATLTVTIIFASYQYGTKTYSLFIVFMTVIL
PYFINLLMELQYCHYLNILRVRYQLLNEYLETLVQETNRTSVEGWTDVSNVKKRSKEISKLP
KSMLAISDPVIVDQVAALHIKLTDTAHMINYAFVCVQQLLRITVAFISIVTALFLVAINFNK
SSSEENEGKTTQLDYFFTFWAFSNACEVMAIVWITSETCEEIVAGVTTYLVILIQFNNSDFV
QRNSTEFDNATESY

>TcasGr22 (AM292343)

MFRDLGSTTMMVLNLFSSQMYFTKKLEQMRQVHEVDNQLKQMGCDLDIPNSVQKHLILLMV
LVNLI FNTCGEVFSAWVRCQDQILIFLVNWYPRLIIGIMNSTLNLIFLLIQTRFEMINNIIT
RGDVTSTTIKKLFLNHLKILVKVREINGIFAFQVLMCTSMNFVLLIGDLHTSIYIIFDFMY
QHHKIVLDMGKNCVTVYFDLFYLSKRASDLCEANKTKILLVGLKIDIDQEEERNVVVTSVL
KLMQNKLEITACRLFSIDNALLFSICGAASSYLFIMLQLDIGSKTQGTNSTLY

>TcasGr79 (AM292344)

MNSIPIETIFKFGKYTLTPKSRIEKKPSRQKQFYALFLIFFYTFGEVFTLVLRIRNMEYRS
QTLMQTTLRRLIRDLSLYFSVIYSLLRVKRMMRSWYLLTNLTYNNTNRKYWLVNCCNLNSI
VTIFFNFATKKLEQFIVRFMKYHFFGTLLKLSQLFSTFAGIEVLHVVKQCYHLQKINVQQSG
IFINLPFLEHNLIRLKNCVIYFNRIFGWNILFGHIFTVCRITLIYIDDNVKGLGKQYNIASSK
TLKLSINIIISLVQLWIFQLYLLILCDQILREFDQIVVILSKVKSILNKKCCEKCGLKKIEFC
RPTFSAARFYGIDFSNTFLGLVGAVVTFLIVLLQFQIN

>TcasGr123 (AM292345)

MSDFQKLYQKFVNSIRILLFQSRIFGLVTFPTDRSKFRPSSLRFCNLNISIFTYVPMILYCV
YTTATYDSFMIYKTTNIIILGLNVVYVVTAWICAITKRDMFVEFLKLVDFDSKLQTMNIKV
NYHRVHRKIMVQSLGRVGLVVIIGTLAIIANLNGDTMIVEAMAYILLAMNSAVCHQTIELV
KMLKIRFVILNKQINNLI EYFQKNKIGPVETKGTNKQLNLTNLKICALHHHLSKLVKLFNETF
GIVLLL MFGVSFVIVITIFFFTANVQAGELYFMSLLNPILSNVTFVIDVVYVCDVCYSTIE
EANKAGELIHKIDTEDHDIRDEIEMFSLQIANEQVEFNAAGFFAINYTLVFSILGGVTTYII
ILIQLATSLAGQ

>TcasGr25 (AM292346)

MSQVMLIQFCAFVVVLKQKFCVVNQYIKQVCKLNNGHYKNFLSQVEI IHNEILVTHNEIQTI
FSVPLLMKIASQFVGIFCSLYFCIFGYIYDDEMVPQNFHDI FLPLLCILTNLEILITVTV
CELTILEYKRTKLLYRIPVTKTDSMLIRNINLFSLQLAHQKLEFSACGFFLINGTLLHTIV
GAVTVYLIMFIQFDIATTTKGAAPAVSKARQFLPALPGYVPVYIRPGDTPLEDINPDLAFAF
SSYARKNARLSFGRAEPVFDGKVPSNGSLNQISDIDDVNFQENLALTSTEHSLSQSQHIQK
IPKN

>TcasGr26 (AM292347)

MEISDLAQLYGNELHIKQISKWLRGSARAQEIQKRSELDKDGHVIDEHDQFFRDHKL LLLVL
FRVLGVMPIQRGEIGRITFGWTSIPMLYAYVFYVVTTLVVLVGYERFDILLNKSKNLQFPL
LSTLIIIIISLGLILAVVLLTSLALLEGFTLYHTTAYLHIITMINMNCALWYINCRAVGNA
STALAESFQNVLVPTASNSKSTKVLFKDVRNCSAYIIAHYRVLWLSLSDLLQKMGNA YART
YSTYSLFMMANITVAVYGF TSEIVDHGIRFSFKEIGLLVDSTYCLFLLFVFCDCSHQASLNI
ARRVQVTLQVNLSQVDPATRKEIDIFLVAIQMNPPKVSLKGYTVVNRELVTASVATIAIYL
IVLLQFKISLLNMRG

>TcasGr27 (AM292348)

MSHSNPLEAFKLNFFLTKALTVWHVENPTYRKYKIFVVFVFAVTFVSAWICALVNYNVSEIS
ENFYLLPAMSTGPLKYAIFQKNFTNIVNLTHLLETQYAKIRTENQKKIFDESVIFERKVMKN
FAILIIPTCVAMFIVPYFQDRREPLIVWFPFDYKQPVVFDLVYFILAFACISIAYTNVSTD
AFFYTCLIQIETQCEIVSDTLRNLDKIVTNGFRNVAESRKIFIECIEQYNVILRYTKIVSDT
YQGILVVQFFCSLVALCLTMYKLSLTDLYFAIYEMHWYDASKQIQNEVVFIFMGQLEKPIVF
YVANIFSLDLDTFKKIMQKAWSFFTALKNMHDIRNN

>TcasGr28 (AM292349)

MRLIRKMKSDLVLTIEASDAVLAYPQPSFHQTFVVFVIFGQFFGIMPLHGVSARKNVQEIRLE
WKSFRFVYAVYNI FGAFVMGLFCILKFALDGLMLDKTGICVSNVDFVHFYYPVATMSFYVL
NFFGSIQFIIISKHWVTIMKEWSFMEMSMRNYGSSINMKKRFFVVMTSVIMTLALGNPYCFNS
SVYKVPVEHLLFIANAFITSQSCENATLYSGDEMYFRVAFPSVFTLIDYSLWKACFVEVRR

>TcasGr29 (AM292350)

MRVQPSNTPPEKSQSLSTADTANLINKSLGKHNLOKSFQKVVILAQIFGFFPAQGI LGRDFRA
IHFTWASARVGYTIVTILGATFVTVLQLHKIFAKGLNVI EANRLFFYCSGLASGYLYLKLAM
KWPRFMKDWSCVEVMASYGWPAGLNRRLNVLLAVFMSLALIEYILMQTNKLVLALECNST
SEGFYDFFGKMSYSHIFSLMDYNI VMALVLOFITLQHTFIWVFNDVFMVLLSTALAYRFTQV
TDRTOQSMSESKNKSESAWKNLREDYNRLCRLCKRVDEEISYIVLMSFASDLLFILIQLFNSL
RQMKNNLERIYFYWSFGFLIVRTVCLCLFGGKVNDESTQPMLVLSVSADVYNLEIQRFIHQ
IGTLEVAFTGKNFFSITRGLILSIAGAI VSYELVLMQFNDSLLETISEQIDSCPYYL

>TcasGr30 (AM292351)

MRVQPSNTPPEKSQSLSTADTANLINKSLGKHNLOKSFQKVVILAQIFGFFPAQGI LGRDFRA
IHFTWASARVGYTIVTILGATFVTVLQLHKIFAKGLNVI EANRLFFYCSGLASGYLYLKLAM
KWPRFMKDWSCVEVMASYGWPAGLNRRLNVLLAVFMSLALIEYILMQTNKLVLALECNST
SEGFYDFFGKMSYSHIFSLMDYNI VMALVLOFITLQHTFIWVFNDVFMVLLSTALAYRFTQV
TDRTOQSMSESKNKSESAWKNLREDYNRLCRLCKRVDEEISYIVLMSFASDLLFILIQLFNSL
RQMKNNLERIYFYWSFGFLIIQRFIHQIGTLEVAFTGKNFFSITRGLILSIAGAI VSYELVLMQFNDSLLETISEQIDSCPYYL

>TcasGr31 (AM292352)

MGSVAINHSLKRLKIITIVILVVATGNI IHTTSNKQLQFFAVEHLLIQCYIAVSIFGSSSF
EADLRQFYKTAYS AIFTVIDFSLCKAILVHAITIRSTFSWTFIDVFIMLTSTAFVFRKQLN
AKVEMLKNARVKNTALWKQLRYEHYRLYQLSVLIDNNMSYIIIVSFATNLYFII IQLFGSMK
IVKGLTKTAYYLISFALLIMRLISVCLCGASVHSESSKVLPLLFSVSSSSYNCEVLF SFLID
QF

>TcasGr32 (AM292353)

MSFKLLRLVLKVGHFFAITPGFRKNRTTCPEKIYAYGVVAFITLGVAVSVFYRAKDYAKFIH
IKAVVQITLDATLYVQNIYTVLTALTKKPLWFKLLKNLKMVQNHNNIREKSHYCLFVASNCF
FWSYQSYMSYIFANIMGLEFYKQFAIEYFQMYVLFVNFVFAFFVVKMLLVRYRNLTKQLRFK
LRF FEKLGNRRLGFVQRDQIQFDICLLKEGVLDVNDIFGWQILFLITYATLQILVYLHLAV
MLGFQDIYMIVYIIVVIFWYTVNASTNIFLCDEICNEGQTILGISYSLEKKTGDEIQDLIS
TIKDNFPRFYAARFFVINRGTILGILDIVTFLIVMIQFEMTQNSTNINFVSTFFKIPFYST
LRPINLLVQIILDVILLILNVHTILTITKRQWCKLLENLKLDRNNSSFFVANVLFQLIH
VYYTVVFTLLLVDFVKEYAFEYIQLYSQFILIYFLLFATLKI LLGKYTQLKACLMEEKRPV
SLQVIKAIYSLRETVDVFNDFGWPFLLITFTSLQIMVYLQHIFVKS RPSPATIISNVTV
ISWQAVCTFYNILLCDSVAHTAGELLGAVYSLDLELKHIEFNDFVTALKDNVPVFAAARFY
AINRSTIFRMFNAIVTFLIVMVQFETNYSQP

>TcasGr433 (AM292368)

MEISDLAQLYGNELHIKQISKWLRGSARAQEIQRSELD SKDGHVIDEHDQFFRDHKL LLLVL
FRVLGVMP IQRGEIGRITFGWTSIPMLYAYVYVVTVLVVLVGYERFDILLNKSKNLQFPL
LSTLIIIIISLGLILAVVLLTSLALLEGFTLYHTTAYLHIITMINMNCALWYINCRAVGNA
STALAESFQNVLPPTASNSKSTKVLFKDVRNCSAYIIAHYRVLWLSLSDLLQKMGNA YART
YSTYSLFMMANITVAVYGF TSEIVDHGIRFSFKEIGLLVDSTYCLFLLFVFCDCSHQASLNI
ARRVQVTLLQVNLSQVDPATRKEIDIFLVAIQMNPPKVSLKGYTVVNRELVTASVATIAIYL
IVLLQFKISLLNMRG

>TcasGr34 (AM292355)

MSSQLLKLTHDALKILGIGPKSNKIYSFLLLTTLTLLVILSSIDRPYLKSYTYIKLVVSVLM
DFIAYFFNFWTILFSRSDFFQQFECDNEPKLRHYLIFIFVNVFFWVIILMSNYAFTRIILLK
SVLEIVI IDIEIYSQFLYGFMIYLILDITIKSKYRQMHRLLANYKVITSDEFFYLVSIESLA
CELKNTVDDFNDIFGISFLLIISYSTLHFVNYIDDLFFFRFEKSKFEPFLISNISLVSLIFL
FNCTLIIMCDCVRSEASKVVKNAQKLRHKFDLKTLLVLFNFPKFTAGGFFHVKKSTIFSILNTV
STLLIVMVQFDKER

>TcasGr35 (AM292356)

MRLKWHYYITISMAFIIIFVSLEIYHIYTVVEESGFENFVKTYLVSDFENYVTFFCSLFIVVIL
KLILAKYRQQDVTLLQITKAKNLLYSKQIVTILKKTNSNIFILKESVDTFNDIFGWIILCNI
FEAAAKSLIYIDMIKKNVTQQNSDVFIFDNVWLFILWVGILSTIFLCDTILKKVDDILSQA
YKLEASFDDLATYETDEVQIFIDVVQHNRPEFKAARFFSIDRSTLFSVLNSLTTFFLLVMIQF
KEN

>TcasGr105 (AM292357)

MYFSRRDIRFLRPIFAVCRLFALVPYYNFEKFSLEHQLWQKIQAWTYLILLTTWTVISASTR
IKSFKFLTIGVGITTDITDRVFTVAIPFVGIANSICILNQDKWRLNANNFQQIDKIFKTRDDR
VKVYQAPVLQLFLYIFTYLSVTCYVTYAWSPIDHTESNIINDMCSLYIILQITLIVNYALAL
KNRFKELQKYLKIETSCRYVGTLYRILTTMMEMVNDIFGWTLILILAKCITSSLSSLYTCIA
GYEFNANFTISYILFALFNTFTGILLIMTCSGVHSESQKLVGVCYEYQDRFSDESKRRELL
RLAQQVNANIAQITANFFDISRSTFLGILATITTYFIVIEFGF

>TcasGr37 (AM292358)

MLKWVLKVGNVLAMTPTKEKRFPHRIHSYFMVAFYVVFSSVSTFFKIPFYSTLRPINLLVQI
ILDVILLILNVHTILTTITKRNQWCKLLENLKLDRNNSSFVANVLFQLIHVYYTVVFTLL
LGVDFVKEYAFEYIQLYSQFILYFLLFATLKILLGKYTQLKACLMEEKRPMSLQVIKAQIY
SLRETVDVFNDFIGWPFLLLITFTSLQIMVYLQHFVKSRRSPATIISNVTVISWQAVCTFY
NILLCDSVAHTAGELLGAVYSLDLELKHIEFNDFVTALKDNVPVFAAARFYAINRSTIFRM
FNAIVTFLIVMVQFETNYSQP

>TcasGr38 (AM292324)

MNNKLNMLVVKSMQRKIMEEKLVEKFLNSLQIYLQHNQIFGFVTFCTRSNFRSSKLLIL
YNIILQVLFVSVSYWLYLVLEADDMLPIYKNTYLIILFADFAYLETTWICTLLKKDKLLEL
FKRLIHFDTKCQENSTVIDYKRHKRLLCYLLARYVALALVILFSEILVIVSEQEWFSSTGL
LVMIFNSALSYSKASEIVMLRSRFAILNKQIRFLNQYLRLKPEGRISNRRVVISFSKICYLH
QHLSKSVKLFNEVFGVSLLVLFVNSFLSIVLALFRTAELQASQIKWTRIAYMALASVPFIF
DSIHLCDVCYSTIGTVSWCELNFDWSSQVSKAGELIHQIQTEDHDIIDEIEMFSLQIANEQV
EFNAAGFFPINYTLVFSVRSVQVERI

>TcasGr39 (AM292360)

MRNDHGSNTHLHPDDAIRRAKIVKVAASPTSANPDEEPDPELLDRYDNFYQTTKSLLVLFQI
MGVMPIERSGKGRITFRWLSSTSIYAYFIFGAETIFVTMVFKERLYLILRPGKRFDEYIYGI
IFLSILIPHFLLPVAAWTNGTEVAKFKNMWTRFQLKYYQVTGTPIFHNLTILITYSLCVISW
AVGIGIMLAQYYLQADMLLWHTFGYYHILAMLNCLCSLWF INCTAKGRVAVWMCNNLHKALE
SRNPAKILGAYRDLWVDLSHMMQQLGKAYSMSMYCLLILLTTIVASYGSVTEIMDQGISF
KEAGLFMIAFYCMTLLYIICNEGHATKMGPEFRERLLNVNLSAVDQKTRQEVHMFMAIE
KNPPIMNLNGYANVNRKLISSVTISIATYLVMLMQFRLTLMRNAQLAARRAIAN

>TcasGr40 (AM292361)

MVFAELWKKIRNRGTPPKFELPTTHNCLKKVLVLLSQIVGVFPLNHLNNEEPEKLHFTFKSWKV
LYTSLTSFGYLFcasLSFYKAFKIGILLNQLITPLFFFHSFMTSVLFSQVASRWPLFLNEWT
KIEINLLKHYQSTTDLHKKIRYSAFGMIFVALLEHCFMSMLNYVYSSKCENNSTGVEHFFKKQ
FHYIFTYMPYNIVFGLCLTTFGLLPVNGVTSEKCNLTFWYSKQVYFSKIIISGSIFMTTTS
FYRILNSGYNLTFGSFIFNANSAIEGIIFFNLAKSWPQLIEKWSRVEMALDNWKNKSLKR
KFYLTICTIMSAAAVEHILSIVNTCSQIPSEVEDKYTTYFLNTYPHLNFNFEFSVPLAIFAV
V

>TcasGr41 (AM292362)

MIEVGKTRVKRASNLFRFGQFCAICVPKITSTNNEVPRWYICYTIGVITIGCLCIWSIFN
KWNQFRSYSNFSVFLFDIITIVTLTSTILLSILVNAVVFVKEKRIRTLIKLSEIKENTRLAEK
QARISILELVAVHLVLAFLYSFDLDFANGITFGWHTYIFDVPNFVNEYVQAIEVLYICSYTVL
IRNKISNLNTSLIHSTHLNGDIVKEHQNLHNKICNLIDEFNECFGLQILGILFVGVYITTYT
IFLLIFGSGSATPENNVSVVYVLILYILESLLYMTKLVVVTFLKFIKKIQIFGIMITKAC
MSASNLIQRTPNICYKLLSNLGI FPKTTNEQLLRKELLLFAEQMGQRQVAFKVGGLNIDYG
TLYSLFGSTAMNVIILLQFQKQKYN

>TcasGr71 (AM292363)

MTDHNLLRLIVTIGEFFAMTPSRPKTRAKIYALCVVTALVTPSALSIIYYRQPIYAKISETK
SIVAMVMGTIVNAFSCYTVLAPVLCKRQQYCQLMSKLLGNHQLVYNCHTFGRFLAPNLTYLL
VALYSGYVWTDILGFGYFREYLAEAVQLYFQFYTYFVLCVIVCIFRGKYRNINLLLTEQLQN
RRFFAKKMEGLVCSIKELNMI FNEFFGWPIIMIIYSSLMVLNYIDEVFNFFGYDKKQYIG
VVVANVGVAFMINVGTVTLILSCDAVLEEVTLLLAYKIRQVFPNEKKNISEFINVVLNNY
PDFSAAGFFSINKTLLQIIGNVTTFFIIIIQFNKX

>TcasGr43 (AM292364)

MDFQLLQIMFTIGKFFALTPRSILEKQTFIQKFYAVAFFLALSIGVVVSIYSKSFHRNEIH
IKIVLMFFKEASLYCFNYVIVVTTFYKRRTWTRLLKNLESCAKIKKTKRYCYYYAFFGVH
LAYGVVVIYSICVQTEKSVDFLCRHTVEYFQNYIHFYQLLLYLITDMILMRYKELNRVIL
DNMSRNHLFLVRRTETLAQILNQT VNFYNSAFGWPIAFLIFFATLDFLDNVDTIMYEKTNVT
FVHLAVLNILRVGKNFVCLLSLII LCDCVVKEAQKSLVLT YEMRWYCQTATMEEKQELYEFS
NFVSQLPKFSAANFFDIERSTILSVLGTACTFLIIIVQFRNS

>TcasGr44 (AM292365)

MTRAMVRPELDLNSLKCITKVLTI LGLLSCSFPKKKLVYCIIFGAIATLTCIEGLRDCPRKY
STPLAKITITILQRYCSVLLVFLTYFFNIFRKKLLNAVKILSKIDETLNSKPLKPVKIRTKV
YLVCSSALVLAAMTTFHLIYEAHGFSYKCGIQYHICNTVISATVCFMMLLMLEIWRRTIL
NNYLTIVLGETWTSLSVYHLVEISEIHFDLQAADDLNRYFEVQVLTIFGVSYFFISTFFY
FFTTGNI IATYDKQFYIHNALIVRALFLFFQLWATVYTSSQVTREVQSRSNRMTPLKLQPQN
FSI

>TcasGr45 (AM292366)

MCYFNYSKDIRSLSFYKICNIFGIVPPYSFEKPDSQKSLWKKIQGVVLVSI IAAGTAYSI
YVRHTYYRRLYTITHLVLDYLDEFILVALAFQVILNSCFCDPAKWIRLNNLQYIDEVLKNR
DSHETNLLRNVSQFFVYVILYILATVFLAYVVICEMGVVTLQAYTLHLFCVLYVLLHFLT
YNLSLGIKLRYYDDVNNLFRIESEEKNIIVSLRQIGSLSQLLSETVALFNDVFGTCLILITG
KSIVQLLTCLNFITNNLKSENEEFKEKLLAANLCLVIYTLVSVSLVMVTCDACTIASKQTIS
WCYKLOEQFVTNSEVRTELFKLAQHVSANIVHITAGNYFEINKATLCGIFGTTTTYFIVILQ
FNQSSAK

>TcasGr46 (AM292367)

MEEKLVVEKFLNSLQIYLQHNQIFGFVTFCTRSNFRSSKLLILYNIILQVLFVVSFVSYWLY
LVLEADDMLPIYKNTYLIILFADFAYLETTWICTLLKDKLLELFKRLIHFDTKCQENSTVI
DYKRHKRLLCYLLARYVALALVILFSEILVIVSEQEWFSSTGLLVMIFNSALS YKASEIVV
MLRSRFAILNKQIRFLNQYLRKPEGRISNRRVVISFSKICYLHQHLSKSVKLFNEVFGVSL
LVLFGNSFLSIVLALFRTA AELQASQIKWTR IAYMALASVPFIFDSIHLCDVCYSTIGTVSK
AGELIHQIQTEDHDIIDEIEMFSLQIANEQVEFNAAGFFPINYTLVFSVLKQYVMQQQVKNF
RHSVRSVFFLSEIFGLVNLKYRETYFRLSKTKTFCTLVTALVYCSLAI FVLCCELLIEGTTSI
LINVPSLI IHVSTSAYVATVWINSVINRWKFI EFIRKVLEFDVKCVSNYTKQQSKIH LIVRS
VFVTTYLMFDYCTVLRVQRFNNYQSLAHYLRVFFTVFNVVHCYLA SELVLMKRNRFVTLNVQ
LTKLTKNCATKAQSVVLGRIC TLHHHLSKLVTRFNEIFGLGLLLMFGVSFLLITQTFIICV
IVQSEQIAWLHLLYIFLVGIMYAADVFI CHVCCSTIHEVSKAGELIHKIETNDHEIIDKIE
MFSLQILNERAGFSAAGFFPIDYSLVFSETKLLLFKITSVMIAVSGLVYIATVWICTLMNRC
KFSEFMTKLEFDVKLQSDRLMIDYKTQKTGSKIH L FVKCVFLMGYQIFDWVQKEQSLASHV
GVFLTIFNAAHCYLATELVLMKRNRYIILNGLIKMETKAQSVALGKICTLHHHLSKLI RLF
NEIFGHGLLLMFGISFLLVTQTIFALCVVLQQLQENDWLQGLYLI FVSTLYTANVVCICHVCY
STIQEVSKSGELIHKIATNDHEIIDKIE MFSLQILNERAGFTAAGFFPIDYTSAFSSEKIVW

LHLVYISFLGIICAADVFIICHVCYATIQEVRAKIYFFYLVKFYKVSXSGELIHKIETNEHE
IIDKIEMFSLQILNERAEFNAAGFFPIDYTLVFSKFTSSIRMLLIQGQIFGLITFGCSNRCF
FPSKIRICWNVLLNVCVYFLFCGFCVYEFASDERIKLVKAIIMILSGCIIFTEGIWICSLI
HRKKIVKFLDGIMAFDIQLKQVVNYKKKKFQRMVVARVYVYATIFTIITATSSFVTIHNVI
QFLGYFIGLITFVMSQHCVELVSMIKARFVVVNQQIGGIVTYFSTNLPKRETEVRKSLDFG
KLCSLHHHLSKLIKSFNEIYGVPLLLFFGLNFLIITQAMFLVVGQLQASQIHWQKIIIIIVMS
SVTYGIDTVAVCDACYSTIEEKNLQVNESGKLIHKIDAQDCDFVDEIEMFSMFERFHVNKLH
FLLQIIGGVTTYIIILIQLSASLKQ

>TcasGr47 (AM292354)

MDLEVLEIYFTVANKFSGKLWPI SIVLIYTVGVVYSFKRRIFYQDESPISRLVYIGTDLSYF
ISNVYQILAYNFWKKKYWSEFLANLKLKGRKIRKNLYLLEFVINVLYVLTLCYAVVYWRQ
QYEDFWHRYTLSFIENYCQFLYNCFHSTLLMILSRYQRLKAQLWQNRVETVAHGTVQKTT
LFFFNRFTGVP IFLVLVVFVQMOSVQDLSDIFYYKDTAQLVSLALLMQLTQLVPALFVIYLCG
RVMEEQNKIRLITFEMNKSFERDKNKLGDFVALIRDAQVKITAADFFILDKSTILKVLDTVV
AFLMVVAQFQD

>TcasGr48 (AM292369)

MHTLQHFTIDTRSTHSMKNFKYLKVLVTFAHFICLFPITINIRKNGLNYNFTKKCYFLRMVL
IDLLIVGCILKHIFNILMKNVTLNDVVFIFCSAPIIITILDIEILGYVNKAKFGKLLINLYT
INYNFKESERNDYVSLQLVVFVFCYFIYLFVYIYYSVHEASINFGYTLAKFMIFTSTCI
YTNLLRIIEADFSKLNHLLSGTENLDLVLPIYSQLVFMCKKINKLYGHQLLLTILTYLIWTI
YEMYHLAILWSCTSTNCPFLIMLALS YTVIQEVMLEF TILWNCQNRVASEDFKAIWYSILI
KKADSFCCKKLENYSLQLINHRVFTAMGLYVLNMEHFFSVKCSIQSESLNDILFPVAGFI
SDFDCDINSIQYFCLMARCLNTLIFYHYHISTYEYSI

>TcasGr49 (AM292370)

MCQIKNKL LLLDSSTQPNYLILSNKNNTYLVLNKYLLVKHSPKMP LLPKTPPLPLTLLYKLL
GIIQFPISAHFSFMSRFLCLPFYSYFFYLSYIYTTYSRKLSGIFKYIDQMAGYTGFLAMLTS
MVMFYKRSNDLKTLLSNLESIQIYSIKPKERNNSHWVRSGLFALITGNVLFYFPFLPSDVSYN
LFSFVPLVNALDHLFLNDILSDICDKFEQINQHFRRQIKSVDLFVIFPLTKAEKVRNLKED
EVTFSVQKIQELSHLHYKLANFTVKISGLFEITITAMVMWFGYVIDTMYLFIHIRSRQEDT
DTLVVIYTFNLFYLCFCFYWLLVMVAMFSRTQQSANKTATFVHEIWNKYALKNEVDKRVRLH
QLVAIRLLNNTKLQFTAKDFFNLDWTFCHMVSHKWLNYINQFEANFR

>TcasGr50 (AM292371)

MSLYSSINSLVLISKIFALLPVKHHRLEKLVPCVYLTFSFVLSLGSFIVSVYLTTKIDND
GESISLASGWL DLYLGITIQTLGII SN CINAKQITIFFDKIQRIDKQFGLLGSIN YRRISI
FVNLAAILGVFGEFVLVFPDYVFFVENEPILYLIFSYCPIVTTGIIKIQFATCAHLILQRVN
HVKKILEKETQTVAFPKDNHFLALLDIVHG VHNELCNLCQVANSIYGFQNFLFVLSTFSICI
TQFYCYDSGFNSDNLTDVYFTLQWAF LQILEILALAYLCDKVQLKIGEIKYSVNKLIFRSN
DPKVTLELCGMISTYLIIMIQLDLARTVPKFKENKNKETE Q

>TcasGr51 (AM292372)

MNMILKLSLKDIVFINPLVKYLNIFFITPWFYDFPTNQKYYPSLAKCYACLLMVVKILWVIYW
LQDDALKSVYASLLCTEKIFLFAIYTNLSILTTVTIFKSAFWDVDKWRTLFTNLQYIDINLQ
NKGKESKLMKNFYFWFVLKQVMFLCYSTYGIQVFGTMQRTSFFKTF LNSCLMDVYEFLLI
SLINILIRSFKSRKDLNQLKETACEQSKSVEELMNIANYRILGDTVEIFNSLFGYQIILV
IFDCCLETVSALNGAFLYTINGQGQFNIE MF LCNMSLLTVIPIHVWTSKEKISFLRGFWLSP
AVDMFYEFQIIELMTSVVKSLERSYADLNENFLQCQDEKFESFVYYHRILGETVDLNSLFG
YQTLITFHIGSQLVLHTVKTVLKTTMSTFSDITFMRTVWKFFNIFLITPFYFNENTIH
LCKLYATFLIALKLVWIVALFKNENLSEMVKQFLFTQKFTFVAGLATLSVLNLLSVIKSSFL
DINTWKMLVKSFDAIDSKLQTGGKVETSICKNFCFGFITKQLIFMIFVTYQLYCWSSFLKIS
VLQSLWASPTCDLMEYEFQIFTF LMSLLQSIKRRYVLLNEKVEAIKTS PKMRHELQKLAQVYR
ILGETIETWNKLFYQILLITFQSGLNVVSCINFLGVLDRGNFDIEIALCNGIFLLLTLS
LLQMVISMDSTVEEAKTFVDRCYKMQEQFTLNFRNSDELIFISIAKHNVRTFSAGGFFDIR
KNLIFSLIANVAMYFVVISVQFNQNKQKE

>TcasGr52 (AM292375)

MQDSFQYINRSELITSKIVSFVNSIFLVMASVTIILSSLI FNQE QWSSLNKNFQFIDKKLNN
RNSKSRV FYENVNFQFGSILALFGVVQIYIFSGFIVPSGVVYKIGYWLHQICHICELHTIFL
VCNVLT VFKIRYKDLNKALESSKISVGLIRD TAVLYRLLADNVANFNKIFGWSLIFLFGRIV
LQLLSSLGFLLYASKKQFTFEETF AI IHL SVFVYTLVSVILI IMGCDVVASNSRKTAE MCKY
LQGFY PEEAPQRKELLRFASESRG SVAKFTAADFFEIDRGTFFGILSTTTTSYFIIMI QFNMS
L

>TcasGr53 (AM292383)

MLKWVLKVG NVLAMP TPTKEKRFP HRIHSYFMVAFYVVFSSVSTFFKIPFYSTLRP INLLVQI
ILDVILLILNVHTILTITTKRNQWCKLLENLKLDR ENNSSFVANVLFQLIHVYYTVVFTLL
LGVDVFKEYAFEYIQLYSQFILYFLLFATL KILLGKYTQLKACLMEEK RPMVSLQVIKAQIY
SLRETVDVFN DIFGWPFLLLITFTSLQIMVYLQHIFVKS RPSPATIISNVTVISWQAVCTFY
NILLCDSVAHTAGELLGAVYSLDLELKH IENFNDFVTALKDNVPVFAAARFYAINRSTIFRM
FNAIVTFLI

>TcasGr54 (AM292373)

MSFKLLRLVLKVG HFFAITPGFRKNRTTCPEKIYAYGVVAFITLGVA VSVFYRAKDYAKFIH
IKAVVQITLDATLYVQNIYTVLTALTKKPLWFKLLK NLKMVQNHNNIREKSHYCLFVASNCF
FWSYQSYMSYIFANIMGLEFYKQFAIEYFQMYVLFVNF AAFVVKMLLVRYRNLTKQLRFK
LRF FEKLG NRRLGFVQR LDQIQFDICLLKEGVDLVNDIFGWQILFLITYATLQILVYLHLAV
MLGFQDIYMIVYIIVVIFWYTVNASTNIFLCDEICNEGQ TILGISYSLEKKTGDEIQDLIS
TIKDNFPRFYAARFFVINRGTILGILD AIVTFLIVMIQFEMTQNSTNINL

>TcasGr125 (AM292376)

MIKFSKVKS YFTTHD TLHNIY TSMKPVYAICKLIGLNTLRIGRKGELKQHKSDYFYFSFYI
TSYTL LSVYSLFRIATNENNSLVINKRLIFIECFVMMAL TLIVTLFTFLARGTLIKSFDMLS
HVDVSFIKAGFRLEYKQLLKR SYLIIISFVLF SLLARVPVMLMTISADFIQQIMLFVSALIKA
FSKYQFVVLVLQLQHRFGKINRTMRSFFSDNKQDDKIPQISDNLYILCRLHYKLT SVMQKIN
SAFSVQLLVSIGVSLFDVLFQAYLYYVATGKASFVTVPMIVCPIVWLMDEVVEIYLLVYAC
ASTCEQANDTPSILHEL RNNYFHMDLENNVQSYSLQLLHQKVQFSVLGFFVVDYTL LYSIVG
AVTTYLVIFIQFDQSSNSRNNYVLTNNSTC

>TcasGr56 (AM292377)

MLPKQFLKLFKDP CDVYTAIHPLFYVCTFFGLAPYSLVRVENGKKVFKFAWWPLTRNALLVL
ILLGALTYHAI FDLISFKDSDLQOKLRYFEEVFSSLLSCCSVIFGCIFALKVIEVFKNIEEV
DVAFRSLAVWVPYKHLVYVNI IHL SGLVTIVATLTVTIIFFASYQYGT KTYSLFIVFMTVIL
PYFINLLMELQYCHYLNILRVRYQLLNEYLETLVQETNRTSVEGWTDVSNV KRKSKEISKLP
KSMLAISDPVFIVDQVAALHIKLTDTAHMINYAF CVQQLLRITVAFISIVTALFLVAINFNK
SSSEENEGKTTQLDYFFTFWAFSNACEVMAI VWITSETCEEVSKKCYK

>TcasGr57 (AM292378)

MKEVPGWLT PPHSLGNTVTPVSLRFLYTI VHFIIIALYAHSSYGRENF IYGSMMNTVAIT
DKIANFMLTFFNVSLRIILVFSKGKVIKSFFNQGYELSKQEIFNCCSKKSFRMNF AIFNLYM
VLLLLFDAYLWISSVGV RMFQYYIGRSFTYYVCNTTIFLIFHSVLP IKRFFTS LGIAFDNIM
KNLICEIDGRHEFFLAEFKSAKTPPNKLCYDLRRVRKNYNSICELVDAFN NIYGLAMLEII
IVVITYVNLNLTDLFLVYGMSKSRNIEGVSFGTNLVILCALWIT TLLLFTILLAYGCAGATSE
AEKIAKICFYWLNEIPTMPVSIKDQTIKEELALLAQQSTSR TSKFSAAGFFPVDF TLLGFIF
GSVTSYIIISIQFIE

>TcasGr98 (AM292379)

MSYRLSRNDIRFLKVMYKLSHFLSITPNYDFENFVIISPRCDKISAI CPLLSTILGTCWIIY
VRIYCKEIRFFEISFEILGSLDSLILLMVLVSIILGSLKTKEWAKLNNKFQYIDEK LKTRDQ
KERNLFKNAYFQLVLSISVYSSSVGYTQYVRIAAGLPTLKL FALHEFYGF CYLWVLILICN
IALAFKQRYQLINEQMAVRINPKNCASFVIEVRKLSRLLGEMVGLFNDIFGWPLVFITGRFV
IKILVALNFFTSTLEIDNLYLKHKLEISSLVQTAITLVAMCGLVLICDSAKSESQQT VFLCY
KLMEKFPERSHEQQELYMAAQVIEKSVANFTAAGFFDVKRSTLFGILATTTTYLIVTIQFNQ
GLNK

>TcasGr59 (AM292380)

>TcasOr3 (AM689905)

MSKSEKIHTLATYFDSNIAFLKLTAFWIYDDETTTRRKKYLQHAYNIFWIFYL FVAYQPAELL
YVYYSFNDSLVSFLRALRDIGNHVS LAYKAFNYFIMRRDILKLMETLQHGNHYHEDCGDFQPK
LIVDEEKKEALKWTKYFLNFCNAICLSMFANGVFTFFIFLSDKQYVERNGQRVYHQEQPVNTV
SPFGSGTKLRFFVTFIYTMIALTFYAWTIVALDSLFITIMSCISSHLKILQGAFKTVRARCI
MRTRAERLLKEETLHDPPFLENCVNKEMIRKLES IYSTQTFVQTFISLGEMCFSLYLLSETA
DQNIGNEITYLIATGFELLMYCWFNGR ITEASLKISYALYESDWFPTSLSFKKQIIFTMTRM
QKPINVTIGKITPLAFSTFLTIARGAYSFFTF LKQRHGINH

>TcasOr4 (AM689906)

MDEEFLIGTFETEKKFLRYGSFYPCGKRIKFIFLGLFMFVYSWTEFLSMITVLFVERDNLTK
LSETLLFCMTQAAFLFKLVNFLYHNKTMLRIESILKNPILNCLDQFEKNIIEKYMIRVKYLA
RLFRILCILTVSFYGLFPFIDEDPDHMLPLPGWFPFDVKTHQIELVIAQTCGIAIGAFLNST
LDILPTILITLGSAQFDILKIRLENITSVDTSKSWLVKKAIKKCVIYHTILLKKIFYGFELW
QIKPKIDSCKFIAKIFRILCILVVLFYTLVPYLDDEKEDLSLPLPGWLPYNTKKYYPTVIFQ
VMSVSVSAYNNSSIDVLTCLMITVASAEFNLLKGALKTIDFHPKGHNTKQLIEAKFENCVNH
HKEIVK

>TcasOr5 (AM689907)

MVWSPKDVDYDLTLPILPAWKYFGLPAYKIIKTPNFKSLTHNNSKLNIMV IISTTAYLYYFK
VGDKNTNSFEKHMTMYRLVASFVNYMGAVIFCHKHKNKFLSNIIEKCALLQQRNLKLGKKEHS
FNKMAKILLTIYTTKLSSMIVVTVNDIVKISTSESHSTVKLGWYCNFITEMFLFYFLIVLRS
LYSQLLNCTKFKE SAQQVKELGKIHKDLNKLAMEVNETFGELMLLRFSGDFIYLIIVGLSSNA
VLNAEYETVLDVFWTFTVYVLWIPMALGFIALTVWYFEDILHHVGLQLVIL

>TcasOr6 (AM689908)

MSPHDSGTFARIRKIFSILVYTSTVVLSMAELFFNYKDLETVIRATESFFTQYGLAWKIAVF
VVYKTELAQIIRLCDNLWPLDEFGTGHNFQFLHKFLRRFFLLYTGNLALLCTQFAVTAFFDD
QFKSVMVYGEKESRSQIYDNFVFTLQVIYLYVGCFFVAGFDCFFFYLLGHAVTELKMLTIS
FSCKEIGRNWGYEERFKCSVKHHIHVLELLDKINKVYSVMLLNQHLCSL FVQLTQVMDKVEF
SDPLFFLNIVIGMHPFKADKFSKFR LAFSIAVYFAVIFSGVLELIVNSQGLETYARASDTLIP
QCQLVCKIFVLAKYKKQIARLLNGSQRFWDLGQFGARYGNSFGKTHKYLKSFLLYKVMLTF
TCLQFLAVKIIIFKIPKPIAISFGETKGLEPLYDHLVVLHAMITLVTINLVNGFDGLFFFYFI
GHVLTELKMKVAVFGDSP IETNWSEEKRFKFAVRHHRFVLE

>TcasOr7 (AM689909)

MYRLVASFVNYMGAESAQQVKELGKIHKDLNKLAMEVNETFGELMLLRFSGDFIYLIIVGLSS
NAVLNAEYETVLDVFWTFTVYVLWIPMALGFIALTVWYFEDILHHDARINENLTNLI EATKQ
DYIFRYCFYTGFFVYFYGASDFTILVLI TPVEKLYGHFLNNLENHNLEESVRVFFMLQDLAOST
FNIIEEFMLAKILIDFFYASTDVFYGTASALEVQTSLLATVLSFIVVLWLLFV VHSIVTIS
FVFGKVKEQHQVMNEIICERFRSKAAKNYRCEAKLLLRGKVNPLKFTICGFLPLDYCLAYTV
S

>TcasOr63 (AM689910)

MGFMIQDYDLRNASL ERKLMVVGFPYKRDNKHEILYWLSAFFNLLISYGQLTTMIIQMVF
DRSDLSKLTESLLYFFTHFTFLCKLLNFQYYSKD LIEIENFLTDPIFYGYSFEQLDIKAKI
RSCAFISNAFRICCTFTCSFYCLVPPIDESRKKILPLPGWFPYD TTNYYYSTFFVQSLSLFI
SAYCNTAIDILTWKLITLASAQFEILKENLTKIDYEGGFNETKGALVRCITHHAKIVNYTER
VEAIFSKGIFLQFGSVIVICTTGFQLIVVPIPSVQFAVLGTYLCG MTTQVATYCYYGHEVM
TTSDAIGMSLYLSN WYASHVKIRKIVMIFLEKTKKPTIVKAGNFITL SLATLTQILRSAYS
FAVLQRLYKDS

>TcasOr9 (AM689911)

MEKSSKLSDKFVYFYT FNCIASSLMPMIASLLGGNKNLPMVWVYPYDPNKTPYFHLTYIWEI
FCISNLGLIYAVLDLVFP CIAIVLGQQFKILASNFKNNVYRALVDSEVSEKIVQTF SKNLHN
DSFNEEIFEIMNSAKFKNNARYLRKNVKHHQQLLQYCADVSDILSIFLMGKVSAAIFNTLF
MAFSLITGNRAMIFGLGSYMVSTSI ELLIYTYSGQVLTQNA DIVGTLYESPWYMCDVHFQR
TFHIVQMRASKIVNVKAGNYFTMSASSYITFMKSLGIVYSALEGVN

>TcasOr10 (AM689912)

MATFLLYKTEMLDLIKKSERFWKLDLRFQAKNLHSTYPIFQIFFYVYVILFLTFCAMFAL
VNWIFDTGKPIISLCYGESEGLETPWVEFYIVLQSVETIIFLGITGYDMVFLYYAGSVCIQF
QMLKMAFAERKMNERQFLKAVKHHEFLQYVEQLGDIYSMWFLQYFSSFLGICFGLFLISK
EGLPTEPERLSKYFPYIFSFTMQSFTFCMTGTMLSDWSSEISDEIFHSDWSDQVYKNKTAR
LIVMNRAQRPAKISIGKFLDLNLRSFILSLDISNVIFYVDWLDDEVYKSKTARLVIMNKAQS
PVKLTIGKFTGMDLRTFLLV

>TcasOr11 (AM689913)

MGKVKFTEPLEFLNVVGLNPENCSNFSLFRRVISLGFVFLVITLGLLELLHFEGLTCSRA
SEAMIVQYQLFIKIAVLLKHRKNLVVLMQKTRKFWPLDKFGQDAKIERPHKLLKAFFAYKL
IMILMALQYILRKFVSKNGKPLAIAFGESKGLSPKVDHLYFVLHSTSTFVVLHAVTGFDRLF
FFLIGHVLTTELKLVKKSRYRLTQNRREKFLQVHHAFALEIPDLGHVTKYVPYVISFITQT
FTFCFIGSLLITWSLQVPDAIFYNDWGKNQAYKYKTDKIIAMIRGQRAAKLTLGGFGDLDE
SFNLVVKNAFSFFTFVNAMNQK

>TcasOr12 (AM689914)

MAHNLDVDLTEFVRFNIKCIQFFGYFSPDFRNSQRKLLFRIYAALFVGFILSLLSQIAN
MVDAFGDIEKMTEASFLFTNLVQCCKIYTFANHGKKVWNLVYSMNRSDFKPNNLAQYWIIV
NEIKTSKIIISKLFLACTLTCVSWAISPLLDKRGSDDELRLPLSGWYPFSTEKSPAFAFYTY
QIFTTWVGGLGDISMDTFMSGTIMVISTQLSLLKDGLENVARNIKHDKSSVNKNLIQCACHY
RSIIQFAAEVTNLFTTCITAQFVVGVIIVCMSMFQMSLVSVLSFQFAAMLLYQICVLMETYL
WCFYGNVMLKSDQLTQAAYMSEWLDGTEEFKQNLFLMTRTQFPLKLYASGGKVTQSYLLN
LE

>TcasOr13 (AM689915)

MSAMSTVIVSGEMFDLFSPLVLYLSRIFCLQPLKWIKTDSYVVISKSGPYMAYSILTSFLIT
ASIIYGLTQVYSMEAVYLIRLSSNTDRFVTFSDVVVVLIPCIIGVPIASHNIEKTIKYFSFLR
QFDCCLOKQPPKTKWSFFVPIITIVFTATILLFDVAVMWLTLIARNQSIFILSLPYVVCYCF
MIIIEIMFWQFVNSIKIRLILLNERLEQIGGEDFTIVRIDRKKINSIVDTLKVKKKQAKCGV
TNEQVRDLIIAYQKLTDAANLVNDSFGLLILIVISGCLVHLLATPYALYAIIFTTGNMTMFI
TQSIWMTGHVLRLLLIVEPCHGCILVAKTTTQLVCKLLCLDLKKEVKKSLEFFMTYLAECQI
RFTAYGFTKLHRGLLTTITGAVTTYLVILFQFN

>TcasOr56 (AM689916)

MTATKSLKEIPPIYLRVHLTVLQILGIDILPVESVPQNLFYTYTALIISTMCLFTIAEFLDM
VLNYEDIYRLTFGLCYCVTHVLGTVMFLMLYLRKKLWGNLTTLEEGIFKPNPTRGGPEELQ
IVNDAITMCNRQGYVYFVTLVFLIIGARLLYASLANWPYDKHNYFDGNVTIVNTKEMPYTTW
MPFDYNDSPLYETIFAFQIFSTTVYGFYIGAADAVICGFMMLIKAQFLIVKRELETLIERAQ
KAAIAENPDNEDNFGREIERIELLDKRTQDYVAKYANECVYHHQELIALCDHAEEDFCYLML
LQFISLLIVCFQLFQVSTLSPDSVEFFSMVCYLLMLFQLLCYCWGNEVQIVSGELSRYA
FGINWIIMRESPKTLMLMMRAQRPCYFTAGKFSLLSLQTFMTIVRGAGSYFMFLRQMNII

>TcasOr15 (AM689917)

MSKNLKEIPVYLVHLTVLQILGIDILPNERIPQTLFYTYSVLLIATMVVFTTAECLDLVL
NYEDIYKLTFLGLCCCVTHVLGAAKMFMLYLRKKLWGYFTTLENGIFKPNPCRGGAEFEIV
TSAINMCKRQGYVYVTLVGVGTGGQGLYAALANLPYDKHNYFDGNVTVVVNTKQMPYATWTP
FDYNDSPLYEIMFAFQIFSTTLYGFYIGAADAVICGFLMLIKAQFLIVKRELETLIVERAQR
GNPDRGDFGGINRIEMLDGTVFVEKCANECVYHHQELIALCEHAEEDFCYLMLLQFIS
LLIVCFQLFQLSTVVRGAGSYFMFLKQMNII

>TcasOr16 (AM689918)

MMKFKVTGLVADLMPNIRLIQASGHFMLNYHADNSGALHTLRLGYCCMHLVFLVQYGCNFV
NLVLERGDVNDLAANTITVLFVTHCVTKFVYFAVRSKLFYRTLGIWNQPNSHPLFVESNNRY
HGIALKKMRLLYIIIIWTSFSAIAWTGITFVGDVSVHNKDPENENLTITEPIPRLLVKAWY
PWDAMSGMPYIITLVFQIYVFFSLAHANLLDSLFCSWLIFACEQLQHLKEIMKPLMELSAT
LDTYVPKSADLFRAPSATSQDQLIENDYNEKNEDLKGVYSTRQELGGHFRGGALQNFSGGV
GPNGLTKKQELMVRSAIKYWVERHKHVRLVTAIGDAYGVALLHMLTSTIMLTLAYQATK
ITGVDKYAATVLGYLLFALAQVFHFCIFGNRLIEESSVMEAAYSCHWYDGSSEAKTFVQIV
CQQCQKAMSISGAKFFTISLDLFAVVLGAVVTFYFMVLVQLK

>TcasOr17 (AM689919)

MSNFSWKA AVETNITTLKILGLWPKGDETYKLN FYTLYAVFGVIGLLCAHSFVQIFNIYFIV
DDLEAFTSSIFVTL SCLGTVAKYTYLLQNMQMLKELFISINKDIFQPKNNKQILLVEPSIKF
WQRFYLIFRVLCYCTTFWSSYPILDKWTKDHRLPFLAWYPYDSTKSPFYELTYIHQVVSIV
YLV SASLNI DMLIAALNMFVGAQC DLLCDNLRNIGQNSKEIGKNLVKCI EHHREILR

>TcasOr18 (AM689920)

MAKLEYLTGATFTL KCAVLYPIDSNPKIKKILYAVWAIFFILTFVTGFIQCFVFCINPFD
LVQEAMIIMSLV FYKNWQNMVALVTNINKNFHRATDNVIEKISMDQASELSDKLAYVWTSSL
AVGSVVPVVLAIATGNLEMPMPAWFPYDYNKSPVFEITYLWQVFC LITLAIY GASDMFFPC
ITIIIGQQFKILASNFKNFYTS LIKLGAEESIVQNF SKDIKTHEFRSFYIKYGNIFKILNN
AKFQTLNRAFLKRN I KHHKLLLRFCEDLNKI LN TFLLRVSAIVFNLI FIFGNIIISTDRTL
MLGFCNYFCFGSTELFIHTYSGQIL TENADFLWTLYECPWYLC DVTYQKMLILVQMRVKRMV
STKAGNFFTMIAPS FIAFQRAVFSYITLLKEVTDLGKD

>TcasOr19 (AM689921)

MVLLPTDFGRFRHHPH IRSAGFDAPLEAMEEGMDI SEDLGIFAAIIGLVTMMVLYVVKQKDL
SSLLQDL SNFEKFGKPPNFDKVNKRLDFLVKFVFSY AIFGAVVYNLMRIIEIPHCKRNKIR
EVCGVFVPLWTFDADYPPVLVLVASVVFIVVILIDKV TLLVSLQVLEISCHIRLRIEQLNA
MILNCFNGDLQSSRKRLNDCVQYHIDIISYSERFNNCF TNGMFIHLATTGIIIGCLENQNV
GATPGGVLHLFGWIIISLFTSCLAGQILLDSSTSVADALYNSQWYTADV KLRKNLILMIQRSQ
KPLFLATGAFNIMS FALFVTV

>TcasOr20 (AM689922)

MMDETYLQFFVKSFTYLNMLPEKTTFTCTTIQQYYVSVIITITTFPILADLVSQFYEESISFT
SVNENFVALSALFAVIYVSVCFINRKHKIRALIADLALFETFSSKAVITETDKSVK FYTKLF
IVYGIVGNLCYGLLPILGYKKCHESKSVHMTRYGIPCGLVVRFLFPFKFDYSPLAELVALYE
ILVCILGTSVVI VTTLICGVLIHITVQLQCLRKII LDLSQVNDLEI LEHKMKFCVKYHTAI
LDYGIRTDLAFNQMMLLHITWTGFIISVLGFEISTDDYVEAFRFFMHLLGWLGMFLVVCYY
GQKILDESLAIADAVYTF L WYKKSIVVQRYVLLILLRSQKPLTLRACGVKVM SLATFLGVLY
SAYSYFTLLLKLP

>TcasOr21 (AM689923)

MEKYDWMQA IKTNILILKIVGLWPDSEDYKFD FYALHASVWLSTLLVASTFFQGINIIFILD
DVKALTGTAYVLLTEILAVIKTYFVVKNMKMLKHLMQSLN NNKLFQPRSHEQIKLIQPSLKF
WKL LYNLFHSLVGGATLFWILFPIVDKKEKRLPFLGWYIVDTKVSPYIEIVYGFQFCSCCYM
SALIINIDTLIAALNVYIGNQIDILCNLRNLKAGCSI ERDLITCIKHHQEILK

>TcasOr22 (AM689924)

MAKDSSPVLQESIEIMKYLQLWPQNEHTNLR RRF CFVILLCSPLTLGLAAHLIVCIKDNLDV
ELSANIAVLSAVTGLTYMLIVFVWSQDKVHLLAKLGTHEIFGTPDNFKKRSRRLDFYAKLY
SYYCYFGI VIYSLQI IEMPECRKINEEKGLSEICGMIVPFWAPFDIDWFPLKQIFWFDQLL
GIYII IKGGA AVSITTFEVAQYICLKIKHLN SLLRQAFDDPHEEVIEKRL LH CIRYQQHIIR
TNELFNVCYKHCNGCYVVMVGIIIASLLNQI IKVTAPGLKKASELSILQAGFAAFSSAVTR
VISESLTIPDAALDSKWYEAPIKSQKMLLLL LRSQKAFNLHATPVGIMSFALFVALLKTSY
SYFTLLHQST

>TcasOr23 (AM689925)

MAKDTSPVLRESIEVMKYLQLWPQNERTNLR RRYFIVIFLCSPLHLGLATHLVVCLKDNLDV
DLSANIAVLSAVTGLTYMLIVFVWSQDKLVHLLAKLDTHEIFGTPDNLTKR SRRLNFYAKLY
SYYCYFGI VIYSLVQI IEMPQCRKMNEEKGLSEICGMIVPFWAPFDIDWFPLKQIFWLNQLL
GIYII IKGGA AVSITTFEVAQYICLKIKHLN RLLREAFDDPCDVVVEQKLLHCIRYQQHIIR
TNELFNVCFKHCNGCYVVMVGIIIASLLNQILKEKSVGALVHFAGWIC SFFICCHAGQAVIS
ESLTIPEAALDSHWYEAPVKYKVL LLLL LRSQKAFNLQATPIGIMSF DL

>TcasOr24 (AM689926)

MTEEKQLR ICLSSCFFLKWSFMWPTKSEEFRTSKGLYFRLLAFV IISGLTFTAMIVMHLLKS
VEAGDYDISEDIAI LATNTGYILMMLLYIIRQKDLESLLVDLSSFKKYQKPPKFDEVNRKLE
WCTRMVFGYCVFGSVFYNLVKILAI PSCKKSR RINEVCGVAIPYWVWFDTENWSIKLPLILH
TFLV IIVDKVTLLVSLQVLEIACNIKLR LDQLNCMLVSCFDGDVEASRRRLNECIKYHKEI

ISYSEIFSKCFSEIEMFTHLTTTGIICGCLENQVVQEHPEAILHIGGWITAI FVSSFGGQIL
IDSSLSVAEAAAYSSAWYEADIMKMSYSILTILQ

>TcasOr25 (AM689927)

MTEEKELRLCLWSCYLLKLSLMWPLKREEFKSSKGLYLRLLVFVIISGSTFTAMIFMHLYKS
LKVGSYDVSEDLAILASNIGYVLMMTMYVSRQKDLELLLLDLSDFKTYGKPPNFDKVRKRMD
LYAHLIFFYSMFGSFVYNMDKIILIDKCKEARRINEVCGSAIPFWTPFETEDLFTLTLVITY
VLINIFVVVKVAMTVSVQVLEISSHINLRIEQLKIFIAGCFDRDFKASRERLDFCIRYHNVI
IDFSERFSRCFSYVMFIHLAITGIIIGCLENQIVQEHQPEAMLHMGGWSTATFIACYGGQLL
MDASTSIADefYNCPWYEADV KMRKDLILILRAQKALFVSTGPFNVLSFALFVSLKTSFIW
PPKNEEMTPSRWFYIKLAVLLTVSVIILYVPVCIHIHKL FERDL DASEDFALMFSYGF LST
MIFYSKNHKKICGLIYNLCSFEFEGKPPQFDELNQR LDFYSKLASGYTIIGMAVYIGMKIYK
IPDCKAERGAIQVCGLTVPLLCEQFNEAYYWTAFSHIVCSVLACACVAHQAVNQDVLAVLHY
IGWIMSIFVVCWAGQILTDSSVTVADACFGSNWLRACPRLRRDLSFMMRRSQKCVELRAGPF
NVLCFSLFVSPIIITKHICERQNAARHFDDICGLVTNSWMPFDIKKFPNKQLFYLWQTYSVYW
TYEGSAAISYLIVATMEHVLMRIWHLQGMIQEAINTEDAQVRKSRLDKCLEYHNHVFLLAAD
VDRIYQRS L FVHVL FSGVLF GIMGFSILT VGISVKTTLTCRRKGFMMG

>TcasOr26 (AM689928)

MMESTVTRLKRMYLWPTASVTSRKP AFFLITFSCFLLYGSVMHLIVNDISMEEVHVIETTAG
QFGVLYYLT LFTIYRKGILEIYADLSNF TKFGKPYNFDKRNKQLNQWSRWF SVVLYFFVISV
FAWPGIFTQSCEDLNVALNKTEVCGVVSPVWLPFRFDYKPMKQFVYFWQSFCCLYSNGGAGT
ISFAMSETIEHLILRVEDLKILFPKIVAERSPEVRRKMLAKWVDYHLWLLSIGKLMNDTYRY
SFSVIVLCAGTLFGCIGYTVMKFHSVGT TVYNSEWCDTDVDFQKGVILITIRAQKPVRIYAG
PFSYVSHLLILT V FQTSYSYINLLNASS

B

ID	TcasGr1 (AM292322)			
FT	DOMAIN	1	41	NON CYTOPLASMIC.
FT	TRANSMEM	42	61	
FT	DOMAIN	62	70	CYTOPLASMIC.
FT	TRANSMEM	71	93	
FT	DOMAIN	94	134	NON CYTOPLASMIC.
FT	TRANSMEM	135	154	
FT	DOMAIN	155	170	CYTOPLASMIC.
FT	TRANSMEM	171	191	
FT	DOMAIN	192	207	NON CYTOPLASMIC.
FT	TRANSMEM	208	229	
FT	DOMAIN	230	241	CYTOPLASMIC.
FT	TRANSMEM	242	266	
FT	DOMAIN	267	272	NON CYTOPLASMIC.
FT	TRANSMEM	273	296	
FT	DOMAIN	297	373	CYTOPLASMIC.
//				
ID	TcasGr2 (AM292323)			
FT	DOMAIN	1	187	NON CYTOPLASMIC.
FT	TRANSMEM	188	209	
FT	DOMAIN	210	222	CYTOPLASMIC.
FT	TRANSMEM	223	246	
FT	DOMAIN	247	284	NON CYTOPLASMIC.
FT	TRANSMEM	285	305	
FT	DOMAIN	306	317	CYTOPLASMIC.
FT	TRANSMEM	318	339	
FT	DOMAIN	340	390	NON CYTOPLASMIC.
FT	TRANSMEM	391	412	
FT	DOMAIN	413	440	CYTOPLASMIC.
FT	TRANSMEM	441	463	
FT	DOMAIN	464	521	NON CYTOPLASMIC.
FT	TRANSMEM	522	545	
FT	DOMAIN	546	586	CYTOPLASMIC.
//				
ID	TcasGr3 (AM292359)			
FT	DOMAIN	1	58	NON CYTOPLASMIC.
FT	TRANSMEM	59	79	
FT	DOMAIN	80	91	CYTOPLASMIC.
FT	TRANSMEM	92	111	
FT	DOMAIN	112	133	NON CYTOPLASMIC.
FT	TRANSMEM	134	155	
FT	DOMAIN	156	176	CYTOPLASMIC.
FT	TRANSMEM	177	196	
FT	DOMAIN	197	211	NON CYTOPLASMIC.
FT	TRANSMEM	212	234	
FT	DOMAIN	235	286	CYTOPLASMIC.
FT	TRANSMEM	287	308	
FT	DOMAIN	309	313	NON CYTOPLASMIC.
FT	TRANSMEM	314	335	
FT	DOMAIN	336	436	CYTOPLASMIC.
//				

ID	TcasGr4 (AM292325)			
FT	DOMAIN	1	32	NON CYTOPLASMIC.
FT	TRANSMEM	33	51	
FT	DOMAIN	52	64	CYTOPLASMIC.
FT	TRANSMEM	65	88	
FT	DOMAIN	89	119	NON CYTOPLASMIC.
FT	TRANSMEM	120	142	
FT	DOMAIN	143	155	CYTOPLASMIC.
FT	TRANSMEM	156	176	
FT	DOMAIN	177	192	NON CYTOPLASMIC.
FT	TRANSMEM	193	213	
FT	DOMAIN	214	226	CYTOPLASMIC.
FT	TRANSMEM	227	248	
FT	DOMAIN	249	258	NON CYTOPLASMIC.
FT	TRANSMEM	259	281	
FT	DOMAIN	282	309	CYTOPLASMIC.
//				
ID	TcasGr5 (AM292326)			
FT	DOMAIN	1	109	NON CYTOPLASMIC.
FT	TRANSMEM	110	131	
FT	DOMAIN	132	147	CYTOPLASMIC.
FT	TRANSMEM	148	169	
FT	DOMAIN	170	209	NON CYTOPLASMIC.
FT	TRANSMEM	210	230	
FT	DOMAIN	231	244	CYTOPLASMIC.
FT	TRANSMEM	245	265	
FT	DOMAIN	266	311	NON CYTOPLASMIC.
FT	TRANSMEM	312	334	
FT	DOMAIN	335	344	CYTOPLASMIC.
FT	TRANSMEM	345	369	
FT	DOMAIN	370	392	NON CYTOPLASMIC.
FT	TRANSMEM	393	413	
FT	DOMAIN	414	522	CYTOPLASMIC.
//				
ID	TCasGr6 (AM292327)			
FT	DOMAIN	1	127	NON CYTOPLASMIC.
FT	TRANSMEM	128	151	
FT	DOMAIN	152	161	CYTOPLASMIC.
FT	TRANSMEM	162	186	
FT	DOMAIN	187	212	NON CYTOPLASMIC.
FT	TRANSMEM	213	232	
FT	DOMAIN	233	247	CYTOPLASMIC.
FT	TRANSMEM	248	267	
FT	DOMAIN	268	282	NON CYTOPLASMIC.
FT	TRANSMEM	283	304	
FT	DOMAIN	305	336	CYTOPLASMIC.
FT	TRANSMEM	337	356	
FT	DOMAIN	357	358	NON CYTOPLASMIC.
FT	TRANSMEM	359	378	
FT	DOMAIN	379	387	CYTOPLASMIC.
//				
ID	TcasGr7 (AM292328)			
FT	DOMAIN	1	73	NON CYTOPLASMIC.

FT	TRANSMEM	74	95	
FT	DOMAIN	96	105	CYTOPLASMIC.
FT	TRANSMEM	106	125	
FT	DOMAIN	126	150	NON CYTOPLASMIC.
FT	TRANSMEM	151	172	
FT	DOMAIN	173	191	CYTOPLASMIC.
FT	TRANSMEM	192	212	
FT	DOMAIN	213	225	NON CYTOPLASMIC.
FT	TRANSMEM	226	246	
FT	DOMAIN	247	288	CYTOPLASMIC.
FT	TRANSMEM	289	310	
FT	DOMAIN	311	319	NON CYTOPLASMIC.
FT	TRANSMEM	320	340	
FT	DOMAIN	341	429	CYTOPLASMIC.
//				
ID	TcasGr104 (AM292329)			
FT	DOMAIN	1	44	NON CYTOPLASMIC.
FT	TRANSMEM	45	64	
FT	DOMAIN	65	74	CYTOPLASMIC.
FT	TRANSMEM	75	97	
FT	DOMAIN	98	138	NON CYTOPLASMIC.
FT	TRANSMEM	139	160	
FT	DOMAIN	161	173	CYTOPLASMIC.
FT	TRANSMEM	174	193	
FT	DOMAIN	194	231	NON CYTOPLASMIC.
FT	TRANSMEM	232	258	
FT	DOMAIN	259	280	CYTOPLASMIC.
FT	TRANSMEM	281	304	
FT	DOMAIN	305	348	NON CYTOPLASMIC.
FT	TRANSMEM	349	370	
FT	DOMAIN	371	379	CYTOPLASMIC.
//				
ID	TcasGr9 (AM292330)			
FT	DOMAIN	1	54	NON CYTOPLASMIC.
FT	TRANSMEM	55	77	
FT	DOMAIN	78	88	CYTOPLASMIC.
FT	TRANSMEM	89	110	
FT	DOMAIN	111	138	NON CYTOPLASMIC.
FT	TRANSMEM	139	159	
FT	DOMAIN	160	173	CYTOPLASMIC.
FT	TRANSMEM	174	193	
FT	DOMAIN	194	223	NON CYTOPLASMIC.
FT	TRANSMEM	224	244	
FT	DOMAIN	245	286	CYTOPLASMIC.
FT	TRANSMEM	287	310	
FT	DOMAIN	311	318	NON CYTOPLASMIC.
FT	TRANSMEM	319	339	
FT	DOMAIN	340	408	CYTOPLASMIC.
//				
ID	TcasGr10 (AM292331)			
FT	DOMAIN	1	85	NON CYTOPLASMIC.
FT	TRANSMEM	86	110	
FT	DOMAIN	111	120	CYTOPLASMIC.

FT	TRANSMEM	121	141	
FT	DOMAIN	142	167	NON CYTOPLASMIC.
FT	TRANSMEM	168	190	
FT	DOMAIN	191	208	CYTOPLASMIC.
FT	TRANSMEM	209	228	
FT	DOMAIN	229	269	NON CYTOPLASMIC.
FT	TRANSMEM	270	294	
FT	DOMAIN	295	306	CYTOPLASMIC.
FT	TRANSMEM	307	329	
FT	DOMAIN	330	385	NON CYTOPLASMIC.
FT	TRANSMEM	386	406	
FT	DOMAIN	407	437	CYTOPLASMIC.
//				
ID	TcasGr11 (AM292332)			
FT	DOMAIN	1	56	NON CYTOPLASMIC.
FT	TRANSMEM	57	77	
FT	DOMAIN	78	89	CYTOPLASMIC.
FT	TRANSMEM	90	112	
FT	DOMAIN	113	140	NON CYTOPLASMIC.
FT	TRANSMEM	141	161	
FT	DOMAIN	162	175	CYTOPLASMIC.
FT	TRANSMEM	176	197	
FT	DOMAIN	198	240	NON CYTOPLASMIC.
FT	TRANSMEM	241	264	
FT	DOMAIN	265	276	CYTOPLASMIC.
FT	TRANSMEM	277	297	
FT	DOMAIN	298	302	NON CYTOPLASMIC.
FT	TRANSMEM	303	324	
FT	DOMAIN	325	344	CYTOPLASMIC.
//				
ID	TcasGr12 (AM292333)			
FT	DOMAIN	1	28	NON CYTOPLASMIC.
FT	TRANSMEM	29	48	
FT	DOMAIN	49	60	CYTOPLASMIC.
FT	TRANSMEM	61	83	
FT	DOMAIN	84	104	NON CYTOPLASMIC.
FT	TRANSMEM	105	125	
FT	DOMAIN	126	142	CYTOPLASMIC.
FT	TRANSMEM	143	163	
FT	DOMAIN	164	209	NON CYTOPLASMIC.
FT	TRANSMEM	210	234	
FT	DOMAIN	235	266	CYTOPLASMIC.
FT	TRANSMEM	267	287	
FT	DOMAIN	288	290	NON CYTOPLASMIC.
FT	TRANSMEM	291	309	
FT	DOMAIN	310	316	CYTOPLASMIC.
//				
ID	TcasGr13 (AM292334)			
FT	DOMAIN	1	102	NON CYTOPLASMIC.
FT	TRANSMEM	103	122	
FT	DOMAIN	123	134	CYTOPLASMIC.
FT	TRANSMEM	135	157	
FT	DOMAIN	158	178	NON CYTOPLASMIC.

FT	TRANSMEM	179	199	
FT	DOMAIN	200	216	CYTOPLASMIC.
FT	TRANSMEM	217	237	
FT	DOMAIN	238	283	NON CYTOPLASMIC.
FT	TRANSMEM	284	308	
FT	DOMAIN	309	340	CYTOPLASMIC.
FT	TRANSMEM	341	361	
FT	DOMAIN	362	364	NON CYTOPLASMIC.
FT	TRANSMEM	365	383	
FT	DOMAIN	384	390	CYTOPLASMIC.
//				
ID	TcasGr14 (AM292335)			
FT	SIGNAL	1	27	
FT	DOMAIN	1	10	N-REGION.
FT	DOMAIN	11	21	H-REGION.
FT	DOMAIN	22	27	C-REGION.
FT	DOMAIN	28	114	NON CYTOPLASMIC.
FT	TRANSMEM	115	135	
FT	DOMAIN	136	148	CYTOPLASMIC.
FT	TRANSMEM	149	173	
FT	DOMAIN	174	185	NON CYTOPLASMIC.
FT	TRANSMEM	186	206	
FT	DOMAIN	207	225	CYTOPLASMIC.
FT	TRANSMEM	226	246	
FT	DOMAIN	247	270	NON CYTOPLASMIC.
FT	TRANSMEM	271	294	
FT	DOMAIN	295	323	CYTOPLASMIC.
FT	TRANSMEM	324	344	
FT	DOMAIN	345	347	NON CYTOPLASMIC.
FT	TRANSMEM	348	369	
FT	DOMAIN	370	374	CYTOPLASMIC.
//				
ID	TcasGr15 (AM292336)			
FT	DOMAIN	1	117	NON CYTOPLASMIC.
FT	TRANSMEM	118	138	
FT	DOMAIN	139	149	CYTOPLASMIC.
FT	TRANSMEM	150	175	
FT	DOMAIN	176	242	NON CYTOPLASMIC.
FT	TRANSMEM	243	262	
FT	DOMAIN	263	282	CYTOPLASMIC.
FT	TRANSMEM	283	302	
FT	DOMAIN	303	358	NON CYTOPLASMIC.
FT	TRANSMEM	359	380	
FT	DOMAIN	381	390	CYTOPLASMIC.
FT	TRANSMEM	391	412	
FT	DOMAIN	413	420	NON CYTOPLASMIC.
FT	TRANSMEM	421	442	
FT	DOMAIN	443	455	CYTOPLASMIC.
//				
ID	TcasGr16 (AM292337)			
FT	DOMAIN	1	36	NON CYTOPLASMIC.
FT	TRANSMEM	37	57	
FT	DOMAIN	58	72	CYTOPLASMIC.

FT	TRANSMEM	73	98	
FT	DOMAIN	99	132	NON CYTOPLASMIC.
FT	TRANSMEM	133	154	
FT	DOMAIN	155	175	CYTOPLASMIC.
FT	TRANSMEM	176	196	
FT	DOMAIN	197	254	NON CYTOPLASMIC.
FT	TRANSMEM	255	279	
FT	DOMAIN	280	288	CYTOPLASMIC.
FT	TRANSMEM	289	310	
FT	DOMAIN	311	350	NON CYTOPLASMIC.
FT	TRANSMEM	351	371	
FT	DOMAIN	372	452	CYTOPLASMIC.
//				
ID	TcasGr17 (AM292338)			
FT	DOMAIN	1	32	NON CYTOPLASMIC.
FT	TRANSMEM	33	54	
FT	DOMAIN	55	67	CYTOPLASMIC.
FT	TRANSMEM	68	89	
FT	DOMAIN	90	125	NON CYTOPLASMIC.
FT	TRANSMEM	126	147	
FT	DOMAIN	148	162	CYTOPLASMIC.
FT	TRANSMEM	163	184	
FT	DOMAIN	185	236	NON CYTOPLASMIC.
FT	TRANSMEM	237	261	
FT	DOMAIN	262	274	CYTOPLASMIC.
FT	TRANSMEM	275	295	
FT	DOMAIN	296	333	NON CYTOPLASMIC.
FT	TRANSMEM	334	353	
FT	DOMAIN	354	372	CYTOPLASMIC.
//				
ID	TcasGr150 (AM292339)			
FT	DOMAIN	1	32	NON CYTOPLASMIC.
FT	TRANSMEM	33	54	
FT	DOMAIN	55	67	CYTOPLASMIC.
FT	TRANSMEM	68	89	
FT	DOMAIN	90	125	NON CYTOPLASMIC.
FT	TRANSMEM	126	147	
FT	DOMAIN	148	162	CYTOPLASMIC.
FT	TRANSMEM	163	184	
FT	DOMAIN	185	236	NON CYTOPLASMIC.
FT	TRANSMEM	237	261	
FT	DOMAIN	262	274	CYTOPLASMIC.
FT	TRANSMEM	275	295	
FT	DOMAIN	296	345	NON CYTOPLASMIC.
FT	TRANSMEM	346	368	
FT	DOMAIN	369	387	CYTOPLASMIC.
//				
ID	TcasGr19 (AM292340)			
FT	DOMAIN	1	55	NON CYTOPLASMIC.
FT	TRANSMEM	56	79	
FT	DOMAIN	80	88	CYTOPLASMIC.
FT	TRANSMEM	89	111	
FT	DOMAIN	112	124	NON CYTOPLASMIC.

FT	TRANSMEM	125	150	
FT	DOMAIN	151	168	CYTOPLASMIC.
FT	TRANSMEM	169	189	
FT	DOMAIN	190	219	NON CYTOPLASMIC.
FT	TRANSMEM	220	242	
FT	DOMAIN	243	251	CYTOPLASMIC.
FT	TRANSMEM	252	275	
FT	DOMAIN	276	278	NON CYTOPLASMIC.
FT	TRANSMEM	279	301	
FT	DOMAIN	302	355	CYTOPLASMIC.
//				
ID	TcasGr20 (AM292341)			
FT	DOMAIN	1	51	NON CYTOPLASMIC.
FT	TRANSMEM	52	73	
FT	DOMAIN	74	83	CYTOPLASMIC.
FT	TRANSMEM	84	109	
FT	DOMAIN	110	136	NON CYTOPLASMIC.
FT	TRANSMEM	137	159	
FT	DOMAIN	160	175	CYTOPLASMIC.
FT	TRANSMEM	176	197	
FT	DOMAIN	198	265	NON CYTOPLASMIC.
FT	TRANSMEM	266	291	
FT	DOMAIN	292	312	CYTOPLASMIC.
FT	TRANSMEM	313	334	
FT	DOMAIN	335	360	NON CYTOPLASMIC.
FT	TRANSMEM	361	383	
FT	DOMAIN	384	393	CYTOPLASMIC.
//				
ID	TcasGr21 (AM292342)			
FT	DOMAIN	1	48	NON CYTOPLASMIC.
FT	TRANSMEM	49	74	
FT	DOMAIN	75	89	CYTOPLASMIC.
FT	TRANSMEM	90	115	
FT	DOMAIN	116	143	NON CYTOPLASMIC.
FT	TRANSMEM	144	164	
FT	DOMAIN	165	176	CYTOPLASMIC.
FT	TRANSMEM	177	196	
FT	DOMAIN	197	250	NON CYTOPLASMIC.
FT	TRANSMEM	251	272	
FT	DOMAIN	273	286	CYTOPLASMIC.
FT	TRANSMEM	287	308	
FT	DOMAIN	309	325	NON CYTOPLASMIC.
FT	TRANSMEM	326	345	
FT	DOMAIN	346	386	CYTOPLASMIC.
//				
ID	TcasGr22 (AM292343)			
FT	DOMAIN	1	51	NON CYTOPLASMIC.
FT	TRANSMEM	52	71	
FT	DOMAIN	72	80	CYTOPLASMIC.
FT	TRANSMEM	81	98	
FT	DOMAIN	99	110	NON CYTOPLASMIC.
FT	TRANSMEM	111	129	
FT	DOMAIN	130	149	CYTOPLASMIC.

FT	TRANSMEM	150	170	
FT	DOMAIN	171	184	NON CYTOPLASMIC.
FT	TRANSMEM	185	209	
FT	DOMAIN	210	246	CYTOPLASMIC.
FT	TRANSMEM	247	265	
FT	DOMAIN	266	267	NON CYTOPLASMIC.
FT	TRANSMEM	268	287	
FT	DOMAIN	288	301	CYTOPLASMIC.
//				
ID	TcasGr79 (AM292344)			
FT	DOMAIN	1	54	NON CYTOPLASMIC.
FT	TRANSMEM	55	75	
FT	DOMAIN	76	85	CYTOPLASMIC.
FT	TRANSMEM	86	108	
FT	DOMAIN	109	122	NON CYTOPLASMIC.
FT	TRANSMEM	123	142	
FT	DOMAIN	143	153	CYTOPLASMIC.
FT	TRANSMEM	154	173	
FT	DOMAIN	174	192	NON CYTOPLASMIC.
FT	TRANSMEM	193	216	
FT	DOMAIN	217	243	CYTOPLASMIC.
FT	TRANSMEM	244	263	
FT	DOMAIN	264	266	NON CYTOPLASMIC.
FT	TRANSMEM	267	286	
FT	DOMAIN	287	291	CYTOPLASMIC.
//				
ID	TcasGr123 (AM292345)			
FT	DOMAIN	1	72	NON CYTOPLASMIC.
FT	TRANSMEM	73	97	
FT	DOMAIN	98	105	CYTOPLASMIC.
FT	TRANSMEM	106	124	
FT	DOMAIN	125	142	NON CYTOPLASMIC.
FT	TRANSMEM	143	164	
FT	DOMAIN	165	176	CYTOPLASMIC.
FT	TRANSMEM	177	196	
FT	DOMAIN	197	243	NON CYTOPLASMIC.
FT	TRANSMEM	244	270	
FT	DOMAIN	271	280	CYTOPLASMIC.
FT	TRANSMEM	281	301	
FT	DOMAIN	302	351	NON CYTOPLASMIC.
FT	TRANSMEM	352	374	
FT	DOMAIN	375	384	CYTOPLASMIC.
//				
ID	TcasGr25 (AM292346)			
FT	SIGNAL	1	18	
FT	DOMAIN	1	5	N-REGION.
FT	DOMAIN	6	13	H-REGION.
FT	DOMAIN	14	18	C-REGION.
FT	DOMAIN	19	44	NON CYTOPLASMIC.
FT	TRANSMEM	45	63	
FT	DOMAIN	64	70	CYTOPLASMIC.
FT	TRANSMEM	71	90	
FT	DOMAIN	91	100	NON CYTOPLASMIC.

FT	TRANSMEM	101	120	
FT	DOMAIN	121	137	CYTOPLASMIC.
FT	TRANSMEM	138	157	
FT	DOMAIN	158	173	NON CYTOPLASMIC.
FT	TRANSMEM	174	197	
FT	DOMAIN	198	211	CYTOPLASMIC.
FT	TRANSMEM	212	230	
FT	DOMAIN	231	233	NON CYTOPLASMIC.
FT	TRANSMEM	234	252	
FT	DOMAIN	253	314	CYTOPLASMIC.
//				
ID	TcasGr26 (AM292347)			
FT	DOMAIN	1	127	NON CYTOPLASMIC.
FT	TRANSMEM	128	151	
FT	DOMAIN	152	161	CYTOPLASMIC.
FT	TRANSMEM	162	186	
FT	DOMAIN	187	212	NON CYTOPLASMIC.
FT	TRANSMEM	213	232	
FT	DOMAIN	233	247	CYTOPLASMIC.
FT	TRANSMEM	248	267	
FT	DOMAIN	268	282	NON CYTOPLASMIC.
FT	TRANSMEM	283	304	
FT	DOMAIN	305	336	CYTOPLASMIC.
FT	TRANSMEM	337	356	
FT	DOMAIN	357	358	NON CYTOPLASMIC.
FT	TRANSMEM	359	378	
FT	DOMAIN	379	387	CYTOPLASMIC.
//				
ID	TcasGr27 (AM292348)			
FT	DOMAIN	1	6	NON CYTOPLASMIC.
FT	TRANSMEM	7	25	
FT	DOMAIN	26	34	CYTOPLASMIC.
FT	TRANSMEM	35	56	
FT	DOMAIN	57	77	NON CYTOPLASMIC.
FT	TRANSMEM	78	99	
FT	DOMAIN	100	120	CYTOPLASMIC.
FT	TRANSMEM	121	142	
FT	DOMAIN	143	168	NON CYTOPLASMIC.
FT	TRANSMEM	169	194	
FT	DOMAIN	195	250	CYTOPLASMIC.
FT	TRANSMEM	251	273	
FT	DOMAIN	274	296	NON CYTOPLASMIC.
FT	TRANSMEM	297	318	
FT	DOMAIN	319	346	CYTOPLASMIC.
//				
ID	TcasGr28 (AM292349)			
FT	DOMAIN	1	28	NON CYTOPLASMIC.
FT	TRANSMEM	29	49	
FT	DOMAIN	50	60	CYTOPLASMIC.
FT	TRANSMEM	61	81	
FT	DOMAIN	82	92	NON CYTOPLASMIC.
FT	TRANSMEM	93	112	
FT	DOMAIN	113	123	CYTOPLASMIC.

FT	TRANSMEM	124	143	
FT	DOMAIN	144	165	NON CYTOPLASMIC.
FT	TRANSMEM	166	186	
FT	DOMAIN	187	196	CYTOPLASMIC.
FT	TRANSMEM	197	217	
FT	DOMAIN	218	220	NON CYTOPLASMIC.
FT	TRANSMEM	221	239	
FT	DOMAIN	240	248	CYTOPLASMIC.
//				
ID	TcasGr29 (AM292350)			
FT	DOMAIN	1	73	NON CYTOPLASMIC.
FT	TRANSMEM	74	95	
FT	DOMAIN	96	105	CYTOPLASMIC.
FT	TRANSMEM	106	125	
FT	DOMAIN	126	150	NON CYTOPLASMIC.
FT	TRANSMEM	151	172	
FT	DOMAIN	173	191	CYTOPLASMIC.
FT	TRANSMEM	192	212	
FT	DOMAIN	213	225	NON CYTOPLASMIC.
FT	TRANSMEM	226	246	
FT	DOMAIN	247	288	CYTOPLASMIC.
FT	TRANSMEM	289	310	
FT	DOMAIN	311	319	NON CYTOPLASMIC.
FT	TRANSMEM	320	340	
FT	DOMAIN	341	429	CYTOPLASMIC.
//				
ID	TcasGr30 (AM292351)			
FT	DOMAIN	1	73	NON CYTOPLASMIC.
FT	TRANSMEM	74	95	
FT	DOMAIN	96	105	CYTOPLASMIC.
FT	TRANSMEM	106	125	
FT	DOMAIN	126	150	NON CYTOPLASMIC.
FT	TRANSMEM	151	172	
FT	DOMAIN	173	191	CYTOPLASMIC.
FT	TRANSMEM	192	212	
FT	DOMAIN	213	225	NON CYTOPLASMIC.
FT	TRANSMEM	226	246	
FT	DOMAIN	247	288	CYTOPLASMIC.
FT	TRANSMEM	289	310	
FT	DOMAIN	311	319	NON CYTOPLASMIC.
FT	TRANSMEM	320	341	
FT	DOMAIN	342	394	CYTOPLASMIC.
//				
ID	TcasGr31 (AM292352)			
FT	DOMAIN	1	13	NON CYTOPLASMIC.
FT	TRANSMEM	14	32	
FT	DOMAIN	33	37	CYTOPLASMIC.
FT	TRANSMEM	38	56	
FT	DOMAIN	57	66	NON CYTOPLASMIC.
FT	TRANSMEM	67	86	
FT	DOMAIN	87	99	CYTOPLASMIC.
FT	TRANSMEM	100	120	
FT	DOMAIN	121	153	NON CYTOPLASMIC.

FT	TRANSMEM	154	179	
FT	DOMAIN	180	190	CYTOPLASMIC.
FT	TRANSMEM	191	211	
FT	DOMAIN	212	224	NON CYTOPLASMIC.
FT	TRANSMEM	225	247	
FT	DOMAIN	248	250	CYTOPLASMIC.
//				
ID	TcasGr 32 (AM292353)			
FT	DOMAIN	1	151	NON CYTOPLASMIC.
FT	TRANSMEM	152	174	
FT	DOMAIN	175	188	CYTOPLASMIC.
FT	TRANSMEM	189	209	
FT	DOMAIN	210	223	NON CYTOPLASMIC.
FT	TRANSMEM	224	243	
FT	DOMAIN	244	257	CYTOPLASMIC.
FT	TRANSMEM	258	278	
FT	DOMAIN	279	323	NON CYTOPLASMIC.
FT	TRANSMEM	324	347	
FT	DOMAIN	348	375	CYTOPLASMIC.
FT	TRANSMEM	376	398	
FT	DOMAIN	399	422	NON CYTOPLASMIC.
FT	TRANSMEM	423	445	
FT	DOMAIN	446	651	CYTOPLASMIC.
//				
ID	TcasGr 33 (AM292368)			
FT	DOMAIN	1	127	NON CYTOPLASMIC.
FT	TRANSMEM	128	151	
FT	DOMAIN	152	161	CYTOPLASMIC.
FT	TRANSMEM	162	186	
FT	DOMAIN	187	212	NON CYTOPLASMIC.
FT	TRANSMEM	213	232	
FT	DOMAIN	233	247	CYTOPLASMIC.
FT	TRANSMEM	248	267	
FT	DOMAIN	268	282	NON CYTOPLASMIC.
FT	TRANSMEM	283	304	
FT	DOMAIN	305	336	CYTOPLASMIC.
FT	TRANSMEM	337	356	
FT	DOMAIN	357	358	NON CYTOPLASMIC.
FT	TRANSMEM	359	378	
FT	DOMAIN	379	387	CYTOPLASMIC.
//				
ID	TcasGr 34 (AM292355)			
FT	DOMAIN	1	24	NON CYTOPLASMIC.
FT	TRANSMEM	25	43	
FT	DOMAIN	44	52	CYTOPLASMIC.
FT	TRANSMEM	53	76	
FT	DOMAIN	77	92	NON CYTOPLASMIC.
FT	TRANSMEM	93	113	
FT	DOMAIN	114	128	CYTOPLASMIC.
FT	TRANSMEM	129	150	
FT	DOMAIN	151	195	NON CYTOPLASMIC.
FT	TRANSMEM	196	218	

FT	DOMAIN	219	235	CYTOPLASMIC.
FT	TRANSMEM	236	256	
FT	DOMAIN	257	295	NON CYTOPLASMIC.
FT	TRANSMEM	296	318	
FT	DOMAIN	319	324	CYTOPLASMIC.
//				
ID	TcasGr35 (AM292356)			
FT	DOMAIN	1	4	NON CYTOPLASMIC.
FT	TRANSMEM	5	26	
FT	DOMAIN	27	39	CYTOPLASMIC.
FT	TRANSMEM	40	62	
FT	DOMAIN	63	73	NON CYTOPLASMIC.
FT	TRANSMEM	74	93	
FT	DOMAIN	94	114	CYTOPLASMIC.
FT	TRANSMEM	115	135	
FT	DOMAIN	136	149	NON CYTOPLASMIC.
FT	TRANSMEM	150	172	
FT	DOMAIN	173	203	CYTOPLASMIC.
FT	TRANSMEM	204	224	
FT	DOMAIN	225	227	NON CYTOPLASMIC.
FT	TRANSMEM	228	248	
FT	DOMAIN	249	251	CYTOPLASMIC.
//				
ID	TcasGr36 (AM292357)			
FT	DOMAIN	1	43	NON CYTOPLASMIC.
FT	TRANSMEM	44	63	
FT	DOMAIN	64	70	CYTOPLASMIC.
FT	TRANSMEM	71	93	
FT	DOMAIN	94	131	NON CYTOPLASMIC.
FT	TRANSMEM	132	151	
FT	DOMAIN	152	166	CYTOPLASMIC.
FT	TRANSMEM	167	186	
FT	DOMAIN	187	212	NON CYTOPLASMIC.
FT	TRANSMEM	213	236	
FT	DOMAIN	237	253	CYTOPLASMIC.
FT	TRANSMEM	254	276	
FT	DOMAIN	277	328	NON CYTOPLASMIC.
FT	TRANSMEM	329	350	
FT	DOMAIN	351	355	CYTOPLASMIC.
//				
ID	TcasGr37 (AM292358)			
FT	DOMAIN	1	25	NON CYTOPLASMIC.
FT	TRANSMEM	26	47	
FT	DOMAIN	48	57	CYTOPLASMIC.
FT	TRANSMEM	58	80	
FT	DOMAIN	81	107	NON CYTOPLASMIC.
FT	TRANSMEM	108	129	
FT	DOMAIN	130	143	CYTOPLASMIC.
FT	TRANSMEM	144	164	
FT	DOMAIN	165	194	NON CYTOPLASMIC.
FT	TRANSMEM	195	218	
FT	DOMAIN	219	236	CYTOPLASMIC.
FT	TRANSMEM	237	260	

FT	DOMAIN	261	283	NON CYTOPLASMIC.
FT	TRANSMEM	284	303	
FT	DOMAIN	304	331	CYTOPLASMIC.
//				
ID	TcasGr38 (AM292324)			
FT	DOMAIN	1	58	NON CYTOPLASMIC.
FT	TRANSMEM	59	81	
FT	DOMAIN	82	95	CYTOPLASMIC.
FT	TRANSMEM	96	118	
FT	DOMAIN	119	149	NON CYTOPLASMIC.
FT	TRANSMEM	150	170	
FT	DOMAIN	171	185	CYTOPLASMIC.
FT	TRANSMEM	186	206	
FT	DOMAIN	207	257	NON CYTOPLASMIC.
FT	TRANSMEM	258	282	
FT	DOMAIN	283	294	CYTOPLASMIC.
FT	TRANSMEM	295	315	
FT	DOMAIN	316	369	NON CYTOPLASMIC.
FT	TRANSMEM	370	390	
FT	DOMAIN	391	398	CYTOPLASMIC.
//				
ID	TcasGr39 (AM292360)			
FT	DOMAIN	1	85	NON CYTOPLASMIC.
FT	TRANSMEM	86	110	
FT	DOMAIN	111	120	CYTOPLASMIC.
FT	TRANSMEM	121	141	
FT	DOMAIN	142	167	NON CYTOPLASMIC.
FT	TRANSMEM	168	190	
FT	DOMAIN	191	208	CYTOPLASMIC.
FT	TRANSMEM	209	228	
FT	DOMAIN	229	269	NON CYTOPLASMIC.
FT	TRANSMEM	270	294	
FT	DOMAIN	295	306	CYTOPLASMIC.
FT	TRANSMEM	307	329	
FT	DOMAIN	330	385	NON CYTOPLASMIC.
FT	TRANSMEM	386	406	
FT	DOMAIN	407	426	CYTOPLASMIC.
//				
ID	TcasGr40 (AM292361)			
FT	DOMAIN	1	61	NON CYTOPLASMIC.
FT	TRANSMEM	62	84	
FT	DOMAIN	85	96	CYTOPLASMIC.
FT	TRANSMEM	97	120	
FT	DOMAIN	121	148	NON CYTOPLASMIC.
FT	TRANSMEM	149	170	
FT	DOMAIN	171	188	CYTOPLASMIC.
FT	TRANSMEM	189	210	
FT	DOMAIN	211	258	NON CYTOPLASMIC.
FT	TRANSMEM	259	282	
FT	DOMAIN	283	307	CYTOPLASMIC.
FT	TRANSMEM	308	331	
FT	DOMAIN	332	349	NON CYTOPLASMIC.
FT	TRANSMEM	350	372	

FT	DOMAIN	373	373	CYTOPLASMIC.
//				
ID	TcasGr41 (AM292362)			
FT	DOMAIN	1	39	NON CYTOPLASMIC.
FT	TRANSMEM	40	61	
FT	DOMAIN	62	72	CYTOPLASMIC.
FT	TRANSMEM	73	95	
FT	DOMAIN	96	125	NON CYTOPLASMIC.
FT	TRANSMEM	126	148	
FT	DOMAIN	149	166	CYTOPLASMIC.
FT	TRANSMEM	167	187	
FT	DOMAIN	188	230	NON CYTOPLASMIC.
FT	TRANSMEM	231	255	
FT	DOMAIN	256	269	CYTOPLASMIC.
FT	TRANSMEM	270	293	
FT	DOMAIN	294	314	NON CYTOPLASMIC.
FT	TRANSMEM	315	335	
FT	DOMAIN	336	398	CYTOPLASMIC.
//				
ID	TcasGr71 (AM292363)			
FT	DOMAIN	1	29	NON CYTOPLASMIC.
FT	TRANSMEM	30	50	
FT	DOMAIN	51	63	CYTOPLASMIC.
FT	TRANSMEM	64	86	
FT	DOMAIN	87	111	NON CYTOPLASMIC.
FT	TRANSMEM	112	135	
FT	DOMAIN	136	149	CYTOPLASMIC.
FT	TRANSMEM	150	169	
FT	DOMAIN	170	204	NON CYTOPLASMIC.
FT	TRANSMEM	205	231	
FT	DOMAIN	232	246	CYTOPLASMIC.
FT	TRANSMEM	247	269	
FT	DOMAIN	270	320	NON CYTOPLASMIC.
FT	TRANSMEM	321	341	
FT	DOMAIN	342	347	CYTOPLASMIC.
//				
ID	TcasGr43 (AM292364)			
FT	DOMAIN	1	33	NON CYTOPLASMIC.
FT	TRANSMEM	34	52	
FT	DOMAIN	53	60	CYTOPLASMIC.
FT	TRANSMEM	61	85	
FT	DOMAIN	86	119	NON CYTOPLASMIC.
FT	TRANSMEM	120	141	
FT	DOMAIN	142	158	CYTOPLASMIC.
FT	TRANSMEM	159	178	
FT	DOMAIN	179	210	NON CYTOPLASMIC.
FT	TRANSMEM	211	234	
FT	DOMAIN	235	253	CYTOPLASMIC.
FT	TRANSMEM	254	273	
FT	DOMAIN	274	325	NON CYTOPLASMIC.
FT	TRANSMEM	326	347	
FT	DOMAIN	348	353	CYTOPLASMIC.
//				

ID	TcasGr44 (AM292365)			
FT	DOMAIN	1	36	NON CYTOPLASMIC.
FT	TRANSMEM	37	55	
FT	DOMAIN	56	68	CYTOPLASMIC.
FT	TRANSMEM	69	92	
FT	DOMAIN	93	123	NON CYTOPLASMIC.
FT	TRANSMEM	124	146	
FT	DOMAIN	147	159	CYTOPLASMIC.
FT	TRANSMEM	160	180	
FT	DOMAIN	181	196	NON CYTOPLASMIC.
FT	TRANSMEM	197	217	
FT	DOMAIN	218	230	CYTOPLASMIC.
FT	TRANSMEM	231	252	
FT	DOMAIN	253	262	NON CYTOPLASMIC.
FT	TRANSMEM	263	285	
FT	DOMAIN	286	313	CYTOPLASMIC.
//				
ID	TcasGr45 (AM292366)			
FT	DOMAIN	1	44	NON CYTOPLASMIC.
FT	TRANSMEM	45	64	
FT	DOMAIN	65	74	CYTOPLASMIC.
FT	TRANSMEM	75	97	
FT	DOMAIN	98	138	NON CYTOPLASMIC.
FT	TRANSMEM	139	160	
FT	DOMAIN	161	173	CYTOPLASMIC.
FT	TRANSMEM	174	193	
FT	DOMAIN	194	231	NON CYTOPLASMIC.
FT	TRANSMEM	232	258	
FT	DOMAIN	259	280	CYTOPLASMIC.
FT	TRANSMEM	281	304	
FT	DOMAIN	305	348	NON CYTOPLASMIC.
FT	TRANSMEM	349	370	
FT	DOMAIN	371	379	CYTOPLASMIC.
//				
ID	TcasGr46 (AM292367)			
FT	DOMAIN	1	1155	NON CYTOPLASMIC.
FT	TRANSMEM	1156	1175	
FT	DOMAIN	1176	1182	CYTOPLASMIC.
FT	TRANSMEM	1183	1201	
FT	DOMAIN	1202	1221	NON CYTOPLASMIC.
FT	TRANSMEM	1222	1245	
FT	DOMAIN	1246	1266	CYTOPLASMIC.
FT	TRANSMEM	1267	1287	
FT	DOMAIN	1288	1319	NON CYTOPLASMIC.
FT	TRANSMEM	1320	1345	
FT	DOMAIN	1346	1358	CYTOPLASMIC.
FT	TRANSMEM	1359	1383	
FT	DOMAIN	1384	1419	NON CYTOPLASMIC.
FT	TRANSMEM	1420	1442	
FT	DOMAIN	1443	1451	CYTOPLASMIC.
//				
ID	TcasGr47 (AM292354)			
FT	DOMAIN	1	19	NON CYTOPLASMIC.

FT	TRANSMEM	20	37	
FT	DOMAIN	38	51	CYTOPLASMIC.
FT	TRANSMEM	52	71	
FT	DOMAIN	72	98	NON CYTOPLASMIC.
FT	TRANSMEM	99	121	
FT	DOMAIN	122	136	CYTOPLASMIC.
FT	TRANSMEM	137	158	
FT	DOMAIN	159	186	NON CYTOPLASMIC.
FT	TRANSMEM	187	207	
FT	DOMAIN	208	227	CYTOPLASMIC.
FT	TRANSMEM	228	251	
FT	DOMAIN	252	278	NON CYTOPLASMIC.
FT	TRANSMEM	279	298	
FT	DOMAIN	299	321	CYTOPLASMIC.

//

ID TcasGr48 (AM292369)

FT	DOMAIN	1	55	NON CYTOPLASMIC.
FT	TRANSMEM	56	76	
FT	DOMAIN	77	87	CYTOPLASMIC.
FT	TRANSMEM	88	110	
FT	DOMAIN	111	137	NON CYTOPLASMIC.
FT	TRANSMEM	138	158	
FT	DOMAIN	159	174	CYTOPLASMIC.
FT	TRANSMEM	175	194	
FT	DOMAIN	195	267	NON CYTOPLASMIC.
FT	TRANSMEM	268	291	
FT	DOMAIN	292	332	CYTOPLASMIC.
FT	TRANSMEM	333	351	
FT	DOMAIN	352	363	NON CYTOPLASMIC.
FT	TRANSMEM	364	386	
FT	DOMAIN	387	408	CYTOPLASMIC.

//

ID TcasGr49 (AM292370)

FT	DOMAIN	1	55	NON CYTOPLASMIC.
FT	TRANSMEM	56	76	
FT	DOMAIN	77	86	CYTOPLASMIC.
FT	TRANSMEM	87	105	
FT	DOMAIN	106	115	NON CYTOPLASMIC.
FT	TRANSMEM	116	135	
FT	DOMAIN	136	157	CYTOPLASMIC.
FT	TRANSMEM	158	179	
FT	DOMAIN	180	267	NON CYTOPLASMIC.
FT	TRANSMEM	268	294	
FT	DOMAIN	295	311	CYTOPLASMIC.
FT	TRANSMEM	312	338	
FT	DOMAIN	339	378	NON CYTOPLASMIC.
FT	TRANSMEM	379	400	
FT	DOMAIN	401	418	CYTOPLASMIC.

//

ID TcasGr50 (AM292371)

FT	DOMAIN	1	34	NON CYTOPLASMIC.
FT	TRANSMEM	35	55	
FT	DOMAIN	56	65	CYTOPLASMIC.

FT	TRANSMEM	66	87	
FT	DOMAIN	88	116	NON CYTOPLASMIC.
FT	TRANSMEM	117	137	
FT	DOMAIN	138	153	CYTOPLASMIC.
FT	TRANSMEM	154	175	
FT	DOMAIN	176	230	NON CYTOPLASMIC.
FT	TRANSMEM	231	255	
FT	DOMAIN	256	266	CYTOPLASMIC.
FT	TRANSMEM	267	287	
FT	DOMAIN	288	313	NON CYTOPLASMIC.
FT	TRANSMEM	314	332	
FT	DOMAIN	333	350	CYTOPLASMIC.
//				
ID	TcasGr51 (AM292372)			
FT	DOMAIN	1	369	NON CYTOPLASMIC.
FT	TRANSMEM	370	391	
FT	DOMAIN	392	403	CYTOPLASMIC.
FT	TRANSMEM	404	423	
FT	DOMAIN	424	437	NON CYTOPLASMIC.
FT	TRANSMEM	438	459	
FT	DOMAIN	460	474	CYTOPLASMIC.
FT	TRANSMEM	475	496	
FT	DOMAIN	497	530	NON CYTOPLASMIC.
FT	TRANSMEM	531	555	
FT	DOMAIN	556	637	CYTOPLASMIC.
FT	TRANSMEM	638	659	
FT	DOMAIN	660	665	NON CYTOPLASMIC.
FT	TRANSMEM	666	690	
FT	DOMAIN	691	771	CYTOPLASMIC.
//				
ID	TcasGr52 (AM292375)			
FT	DOMAIN	1	12	NON CYTOPLASMIC.
FT	TRANSMEM	13	32	
FT	DOMAIN	33	38	CYTOPLASMIC.
FT	TRANSMEM	39	57	
FT	DOMAIN	58	73	NON CYTOPLASMIC.
FT	TRANSMEM	74	93	
FT	DOMAIN	94	112	CYTOPLASMIC.
FT	TRANSMEM	113	132	
FT	DOMAIN	133	166	NON CYTOPLASMIC.
FT	TRANSMEM	167	187	
FT	DOMAIN	188	208	CYTOPLASMIC.
FT	TRANSMEM	209	230	
FT	DOMAIN	231	282	NON CYTOPLASMIC.
FT	TRANSMEM	283	304	
FT	DOMAIN	305	311	CYTOPLASMIC.
//				
ID	TcasGr53 (AM292383)			
FT	DOMAIN	1	25	NON CYTOPLASMIC.
FT	TRANSMEM	26	47	
FT	DOMAIN	48	57	CYTOPLASMIC.
FT	TRANSMEM	58	80	
FT	DOMAIN	81	107	NON CYTOPLASMIC.

FT	TRANSMEM	108	129	
FT	DOMAIN	130	143	CYTOPLASMIC.
FT	TRANSMEM	144	164	
FT	DOMAIN	165	194	NON CYTOPLASMIC.
FT	TRANSMEM	195	218	
FT	DOMAIN	219	236	CYTOPLASMIC.
FT	TRANSMEM	237	260	
FT	DOMAIN	261	283	NON CYTOPLASMIC.
FT	TRANSMEM	284	303	
FT	DOMAIN	304	319	CYTOPLASMIC.
//				
ID	TcasGr54 (AM292373)			
FT	DOMAIN	1	32	NON CYTOPLASMIC.
FT	TRANSMEM	33	52	
FT	DOMAIN	53	59	CYTOPLASMIC.
FT	TRANSMEM	60	80	
FT	DOMAIN	81	114	NON CYTOPLASMIC.
FT	TRANSMEM	115	137	
FT	DOMAIN	138	154	CYTOPLASMIC.
FT	TRANSMEM	155	174	
FT	DOMAIN	175	217	NON CYTOPLASMIC.
FT	TRANSMEM	218	244	
FT	DOMAIN	245	254	CYTOPLASMIC.
FT	TRANSMEM	255	278	
FT	DOMAIN	279	324	NON CYTOPLASMIC.
FT	TRANSMEM	325	347	
FT	DOMAIN	348	360	CYTOPLASMIC.
//				
ID	TcasGr125 (AM292376)			
FT	DOMAIN	1	56	NON CYTOPLASMIC.
FT	TRANSMEM	57	77	
FT	DOMAIN	78	89	CYTOPLASMIC.
FT	TRANSMEM	90	112	
FT	DOMAIN	113	140	NON CYTOPLASMIC.
FT	TRANSMEM	141	161	
FT	DOMAIN	162	175	CYTOPLASMIC.
FT	TRANSMEM	176	197	
FT	DOMAIN	198	240	NON CYTOPLASMIC.
FT	TRANSMEM	241	264	
FT	DOMAIN	265	276	CYTOPLASMIC.
FT	TRANSMEM	277	297	
FT	DOMAIN	298	358	NON CYTOPLASMIC.
FT	TRANSMEM	359	381	
FT	DOMAIN	382	402	CYTOPLASMIC.
//				
ID	TcasGr56 (AM292377)			
FT	DOMAIN	1	48	NON CYTOPLASMIC.
FT	TRANSMEM	49	74	
FT	DOMAIN	75	89	CYTOPLASMIC.
FT	TRANSMEM	90	115	
FT	DOMAIN	116	143	NON CYTOPLASMIC.
FT	TRANSMEM	144	164	
FT	DOMAIN	165	176	CYTOPLASMIC.

FT	TRANSMEM	177	196	
FT	DOMAIN	197	250	NON CYTOPLASMIC.
FT	TRANSMEM	251	272	
FT	DOMAIN	273	286	CYTOPLASMIC.
FT	TRANSMEM	287	308	
FT	DOMAIN	309	325	NON CYTOPLASMIC.
FT	TRANSMEM	326	345	
FT	DOMAIN	346	358	CYTOPLASMIC.

//

ID TcasGr57 (AM292378)

FT	DOMAIN	1	27	NON CYTOPLASMIC.
FT	TRANSMEM	28	51	
FT	DOMAIN	52	64	CYTOPLASMIC.
FT	TRANSMEM	65	89	
FT	DOMAIN	90	112	NON CYTOPLASMIC.
FT	TRANSMEM	113	134	
FT	DOMAIN	135	151	CYTOPLASMIC.
FT	TRANSMEM	152	171	
FT	DOMAIN	172	240	NON CYTOPLASMIC.
FT	TRANSMEM	241	265	
FT	DOMAIN	266	281	CYTOPLASMIC.
FT	TRANSMEM	282	302	
FT	DOMAIN	303	359	NON CYTOPLASMIC.
FT	TRANSMEM	360	382	
FT	DOMAIN	383	387	CYTOPLASMIC.

//

ID TcasGr98 (AM292379)

FT	DOMAIN	1	43	NON CYTOPLASMIC.
FT	TRANSMEM	44	63	
FT	DOMAIN	64	74	CYTOPLASMIC.
FT	TRANSMEM	75	97	
FT	DOMAIN	98	132	NON CYTOPLASMIC.
FT	TRANSMEM	133	154	
FT	DOMAIN	155	171	CYTOPLASMIC.
FT	TRANSMEM	172	191	
FT	DOMAIN	192	228	NON CYTOPLASMIC.
FT	TRANSMEM	229	253	
FT	DOMAIN	254	274	CYTOPLASMIC.
FT	TRANSMEM	275	295	
FT	DOMAIN	296	345	NON CYTOPLASMIC.
FT	TRANSMEM	346	367	
FT	DOMAIN	368	376	CYTOPLASMIC.

//

ID TcasGr59 (AM292380)

FT	DOMAIN	1	42	NON CYTOPLASMIC.
FT	TRANSMEM	43	61	
FT	DOMAIN	62	72	CYTOPLASMIC.
FT	TRANSMEM	73	96	
FT	DOMAIN	97	129	NON CYTOPLASMIC.
FT	TRANSMEM	130	152	
FT	DOMAIN	153	168	CYTOPLASMIC.
FT	TRANSMEM	169	191	
FT	DOMAIN	192	239	NON CYTOPLASMIC.

FT	TRANSMEM	240	266	
FT	DOMAIN	267	282	CYTOPLASMIC.
FT	TRANSMEM	283	305	
FT	DOMAIN	306	348	NON CYTOPLASMIC.
FT	TRANSMEM	349	371	
FT	DOMAIN	372	489	CYTOPLASMIC.
//				
ID	TcasGr60 (AM292381)			
FT	SIGNAL	1	16	
FT	DOMAIN	1	1	N-REGION.
FT	DOMAIN	2	11	H-REGION.
FT	DOMAIN	12	16	C-REGION.
FT	DOMAIN	17	102	NON CYTOPLASMIC.
FT	TRANSMEM	103	123	
FT	DOMAIN	124	136	CYTOPLASMIC.
FT	TRANSMEM	137	155	
FT	DOMAIN	156	182	NON CYTOPLASMIC.
FT	TRANSMEM	183	201	
FT	DOMAIN	202	216	CYTOPLASMIC.
FT	TRANSMEM	217	237	
FT	DOMAIN	238	250	NON CYTOPLASMIC.
FT	TRANSMEM	251	272	
FT	DOMAIN	273	294	CYTOPLASMIC.
FT	TRANSMEM	295	315	
FT	DOMAIN	316	325	NON CYTOPLASMIC.
FT	TRANSMEM	326	348	
FT	DOMAIN	349	364	CYTOPLASMIC.
//				
ID	TcasGr61 (AM292382)			
FT	SIGNAL	1	27	
FT	DOMAIN	1	9	N-REGION.
FT	DOMAIN	10	22	H-REGION.
FT	DOMAIN	23	27	C-REGION.
FT	DOMAIN	28	254	NON CYTOPLASMIC.
FT	TRANSMEM	255	277	
FT	DOMAIN	278	285	CYTOPLASMIC.
FT	TRANSMEM	286	305	
FT	DOMAIN	306	323	NON CYTOPLASMIC.
FT	TRANSMEM	324	345	
FT	DOMAIN	346	362	CYTOPLASMIC.
FT	TRANSMEM	363	384	
FT	DOMAIN	385	416	NON CYTOPLASMIC.
FT	TRANSMEM	417	440	
FT	DOMAIN	441	452	CYTOPLASMIC.
FT	TRANSMEM	453	479	
FT	DOMAIN	480	535	NON CYTOPLASMIC.
FT	TRANSMEM	536	558	
FT	DOMAIN	559	670	CYTOPLASMIC.
//				
ID	TcasGr62 (AM292374)			
FT	SIGNAL	1	25	
FT	DOMAIN	1	9	N-REGION.
FT	DOMAIN	10	20	H-REGION.

FT	DOMAIN	21	25	C-REGION.
FT	DOMAIN	26	231	NON CYTOPLASMIC.
FT	TRANSMEM	232	254	
FT	DOMAIN	255	263	CYTOPLASMIC.
FT	TRANSMEM	264	284	
FT	DOMAIN	285	314	NON CYTOPLASMIC.
FT	TRANSMEM	315	337	
FT	DOMAIN	338	353	CYTOPLASMIC.
FT	TRANSMEM	354	373	
FT	DOMAIN	374	409	NON CYTOPLASMIC.
FT	TRANSMEM	410	432	
FT	DOMAIN	433	524	CYTOPLASMIC.
FT	TRANSMEM	525	547	
FT	DOMAIN	548	555	NON CYTOPLASMIC.
FT	TRANSMEM	556	577	
FT	DOMAIN	578	659	CYTOPLASMIC.

//

ID TcasOr1 (AM689931)

FT	DOMAIN	1	64	NON CYTOPLASMIC.
FT	TRANSMEM	65	84	
FT	DOMAIN	85	96	CYTOPLASMIC.
FT	TRANSMEM	97	120	
FT	DOMAIN	121	131	NON CYTOPLASMIC.
FT	TRANSMEM	132	157	
FT	DOMAIN	158	177	CYTOPLASMIC.
FT	TRANSMEM	178	196	
FT	DOMAIN	197	212	NON CYTOPLASMIC.
FT	TRANSMEM	213	239	
FT	DOMAIN	240	288	CYTOPLASMIC.
FT	TRANSMEM	289	313	
FT	DOMAIN	314	319	NON CYTOPLASMIC.
FT	TRANSMEM	320	341	
FT	DOMAIN	342	353	CYTOPLASMIC.

//

ID TcasOr2 (AM689904)

FT	DOMAIN	1	20	NON CYTOPLASMIC.
FT	TRANSMEM	21	41	
FT	DOMAIN	42	49	CYTOPLASMIC.
FT	TRANSMEM	50	69	
FT	DOMAIN	70	100	NON CYTOPLASMIC.
FT	TRANSMEM	101	121	
FT	DOMAIN	122	139	CYTOPLASMIC.
FT	TRANSMEM	140	160	
FT	DOMAIN	161	184	NON CYTOPLASMIC.
FT	TRANSMEM	185	207	
FT	DOMAIN	208	249	CYTOPLASMIC.
FT	TRANSMEM	250	272	
FT	DOMAIN	273	282	NON CYTOPLASMIC.
FT	TRANSMEM	283	307	
FT	DOMAIN	308	314	CYTOPLASMIC.

//

ID TcasOr3 (AM689905)

FT	DOMAIN	1	8	NON CYTOPLASMIC.
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FT	TRANSMEM	9	29	
FT	DOMAIN	30	41	CYTOPLASMIC.
FT	TRANSMEM	42	62	
FT	DOMAIN	63	95	NON CYTOPLASMIC.
FT	TRANSMEM	96	117	
FT	DOMAIN	118	139	CYTOPLASMIC.
FT	TRANSMEM	140	163	
FT	DOMAIN	164	199	NON CYTOPLASMIC.
FT	TRANSMEM	200	225	
FT	DOMAIN	226	285	CYTOPLASMIC.
FT	TRANSMEM	286	307	
FT	DOMAIN	308	315	NON CYTOPLASMIC.
FT	TRANSMEM	316	335	
FT	DOMAIN	336	413	CYTOPLASMIC.
//				
ID	TcasOr4 (AM689906)			
FT	DOMAIN	1	28	NON CYTOPLASMIC.
FT	TRANSMEM	29	50	
FT	DOMAIN	51	58	CYTOPLASMIC.
FT	TRANSMEM	59	78	
FT	DOMAIN	79	88	NON CYTOPLASMIC.
FT	TRANSMEM	89	109	
FT	DOMAIN	110	125	CYTOPLASMIC.
FT	TRANSMEM	126	144	
FT	DOMAIN	145	169	NON CYTOPLASMIC.
FT	TRANSMEM	170	197	
FT	DOMAIN	198	259	CYTOPLASMIC.
FT	TRANSMEM	260	281	
FT	DOMAIN	282	307	NON CYTOPLASMIC.
FT	TRANSMEM	308	332	
FT	DOMAIN	333	378	CYTOPLASMIC.
//				
ID	TcasOr5 (AM689907)			
FT	DOMAIN	1	10	NON CYTOPLASMIC.
FT	TRANSMEM	11	30	
FT	DOMAIN	31	44	CYTOPLASMIC.
FT	TRANSMEM	45	64	
FT	DOMAIN	65	76	NON CYTOPLASMIC.
FT	TRANSMEM	77	99	
FT	DOMAIN	100	123	CYTOPLASMIC.
FT	TRANSMEM	124	146	
FT	DOMAIN	147	164	NON CYTOPLASMIC.
FT	TRANSMEM	165	188	
FT	DOMAIN	189	228	CYTOPLASMIC.
FT	TRANSMEM	229	250	
FT	DOMAIN	251	265	NON CYTOPLASMIC.
FT	TRANSMEM	266	285	
FT	DOMAIN	286	299	CYTOPLASMIC.
//				
ID	TcasOr6 (AM689908)			
FT	SIGNAL	1	32	
FT	DOMAIN	1	14	N-REGION.
FT	DOMAIN	15	27	H-REGION.

FT	DOMAIN	28	32	C-REGION.
FT	DOMAIN	33	100	NON CYTOPLASMIC.
FT	TRANSMEM	101	122	
FT	DOMAIN	123	140	CYTOPLASMIC.
FT	TRANSMEM	141	165	
FT	DOMAIN	166	181	NON CYTOPLASMIC.
FT	TRANSMEM	182	202	
FT	DOMAIN	203	221	CYTOPLASMIC.
FT	TRANSMEM	222	243	
FT	DOMAIN	244	270	NON CYTOPLASMIC.
FT	TRANSMEM	271	293	
FT	DOMAIN	294	362	CYTOPLASMIC.
FT	TRANSMEM	363	384	
FT	DOMAIN	385	409	NON CYTOPLASMIC.
FT	TRANSMEM	410	433	
FT	DOMAIN	434	475	CYTOPLASMIC.

//

ID TcasOr7 (AM689909)

FT	DOMAIN	1	7	NON CYTOPLASMIC.
FT	TRANSMEM	8	27	
FT	DOMAIN	28	40	CYTOPLASMIC.
FT	TRANSMEM	41	60	
FT	DOMAIN	61	79	NON CYTOPLASMIC.
FT	TRANSMEM	80	104	
FT	DOMAIN	105	125	CYTOPLASMIC.
FT	TRANSMEM	126	149	
FT	DOMAIN	150	175	NON CYTOPLASMIC.
FT	TRANSMEM	176	200	
FT	DOMAIN	201	223	CYTOPLASMIC.
FT	TRANSMEM	224	251	
FT	DOMAIN	252	288	NON CYTOPLASMIC.
FT	TRANSMEM	289	310	
FT	DOMAIN	311	311	CYTOPLASMIC.

//

ID TcasOr63 (AM689910)

FT	DOMAIN	1	35	NON CYTOPLASMIC.
FT	TRANSMEM	36	62	
FT	DOMAIN	63	73	CYTOPLASMIC.
FT	TRANSMEM	74	94	
FT	DOMAIN	95	132	NON CYTOPLASMIC.
FT	TRANSMEM	133	154	
FT	DOMAIN	155	171	CYTOPLASMIC.
FT	TRANSMEM	172	193	
FT	DOMAIN	194	249	NON CYTOPLASMIC.
FT	TRANSMEM	250	273	
FT	DOMAIN	274	284	CYTOPLASMIC.
FT	TRANSMEM	285	305	
FT	DOMAIN	306	307	NON CYTOPLASMIC.
FT	TRANSMEM	308	329	
FT	DOMAIN	330	383	CYTOPLASMIC.

//

ID TcasOr9 (AM689911)

FT	DOMAIN	1	55	NON CYTOPLASMIC.
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FT	TRANSMEM	56	75	
FT	DOMAIN	76	81	CYTOPLASMIC.
FT	TRANSMEM	82	101	
FT	DOMAIN	102	121	NON CYTOPLASMIC.
FT	TRANSMEM	122	143	
FT	DOMAIN	144	160	CYTOPLASMIC.
FT	TRANSMEM	161	182	
FT	DOMAIN	183	196	NON CYTOPLASMIC.
FT	TRANSMEM	197	219	
FT	DOMAIN	220	229	CYTOPLASMIC.
FT	TRANSMEM	230	252	
FT	DOMAIN	253	259	NON CYTOPLASMIC.
FT	TRANSMEM	260	280	
FT	DOMAIN	281	294	CYTOPLASMIC.
//				
ID	TcasOr10 (AM689912)			
FT	DOMAIN	1	44	NON CYTOPLASMIC.
FT	TRANSMEM	45	67	
FT	DOMAIN	68	86	CYTOPLASMIC.
FT	TRANSMEM	87	106	
FT	DOMAIN	107	121	NON CYTOPLASMIC.
FT	TRANSMEM	122	142	
FT	DOMAIN	143	160	CYTOPLASMIC.
FT	TRANSMEM	161	183	
FT	DOMAIN	184	199	NON CYTOPLASMIC.
FT	TRANSMEM	200	223	
FT	DOMAIN	224	262	CYTOPLASMIC.
FT	TRANSMEM	263	287	
FT	DOMAIN	288	302	NON CYTOPLASMIC.
FT	TRANSMEM	303	324	
FT	DOMAIN	325	330	CYTOPLASMIC.
//				
ID	TcasOr11 (AM689913)			
FT	DOMAIN	1	31	NON CYTOPLASMIC.
FT	TRANSMEM	32	53	
FT	DOMAIN	54	65	CYTOPLASMIC.
FT	TRANSMEM	66	88	
FT	DOMAIN	89	113	NON CYTOPLASMIC.
FT	TRANSMEM	114	136	
FT	DOMAIN	137	159	CYTOPLASMIC.
FT	TRANSMEM	160	180	
FT	DOMAIN	181	237	NON CYTOPLASMIC.
FT	TRANSMEM	238	261	
FT	DOMAIN	262	286	CYTOPLASMIC.
FT	TRANSMEM	287	305	
FT	DOMAIN	306	308	NON CYTOPLASMIC.
FT	TRANSMEM	309	329	
FT	DOMAIN	330	332	CYTOPLASMIC.
//				
ID	TcasOr12 (AM689914)			
FT	DOMAIN	1	8	NON CYTOPLASMIC.
FT	TRANSMEM	9	27	
FT	DOMAIN	28	38	CYTOPLASMIC.

FT	TRANSMEM	39	63	
FT	DOMAIN	64	89	NON CYTOPLASMIC.
FT	TRANSMEM	90	113	
FT	DOMAIN	114	131	CYTOPLASMIC.
FT	TRANSMEM	132	154	
FT	DOMAIN	155	188	NON CYTOPLASMIC.
FT	TRANSMEM	189	212	
FT	DOMAIN	213	263	CYTOPLASMIC.
FT	TRANSMEM	264	287	
FT	DOMAIN	288	293	NON CYTOPLASMIC.
FT	TRANSMEM	294	315	
FT	DOMAIN	316	374	CYTOPLASMIC.
//				
ID	TcasOr13 (AM689915)			
FT	DOMAIN	1	47	NON CYTOPLASMIC.
FT	TRANSMEM	48	68	
FT	DOMAIN	69	77	CYTOPLASMIC.
FT	TRANSMEM	78	101	
FT	DOMAIN	102	140	NON CYTOPLASMIC.
FT	TRANSMEM	141	162	
FT	DOMAIN	163	178	CYTOPLASMIC.
FT	TRANSMEM	179	200	
FT	DOMAIN	201	266	NON CYTOPLASMIC.
FT	TRANSMEM	267	290	
FT	DOMAIN	291	306	CYTOPLASMIC.
FT	TRANSMEM	307	326	
FT	DOMAIN	327	379	NON CYTOPLASMIC.
FT	TRANSMEM	380	401	
FT	DOMAIN	402	405	CYTOPLASMIC.
//				
ID	TcasOr56 (AM689916)			
FT	DOMAIN	1	38	NON CYTOPLASMIC.
FT	TRANSMEM	39	60	
FT	DOMAIN	61	71	CYTOPLASMIC.
FT	TRANSMEM	72	92	
FT	DOMAIN	93	134	NON CYTOPLASMIC.
FT	TRANSMEM	135	154	
FT	DOMAIN	155	169	CYTOPLASMIC.
FT	TRANSMEM	170	189	
FT	DOMAIN	190	213	NON CYTOPLASMIC.
FT	TRANSMEM	214	236	
FT	DOMAIN	237	306	CYTOPLASMIC.
FT	TRANSMEM	307	330	
FT	DOMAIN	331	336	NON CYTOPLASMIC.
FT	TRANSMEM	337	358	
FT	DOMAIN	359	433	CYTOPLASMIC.
//				
ID	TcasOr15 (AM689917)			
FT	DOMAIN	1	36	NON CYTOPLASMIC.
FT	TRANSMEM	37	62	
FT	DOMAIN	63	69	CYTOPLASMIC.
FT	TRANSMEM	70	89	
FT	DOMAIN	90	99	NON CYTOPLASMIC.

FT	TRANSMEM	100	123	
FT	DOMAIN	124	136	CYTOPLASMIC.
FT	TRANSMEM	137	156	
FT	DOMAIN	157	199	NON CYTOPLASMIC.
FT	TRANSMEM	200	227	
FT	DOMAIN	228	243	CYTOPLASMIC.
FT	TRANSMEM	244	266	
FT	DOMAIN	267	301	NON CYTOPLASMIC.
FT	TRANSMEM	302	325	
FT	DOMAIN	326	340	CYTOPLASMIC.
//				
ID	TcasOr16 (AM689918)			
FT	DOMAIN	1	203	NON CYTOPLASMIC.
FT	TRANSMEM	204	228	
FT	DOMAIN	229	241	CYTOPLASMIC.
FT	TRANSMEM	242	263	
FT	DOMAIN	264	298	NON CYTOPLASMIC.
FT	TRANSMEM	299	321	
FT	DOMAIN	322	336	CYTOPLASMIC.
FT	TRANSMEM	337	357	
FT	DOMAIN	358	379	NON CYTOPLASMIC.
FT	TRANSMEM	380	400	
FT	DOMAIN	401	426	CYTOPLASMIC.
FT	TRANSMEM	427	447	
FT	DOMAIN	448	449	NON CYTOPLASMIC.
FT	TRANSMEM	450	471	
FT	DOMAIN	472	475	CYTOPLASMIC.
//				
ID	TcasOr17 (AM689919)			
FT	DOMAIN	1	3	NON CYTOPLASMIC.
FT	TRANSMEM	4	22	
FT	DOMAIN	23	29	CYTOPLASMIC.
FT	TRANSMEM	30	47	
FT	DOMAIN	48	59	NON CYTOPLASMIC.
FT	TRANSMEM	60	80	
FT	DOMAIN	81	93	CYTOPLASMIC.
FT	TRANSMEM	94	112	
FT	DOMAIN	113	127	NON CYTOPLASMIC.
FT	TRANSMEM	128	149	
FT	DOMAIN	150	175	CYTOPLASMIC.
FT	TRANSMEM	176	195	
FT	DOMAIN	196	197	NON CYTOPLASMIC.
FT	TRANSMEM	198	217	
FT	DOMAIN	218	243	CYTOPLASMIC.
//				
ID	TcasOr18 (AM689920)			
FT	DOMAIN	1	32	NON CYTOPLASMIC.
FT	TRANSMEM	33	58	
FT	DOMAIN	59	66	CYTOPLASMIC.
FT	TRANSMEM	67	86	
FT	DOMAIN	87	115	NON CYTOPLASMIC.
FT	TRANSMEM	116	136	
FT	DOMAIN	137	157	CYTOPLASMIC.

FT	TRANSMEM	158	179	
FT	DOMAIN	180	238	NON CYTOPLASMIC.
FT	TRANSMEM	239	259	
FT	DOMAIN	260	282	CYTOPLASMIC.
FT	TRANSMEM	283	304	
FT	DOMAIN	305	324	NON CYTOPLASMIC.
FT	TRANSMEM	325	346	
FT	DOMAIN	347	410	CYTOPLASMIC.
//				
ID	TcasOr19 (AM689921)			
FT	DOMAIN	1	38	NON CYTOPLASMIC.
FT	TRANSMEM	39	57	
FT	DOMAIN	58	62	CYTOPLASMIC.
FT	TRANSMEM	63	81	
FT	DOMAIN	82	93	NON CYTOPLASMIC.
FT	TRANSMEM	94	114	
FT	DOMAIN	115	136	CYTOPLASMIC.
FT	TRANSMEM	137	159	
FT	DOMAIN	160	219	NON CYTOPLASMIC.
FT	TRANSMEM	220	242	
FT	DOMAIN	243	254	CYTOPLASMIC.
FT	TRANSMEM	255	276	
FT	DOMAIN	277	310	NON CYTOPLASMIC.
FT	TRANSMEM	311	330	
FT	DOMAIN	331	331	CYTOPLASMIC.
//				
ID	TcasOr20 (AM689922)			
FT	DOMAIN	1	58	NON CYTOPLASMIC.
FT	TRANSMEM	59	80	
FT	DOMAIN	81	90	CYTOPLASMIC.
FT	TRANSMEM	91	111	
FT	DOMAIN	112	151	NON CYTOPLASMIC.
FT	TRANSMEM	152	169	
FT	DOMAIN	170	186	CYTOPLASMIC.
FT	TRANSMEM	187	211	
FT	DOMAIN	212	256	NON CYTOPLASMIC.
FT	TRANSMEM	257	279	
FT	DOMAIN	280	290	CYTOPLASMIC.
FT	TRANSMEM	291	311	
FT	DOMAIN	312	360	NON CYTOPLASMIC.
FT	TRANSMEM	361	381	
FT	DOMAIN	382	386	CYTOPLASMIC.
//				
ID	TcasOr21 (AM689923)			
FT	DOMAIN	1	5	NON CYTOPLASMIC.
FT	TRANSMEM	6	23	
FT	DOMAIN	24	30	CYTOPLASMIC.
FT	TRANSMEM	31	48	
FT	DOMAIN	49	58	NON CYTOPLASMIC.
FT	TRANSMEM	59	79	
FT	DOMAIN	80	92	CYTOPLASMIC.
FT	TRANSMEM	93	112	
FT	DOMAIN	113	127	NON CYTOPLASMIC.

FT	TRANSMEM	128	149	
FT	DOMAIN	150	173	CYTOPLASMIC.
FT	TRANSMEM	174	193	
FT	DOMAIN	194	195	NON CYTOPLASMIC.
FT	TRANSMEM	196	215	
FT	DOMAIN	216	240	CYTOPLASMIC.
//				
ID	TcasOr22 (AM689924)			
FT	DOMAIN	1	33	NON CYTOPLASMIC.
FT	TRANSMEM	34	55	
FT	DOMAIN	56	63	CYTOPLASMIC.
FT	TRANSMEM	64	86	
FT	DOMAIN	87	115	NON CYTOPLASMIC.
FT	TRANSMEM	116	136	
FT	DOMAIN	137	154	CYTOPLASMIC.
FT	TRANSMEM	155	176	
FT	DOMAIN	177	252	NON CYTOPLASMIC.
FT	TRANSMEM	253	276	
FT	DOMAIN	277	292	CYTOPLASMIC.
FT	TRANSMEM	293	313	
FT	DOMAIN	314	347	NON CYTOPLASMIC.
FT	TRANSMEM	348	368	
FT	DOMAIN	369	382	CYTOPLASMIC.
//				
ID	TcasOr23 (AM689925)			
FT	DOMAIN	1	33	NON CYTOPLASMIC.
FT	TRANSMEM	34	55	
FT	DOMAIN	56	63	CYTOPLASMIC.
FT	TRANSMEM	64	86	
FT	DOMAIN	87	112	NON CYTOPLASMIC.
FT	TRANSMEM	113	136	
FT	DOMAIN	137	153	CYTOPLASMIC.
FT	TRANSMEM	154	174	
FT	DOMAIN	175	187	NON CYTOPLASMIC.
FT	TRANSMEM	188	211	
FT	DOMAIN	212	254	CYTOPLASMIC.
FT	TRANSMEM	255	276	
FT	DOMAIN	277	278	NON CYTOPLASMIC.
FT	TRANSMEM	279	298	
FT	DOMAIN	299	360	CYTOPLASMIC.
//				
ID	TcasOr24 (AM689926)			
FT	DOMAIN	1	39	NON CYTOPLASMIC.
FT	TRANSMEM	40	60	
FT	DOMAIN	61	69	CYTOPLASMIC.
FT	TRANSMEM	70	92	
FT	DOMAIN	93	136	NON CYTOPLASMIC.
FT	TRANSMEM	137	160	
FT	DOMAIN	161	182	CYTOPLASMIC.
FT	TRANSMEM	183	203	
FT	DOMAIN	204	251	NON CYTOPLASMIC.
FT	TRANSMEM	252	277	
FT	DOMAIN	278	288	CYTOPLASMIC.

FT	TRANSMEM	289	311	
FT	DOMAIN	312	323	NON CYTOPLASMIC.
FT	TRANSMEM	324	342	
FT	DOMAIN	343	343	CYTOPLASMIC.
//				
ID	TcasOr25 (AM689927)			
FT	DOMAIN	1	383	NON CYTOPLASMIC.
FT	TRANSMEM	384	408	
FT	DOMAIN	409	421	CYTOPLASMIC.
FT	TRANSMEM	422	440	
FT	DOMAIN	441	469	NON CYTOPLASMIC.
FT	TRANSMEM	470	492	
FT	DOMAIN	493	508	CYTOPLASMIC.
FT	TRANSMEM	509	530	
FT	DOMAIN	531	551	NON CYTOPLASMIC.
FT	TRANSMEM	552	575	
FT	DOMAIN	576	614	CYTOPLASMIC.
FT	TRANSMEM	615	637	
FT	DOMAIN	638	752	NON CYTOPLASMIC.
FT	TRANSMEM	753	775	
FT	DOMAIN	776	791	CYTOPLASMIC.
//				
ID	TcasOr26 (AM689928)			
FT	DOMAIN	1	25	NON CYTOPLASMIC.
FT	TRANSMEM	26	46	
FT	DOMAIN	47	53	CYTOPLASMIC.
FT	TRANSMEM	54	72	
FT	DOMAIN	73	82	NON CYTOPLASMIC.
FT	TRANSMEM	83	101	
FT	DOMAIN	102	114	CYTOPLASMIC.
FT	TRANSMEM	115	134	
FT	DOMAIN	135	167	NON CYTOPLASMIC.
FT	TRANSMEM	168	191	
FT	DOMAIN	192	248	CYTOPLASMIC.
FT	TRANSMEM	249	269	
FT	DOMAIN	270	304	NON CYTOPLASMIC.
FT	TRANSMEM	305	324	
FT	DOMAIN	325	338	CYTOPLASMIC.

C

TcasGr38	-----
TcasGr46	-----
TcasGr1	-----
TcasGr123	-----
TcasGr62	MMDRINHKKFINTTKLLWCDQITIGLITFDINTPSFKLSKIRSFLNITASAVLLPFAIYH 60
TcasGr25	-----
TcasGr59	-----
AgamGr2	-----
AaegGr66a	-----
DmelGr66a	-----
TcasGr11	-----
TcasGr55	-----
TcasGr21	-----
TcasGr56	-----
AaegGr	-----
AaegGr28a	-----
AgamGr33	-----
DmelGr28bB	-----
DmelGr28bC	-----
DmelGr28bD	-----
DmelGr28bA	-----
DmelGr28bE	-----
AgamGr25	-----
AaegGr43a	-----
DmelGr43a	-----
AgamGr37b	-----
AgamGr37d	-----
AgamGr37a	-----
AgamGr37c	-----
AgamGr37e	-----
AgamGr37f	-----
AaegGr28c	-----
AaegGr28b	-----
AaegGr28e	-----
TcasGr14	-----
TcasGr49	-----
AmelGr4	-----
AmelGr5	-----
TcasGr16	-----
TcasGr22	-----
TcasGr17	-----
TcasGr150	-----
TcasGr32	-----
TcasGr54	-----
TcasGr37	-----
TcasGr53	-----
TcasGr5	-----
TcasGr12	-----
TcasGr13	-----
TcasGr104	-----
TcasGr45	-----
TcasGr98	-----
TcasGr52	-----
TcasGr105	-----
TcasGr4	-----
TcasGr44	-----
AgamGr9a	-----
AgamGr9c	-----
AgamGr9b	-----
AgamGr9d	-----
AgamGr9e	-----
AgamGr9f	-----
AgamGr9g	-----
AgamGr9i	-----
AgamGr9h	-----
AgamGr9j	-----
AgamGr9l	-----
AgamGr9k	-----

AgamGr9m -----
AgamGr9n -----
AgamGr10 -----
AgamGr11 -----
DmelGr23aA -----
DmelGr23aB -----
DmelGr39aA -----
DmelGr39aB -----
DmelGr39aC -----
DmelGr39aD -----
DmelGr98c -----
DmelGr98d -----
DmelGr98b -----
AgamGr51 -----
AgamGr52 -----
DmelGr94a -----
DmelGr97a -----
DmelGr93b -----
DmelGr93c -----
DmelGr22d -----
DmelGr22e -----
DmelGr22a -----
DmelGr22b -----
DmelGr22c -----
DmelGr22f -----
DmelGr36a -----
DmelGr36c -----
DmelGr36b -----
DmelGr59d -----
DmelGr59a -----
DmelGr59b -----
AgamGr26 -----
AgamGr27 -----
AgamGr29 -----
AgamGr31 -----
AgamGr30 -----
AgamGr32a -----
TcasGr2 -----
TcasGr9 -----
TcasGr7 -----
TcasGr30 -----
TcasGr29 -----
AaegGr64f -----
AaegGr64a3 -----
AgamGr14 -----
AgamGr18 -----
AaegGr64d -----
AgamGr17 -----
AaegGr64c -----
DmelGr64c -----
DmelGr64d -----
AgamGr20 -----
AaegGr61a -----
AgamGr21 -----
AaegGr64a -----
DmelGr64a -----
DmelGr61a -----
AgamGr15 -----
AaegGr1 -----
DmelGr5a -----
DmelGr64f -----
DmelGr64e -----
Ame1Gr1 -----
Ame1Gr2 -----
AgamGr16 -----
AaegGr64e -----
TCasGr6 -----
TcasGr26 -----
TcasGr33 -----
AgamGr23 -----

AaegGr21a	-----	
TcasGr10	-----	
TcasGr39	-----	
AgamGr22	-----	
AaegGr21b	-----	
DmelGr21a	-----	
AgamGr24	-----	
AaegGr63a	-----	
DmelGr63a	-----	
TcasGr3	-----	
DmelOr83b	-----	
AgamOr7	-----	
HvirOr2	-----	
TcasOr16	-----MSKIALNNPKSEYPSK-----	QDP 19
TcasOr22	-----MSKIALNNPKSEYPSKYRPRPHRSIPAPQDP	31
AmelOr2	-----	
TcasGr31	-----	
TcasGr35	-----	
DmelGr59c	-----	
DmelGr92a	-----	
DmelGr28a	-----	
DmelGr64b	-----	
TcasGr71	-----	
AgamGr19	-----	
AaegGr64b	-----	
DmelGr93d	-----	
TcasGr34	-----	
TcasGr43	-----	
TcasGr47	-----	
AmelGr3	-----	
AgamGr32b	-----	
AgamGr50	-----	
TcasGr20	-----	
TcasGr79	-----	
TcasGr15	-----	
TcasGr60	-----	
AgamGr38	-----	
TcasGr51	-----MNMILKLSLKDIVFINPLVKYLNIFFITPWYDFPTNQKYYPSLAKCYA	48
DmelGr39b	-----	
AgamGr28	-----	
TcasGr61	-----	
TcasGr50	-----	
AgamGr12	-----	
AgamGr36	-----	
AgamGr48	-----	
AgamGr49a	-----	
AgamGr49b	-----	
DmelGr2a	-----	
DmelGr32a	-----	
DmelGr68a	-----	
AmelGr7	-----	
AmelGr8	-----	
AmelGr9	-----	
TcasGr57	-----	
TcasGr41	-----	
AgamGr34	-----	
AgamGr35	-----	
AgamGr39	-----	
AgamGr40	-----	
AaegGr28d	-----	
AgamGr42	-----	
AgamGr41	-----	
AgamGr43	-----	
DmelGr33a	-----	
AgamGr44	-----	
AgamGr13	-----	
AgamGr45	-----	
AgamGr46	-----	
Dmelr93a	-----	
AmelGr6	-----	

AmelGr10 -----
 TcasGr28 -----
 TcasGr40 -----
 AgamGr3 -----
 AgamGr4 -----
 AgamGr6 -----
 AgamGr7 -----
 AgamGr47 -----
 DmelGr8a -----
 AgamGr5 -----
 AgamGr8 -----
 DmelGr9a -----
 DmelGr59f -----
 DmelGr77a -----
 DmelGr85a -----
 TcasGr27 -----
 TcasGr48 -----
 AgamGr1 -----
 DmelGr10a -----
 DmelGr59e -----
 DmelGr10b -----
 DmelGr89a -----
 DmelGr57a -----
 DmelGr47b -----
 DmelGr58a -----
 DmelGr58b -----
 DmelGr98a -----
 AaegGr93a -----
 TcasGr19 -----
 DmelGr47a -----
 DmelGr58c -----

TcasGr38 -----
 TcasGr46 -----
 TcasGr1 -----
 TcasGr123 -----
 TcasGr62 IFMHIVPTKLISFYKSTAILEIAFEVIFIVTVWMTGAVKHSKIAHFLNKMIRLDERFQSV 120
 TcasGr25 -----
 TcasGr59 -----
 AgamGr2 -----
 AaegGr66a -----
 DmelGr66a -----
 TcasGr11 -----
 TcasGr55 -----
 TcasGr21 -----
 TcasGr56 -----
 AaegGr -----
 AaegGr28a -----
 AgamGr33 -----
 DmelGr28bB -----
 DmelGr28bC -----
 DmelGr28bD -----
 DmelGr28bA -----
 DmelGr28bE -----
 AgamGr25 -----
 AaegGr43a -----
 DmelGr43a -----
 AgamGr37b -----
 AgamGr37d -----
 AgamGr37a -----
 AgamGr37c -----
 AgamGr37e -----
 AgamGr37f -----
 AaegGr28c -----
 AaegGr28b -----
 AaegGr28e -----
 TcasGr14 -----
 TcasGr49 -----
 AmelGr4 -----

AmelGr5 -----
TcasGr16 -----
TcasGr22 -----
TcasGr17 -----
TcasGr150 -----
TcasGr32 -----
TcasGr54 -----
TcasGr37 -----
TcasGr53 -----
TcasGr5 -----
TcasGr12 -----
TcasGr13 -----
TcasGr104 -----
TcasGr45 -----
TcasGr98 -----
TcasGr52 -----
TcasGr105 -----
TcasGr4 -----
TcasGr44 -----
AgamGr9a -----
AgamGr9c -----
AgamGr9b -----
AgamGr9d -----
AgamGr9e -----
AgamGr9f -----
AgamGr9g -----
AgamGr9i -----
AgamGr9h -----
AgamGr9j -----
AgamGr9l -----
AgamGr9k -----
AgamGr9m -----
AgamGr9n -----
AgamGr10 -----
AgamGr11 -----
DmelGr23aA -----
DmelGr23aB -----
DmelGr39aA -----
DmelGr39aB -----
DmelGr39aC -----
DmelGr39aD -----
DmelGr98c -----
DmelGr98d -----
DmelGr98b -----
AgamGr51 -----
AgamGr52 -----
DmelGr94a -----
DmelGr97a -----
DmelGr93b -----
DmelGr93c -----
DmelGr22d -----
DmelGr22e -----
DmelGr22a -----
DmelGr22b -----
DmelGr22c -----
DmelGr22f -----
DmelGr36a -----
DmelGr36c -----
DmelGr36b -----
DmelGr59d -----
DmelGr59a -----
DmelGr59b -----
AgamGr26 -----
AgamGr27 -----
AgamGr29 -----
AgamGr31 -----
AgamGr30 -----
AgamGr32a -----
TcasGr2 -----
TcasGr9 -----

TcasGr7	-----	
TcasGr30	-----	
TcasGr29	-----	
AaegGr64f	-----	
AaegGr64a3	-----	
AgamGr14	-----	
AgamGr18	-----	
AaegGr64d	-----	
AgamGr17	-----	
AaegGr64c	-----	
DmelGr64c	-----	
DmelGr64d	-----	
AgamGr20	-----	
AaegGr61a	-----	
AgamGr21	-----	
AaegGr64a	-----	
DmelGr64a	-----	
DmelGr61a	-----	
AgamGr15	-----	
AaegGr1	-----	
DmelGr5a	-----	
DmelGr64f	-----	
DmelGr64e	-----	
AmelGr1	-----	
AmelGr2	-----	
AgamGr16	-----	
AaegGr64e	-----	
TCasGr6	-----	
TcasGr26	-----	
TcasGr33	-----	
AgamGr23	-----	
AaegGr21a	-----	
TcasGr10	-----	
TcasGr39	-----	
AgamGr22	-----	
AaegGr21b	-----	
DmelGr21a	-----	
AgamGr24	-----	
AaegGr63a	-----	
DmelGr63a	-----	
TcasGr3	-----	
DmelOr83b	-----	
AgamOr7	-----	
HvirOr2	-----	
TcasOr16	NRTSIFPHVTPHQPIPHPLFHPLVHDFGDTVSPSTHVPLIPITSRVRRFHLTTYRCGCE	79
TcasOr22	NRTSIFPHVTPHQPIPHPLFHPLVHDFGDTVSPSTHVPLIPITSRVRRFHLTTYRCGCE	91
AmelOr2	-----	
TcasGr31	-----	
TcasGr35	-----	
DmelGr59c	-----	
DmelGr92a	-----	
DmelGr28a	-----	
DmelGr64b	-----	
TcasGr71	-----	
AgamGr19	-----	
AaegGr64b	-----	
DmelGr93d	-----	
TcasGr34	-----	
TcasGr43	-----	
TcasGr47	-----	
AmelGr3	-----	
AgamGr32b	-----	
AgamGr50	-----	
TcasGr20	-----	
TcasGr79	-----	
TcasGr15	-----	
TcasGr60	-----	
AgamGr38	-----	
TcasGr51	CLLMVVKILWVIYWLQDDALKSVYASLLCTEKIFLFAIYTNLSILTTVTIFKSAFWDVDK	108
DmelGr39b	-----	

AgamGr28 -----
 TcasGr61 -----
 TcasGr50 -----
 AgamGr12 -----
 AgamGr36 -----
 AgamGr48 -----
 AgamGr49a -----
 AgamGr49b -----
 DmelGr2a -----
 DmelGr32a -----
 DmelGr68a -----
 AmelGr7 -----
 AmelGr8 -----
 AmelGr9 -----
 TcasGr57 -----
 TcasGr41 -----
 AgamGr34 -----
 AgamGr35 -----
 AgamGr39 -----
 AgamGr40 -----
 AaegGr28d -----
 AgamGr42 -----
 AgamGr41 -----
 AgamGr43 -----
 DmelGr33a -----
 AgamGr44 -----
 AgamGr13 -----
 AgamGr45 -----
 AgamGr46 -----
 Dmelr93a -----
 AmelGr6 -----
 AmelGr10 -----
 TcasGr28 -----
 TcasGr40 -----
 AgamGr3 -----
 AgamGr4 -----
 AgamGr6 -----
 AgamGr7 -----
 AgamGr47 -----
 DmelGr8a -----
 AgamGr5 -----
 AgamGr8 -----
 DmelGr9a -----
 DmelGr59f -----
 DmelGr77a -----
 DmelGr85a -----
 TcasGr27 -----
 TcasGr48 -----
 AgamGr1 -----
 DmelGr10a -----
 DmelGr59e -----
 DmelGr10b -----
 DmelGr89a -----
 DmelGr57a -----
 DmelGr47b -----
 DmelGr58a -----
 DmelGr58b -----
 DmelGr98a -----
 AaegGr93a -----
 TcasGr19 -----
 DmelGr47a -----
 DmelGr58c -----

TcasGr38 -----
 TcasGr46 -----
 TcasGr1 -----
 TcasGr123 -----
 TcasGr62 -----
 TcasGr25 -----

GLQIDTVREKRRIKIHFFLRSFLAIMLPLGILLISQDVIANVLLFIFIVVKSQVAFQTIE 180

TcasGr59 -----MWSENITDVLKHWVFLSKLFLLCPRSIDEKIKRQERHSFYKIYKYTYNIV 50
AgamGr2 -----
AaegGr66a -----MAAKVGSSLLESIKVLFYSSSILGIPYSLRDFYSRTVLRVSVVGNIWVLLSV 53
DmelGr66a --MDNMQAEDAVQPLLQQFQQLFFISKIAGILPQDLEKFRSRNLEKSRNGMIYMLSTL 58
TcasGr11 -----
TcasGr55 -----
TcasGr21 -----
TcasGr56 -----
AaegGr -----
AaegGr28a -----
AgamGr33 -----
DmelGr28bB -----
DmelGr28bC -----
DmelGr28bD -----
DmelGr28bA -----
DmelGr28bE -----
AgamGr25 -----
AaegGr43a -----
DmelGr43a -----
AgamGr37b -----
AgamGr37d -----
AgamGr37a -----
AgamGr37c -----
AgamGr37e -----
AgamGr37f -----
AaegGr28c -----
AaegGr28b -----
AaegGr28e -----
TcasGr14 -----
TcasGr49 -----
AmelGr4 -----
AmelGr5 -----
TcasGr16 -----
TcasGr22 -----
TcasGr17 -----
TcasGr150 -----
TcasGr32 -----
TcasGr54 -----
TcasGr37 -----
TcasGr53 -----
TcasGr5 -----
TcasGr12 -----
TcasGr13 -----
TcasGr104 -----MRFLGESPNGIYLYHDGRVKLLEGRRVVDCDD 32
TcasGr45 -----
TcasGr98 -----
TcasGr52 -----
TcasGr105 -----
TcasGr4 -----
TcasGr44 -----
AgamGr9a -----
AgamGr9c -----
AgamGr9b -----
AgamGr9d -----
AgamGr9e -----
AgamGr9f -----
AgamGr9g -----
AgamGr9i -----
AgamGr9h -----
AgamGr9j -----
AgamGr9l -----
AgamGr9k -----
AgamGr9m -----
AgamGr9n -----
AgamGr10 -----
AgamGr11 -----
DmelGr23aA -----
DmelGr23aB -----
DmelGr39aA -----
DmelGr39aB -----

DmelGr39aC	-----	
DmelGr39aD	-----	
DmelGr98c	-----	
DmelGr98d	-----	
DmelGr98b	-----	
AgamGr51	-----	
AgamGr52	-----	
DmelGr94a	-----	
DmelGr97a	-----	
DmelGr93b	-----	
DmelGr93c	-----	
DmelGr22d	-----	
DmelGr22e	-----	
DmelGr22a	-----	
DmelGr22b	-----	
DmelGr22c	-----	
DmelGr22f	-----	
DmelGr36a	-----	
DmelGr36c	-----	
DmelGr36b	-----	
DmelGr59d	-----	
DmelGr59a	-----	
DmelGr59b	-----	
AgamGr26	-----	
AgamGr27	-----	
AgamGr29	-----	
AgamGr31	-----	
AgamGr30	-----	
AgamGr32a	-----	
TcasGr2	-----	
TcasGr9	-----	
TcasGr7	-----MRVQPSNTPPEKSQST	17
TcasGr30	-----MRVQPSNTPPEKSQST	17
TcasGr29	-----MRVQPSNTPPEKSQST	17
AaegGr64f	-----	
AaegGr64a3	-----	
AgamGr14	-----M	1
AgamGr18	-----	
AaegGr64d	-----MKL	3
AgamGr17	-----	
AaegGr64c	-----	
DmelGr64c	-----	
DmelGr64d	-----	
AgamGr20	-----MIEVGFGRMPGP	14
AaegGr61a	-----MIDPLWRDRYIL	12
AgamGr21	-----MCVRSNPKENRAPVLESV	19
AaegGr64a	-----	
DmelGr64a	-----MKGPNLNFRTKPSKDNG	17
DmelGr61a	-----MSRTSDDIRKH	11
AgamGr15	-----MG---FAVSENHDTKPLIQPTWHTC-LK	24
AaegGr1	-----MARKLLPQVLEPRQTGKIVRFNGELVPVQ	29
DmelGr5a	-----MRQLKGRNRCNRAVR----	HLK 18
DmelGr64f	-----MKILPKLERKLRRLKRVTRTSLFRKLDLVHER	33
DmelGr64e	-----MARTTGDPAKRRRCMSRIKFWRRSRVGSEATLG	33
AmelGr1	-----	
AmelGr2	-----MHSEDQIQLMMLKTKDGLGEIPKGKGRGNSLKI	33
AgamGr16	-----MFPLLT---	6
AaegGr64e	-----MPGNFGRNDRHVILVRSK	18
TCasGr6	-----MEISD-----LAQLYGNE	13
TcasGr26	-----MEISD-----LAQLYGNE	13
TcasGr33	-----MEISD-----LAQLYGNE	13
AgamGr23	---MRWNGCRYRYKTDQTPQRRVEKNFIRRHCPKTMVIKESFDDSLGYALLRRDMGTV	57
AaegGr21a	---MTVIAIKVVEKAN---YRTVDYHVLR-----KKMVIKDFEFEDSLNYALLRGMGTT	49
TcasGr10	-----MRNDHGSNT-----HLHPDDA	16
TcasGr39	-----MRNDHGSNT-----HLHPDDA	16
AgamGr22	-----MIHTQMED--AQYEIRHQVLNPNQ-----RQQLEDR	29
AaegGr21b	-----MIHSQMED--SQYQIRQQILNPNQ-----RQQLEDN	29
DmelGr21a	-----MSFWAVSRGLTPPSKVVPMLNPNQ-----RQFLEDE	31
AgamGr24	-----	
AaegGr63a	-----MNLNQDPIQYINLNNNARTVFLDVKPIYNE-----EKR	33

DmelGr63a	----MRPSGEKVVKGHGQGNHSGHSLSGMANYRKKKGDVFLNAKPLNSANAQAYLYGVR	56
TcasGr3	-----MYHQDQAVSILGEAIPKRRSVFLES-----GVN	28
DmelOr83b	-----MTTSMQPSKYTGLVADL	17
AgamOr7	-----MQVQPTKYVGLVADL	15
HvirOr2	-----MMTKVKAQGLVSDL	14
TcasOr16	RISNSR-----NTLSQYQILTNTFQMMKFVTGLVADL	112
TcasOr22	RISNSRSVTNFQPLVRNTLSQYQILTNTFQPLVRNTLSQYQILTNTFQMMKFVTGLVADL	151
AmelOr2	-----MMKFKQQLIADL	13
TcasGr31	-----	
TcasGr35	-----	
DmelGr59c	-----	
DmelGr92a	-----	
DmelGr28a	-----	
DmelGr64b	-----	
TcasGr71	-----	
AgamGr19	-----	
AaegGr64b	-----	
DmelGr93d	-----	
TcasGr34	-----	
TcasGr43	-----	
TcasGr47	-----	
AmelGr3	-----	
AgamGr32b	-----	
AgamGr50	-----	
TcasGr20	-----	
TcasGr79	-----	
TcasGr15	-----	
TcasGr60	-----	
AgamGr38	-----	
TcasGr51	WRTLFTNLQYIDINLQNKGKKESKLMKNFYFWFVLKQVMFLCYSTYGIQVFGTMQRTSFF	168
DmelGr39b	-----	
AgamGr28	-----	
TcasGr61	-----MTKSTVYDTSWLILLSLLLGLYPSYLQTVGKCQRLKTDKN	41
TcasGr50	-----	
AgamGr12	-----	
AgamGr36	-----	
AgamGr48	-----	
AgamGr49a	-----	
AgamGr49b	-----	
DmelGr2a	-----	
DmelGr32a	-----MSENTWVI	8
DmelGr68a	-----	
AmelGr7	-----	
AmelGr8	-----	
AmelGr9	-----	
TcasGr57	-----	
TcasGr41	-----	
AgamGr34	-----	
AgamGr35	-----	
AgamGr39	-----	
AgamGr40	-----	
AaegGr28d	-----	
AgamGr42	-----	
AgamGr41	-----	
AgamGr43	-----	
DmelGr33a	-----	
AgamGr44	-----	
AgamGr13	-----	
AgamGr45	-----	
AgamGr46	-----	
Dmelr93a	-----	
AmelGr6	-----MMKSIRKELA	10
AmelGr10	-----	
TcasGr28	-----	
TcasGr40	-----	
AgamGr3	-----	
AgamGr4	-----	
AgamGr6	-----	
AgamGr7	-----	
AgamGr47	-----	

DmelGr8a -----
AgamGr5 -----
AgamGr8 -----
DmelGr9a -----
DmelGr59f -----
DmelGr77a -----
DmelGr85a -----
TcasGr27 -----
TcasGr48 -----
AgamGr1 -----
DmelGr10a -----
DmelGr59e -----
DmelGr10b -----
DmelGr89a -----
DmelGr57a -----
DmelGr47b -----
DmelGr58a -----
DmelGr58b -----
DmelGr98a -----
AaegGr93a -----
TcasGr19 -----
DmelGr47a -----
DmelGr58c -----

TcasGr38 -----MNNKLNMLVVKSMQLRIKMEEKLVEKFLNSLQIYL 36
TcasGr46 -----MEEKLVVEKFLNSLQIYL 18
TcasGr1 -----MQHEVVKKFLHNSVRIVF 17
TcasGr123 -----MSDFQKLYQKFVNSIRILL 19
TcasGr62 FVSIIRNRFVILNRYIEESISKYKHAELVMPLCKSCDLHHRLSKLIKQLNATYGLILLM 240
TcasGr25 -----
TcasGr59 AVSLTAYMVYITTNLR----ITQKLSIVTQLADLIFSASANASGVATVFFCLFYQNKLIE 106
AgamGr2 -----MEPFMMAVDMVAGMINQKRLAQ 22
AaegGr66a VSYSVSYHMVTDAYVG---VGGGQGTLTNAIGIFIIYMEPLMMCIDMLAAMLNQKRLIE 110
DmelGr66a ILYVVLYNLIYSFGEEDRSLKASQSTLTFVIGLFLTYIIGLIMMVSQDLTALRNQGRIGE 118
TcasGr11 -----MIKFSKVKSYFTTHHDTLHNIYTSMKPVYAI CKLIG 36
TcasGr55 -----MIKFSKVKSYFTTHHDTLHNIYTSMKPVYAI CKLIG 36
TcasGr21 -----MLPKQFLKLFKDPDVYTAIHPLFYVCTFFG 31
TcasGr56 -----MLPKQFLKLFKDPDVYTAIHPLFYVCTFFG 31
AaegGr -----MASSHWRDCINPKNFYAAQAPVLKATFIGG 31
AaegGr28a -----
AgamGr33 -----MRKCLRTFLNPKDFYAAQRPVLRVSVFLVG 29
DmelGr28bB -----MSALRRVRKYFISSQVYEALRPLFFLTFLYG 31
DmelGr28bC ---MDIEMAKEPVNPTDTPDIEVTPGLCQPLRRRFRFVTAKQLYECLRPVHVYTIHG 56
DmelGr28bD -----MSFYFCEIFKPRDAFGAEQTLTTYLLG 29
DmelGr28bA -----MIRCGLDIFRGCGRFRYWLSARDCYDSISLMVAIAFALG 40
DmelGr28bE -----MWLLRRSVGKSGNRPHDVYTCYRLTIFMALCLG 33
AgamGr25 -----MEISESTKVVFFVSRIFG 18
AaegGr43a -----MEISESTKVVFFVSRIFG 18
DmelGr43a -----MEISQPSIGIFYISKVLA 18
AgamGr37b -----MMDSCLLVQ-----NVHDTFRPFYLLKVTG 26
AgamGr37d -----MR-WFSVT-----SVYETVQPFMFLGCVG 24
AgamGr37a -----MYRRSVAVVMLLNESLNVSMEVLYWILRFLG 33
AgamGr37c -----MSLFG-----DALVAYETFSVLLKYL 23
AgamGr37e -----MLTSNE-----DALKAFECFTLVVKCLG 23
AgamGr37f -----MVYKVLQKFN-----TSSSIEAFQPFLLLKCLG 29
AaegGr28c -----MSSAK-----VTVFETYSSVIVLLKCVG 23
AaegGr28b -----MALQWLKGHRLRALSSSDSIYDVVYLNLYLLSKIFG 34
AaegGr28e -----MALQWLKGHRLRALSSSDSIYDVVYLNLYLLSKIFG 34
TcasGr14 -----
TcasGr49 -----MCQIKNLLLLSSTQPNYLILSNKNNTYLVLNKYLL 37
AmelGr4 -----MVDKLYWSRNMHLAIMLFLFFF 22
AmelGr5 -----MVDKSYWSRNMDRLLTLLFFFF 22
TcasGr16 -----MPQVKLHKHYVPIILLSKILG 21
TcasGr22 -----
TcasGr17 -----MNTFKIFRPKILAEIFG 18
TcasGr150 -----MNTFKIFRPKILAEIFG 18
TcasGr32 -----MSFKLLRLVLKVGHFFA 17
TcasGr54 -----MSFKLLRLVLKVGHFFA 17
TcasGr37 -----MLKWWLKVGNVLA 13

TcasGr53 -----MLKWVLKVGNVLA 13
TcasGr5 -----MTIQLLSLICKFGGWMG 17
TcasGr12 -----MSNLKLLKFLKLGQLL 18
TcasGr13 VSSVSQSEAGDEDRFSFTSSMVQSLDGNSSDLENSSEENCVSMNLKLLKFLKLGQLL 92
TcasGr104 -----MCYFNYSKKDIRSLSFYKICNIFG 25
TcasGr45 -----MCYFNYSKKDIRSLSFYKICNIFG 25
TcasGr98 -----MSYRLSRNDRFLKVMYKLSHFLS 24
TcasGr52 -----
TcasGr105 -----MYFSRRDIRFLRPIFAVCRLFA 22
TcasGr4 -----MVRPELDLNSLKCI TKVLTILG 22
TcasGr44 -----MTRAMVRPELDLNSLKCI TKVLTILG 26
AgamGr9a -----MHVLSNLRMLRCLQFVG 18
AgamGr9c -----MFENIHALRSLQWVG 16
AgamGr9b MINRVERGWEMVECITLVSLSENGAHVRWRCKSFGKVVYITMHVFDNIHVLLRSLQFLG 60
AgamGr9d -----MDVFDNIRGLRCLRLLG 18
AgamGr9e -----MKWVQTILNLSSTVG 15
AgamGr9f -----MECLQIMFQSLSALG 15
AgamGr9g -----MWCLRHLQCMKELG 15
AgamGr9i -----MRCIRVQLAYMGRGL 15
AgamGr9h -----MAASSFAELIRPMINTACTLG 21
AgamGr9j -MLMQPVDIRPFSISLINLLPSISRIGPCVWLPQFCLLFNRMSNLLKRYRLLAVASIGY 59
AgamGr9k -MLEH---LFWYTFLSIILWYSFS---FFWK---CTTVDKMSSLVKRYQRLFAVATVMY 49
AgamGr9l -----MSWLKSPLYGQYQNDIRIVTFYHQDTVDIMSMYIRQNHFTLRIVTAIY 49
AgamGr9m -----MWFISFYHEAYT---TFVIRGKAVVKSSTMSACARLNRYTFKIMSSVY 45
AgamGr9n -----MSSLYRQHSRIFQISRLLY 19
AgamGr10 -----MSSLYRQHSRIFQISRLLY 19
AgamGr11 -----MSSYYRRHARIFQAAALFY 19
DmelGr23aA -----MKTLECLTRRFLEVIFSVL 19
DmelGr23aB -----MFPPTRVQASSRVVLKIFHFI 21
DmelGr39aA -----MGTRNRKLLFFLHYQRYLG 19
DmelGr39aB -----MDFQPGELCAYYRLCYRLG 19
DmelGr39aC -----MKRNAFEELRVQLRTLKWL 20
DmelGr39aD -----MSKVCRDLRIYLRLLHIMG 19
DmelGr98c -----MEMEAKRSRLLTTARPYLQVLSLFG 25
DmelGr98d -----MEANRSRLLAAARPYIQIYSIFG 23
DmelGr98b -----MVAQKSRLARAFPYLDIFSVA 23
AgamGr51 -----MCVCVCVCVAVSPVRWSVRRFSCCTMQVPRWLVLSVVLKFLFA 46
AgamGr52 -----MDYTDKSCVPSRDATLSVAMNVSKWSERLERCVSFLLA 39
DmelGr94a -----MDFTSDYAHRRMVKFLTIILIGFMTVFG 28
DmelGr97a -----MRFLRRQTRRLRSIWQRSLPVRFRGKLTQLVTICLYATVFLNLYG 48
DmelGr93b -----MVYGTMSGLLVMPRIILRCLNVSRISAILLRSCFLYGTFFG 41
DmelGr93c -----MIERLKKVSLPALSAFILFCSCHYGRILG 29
DmelGr22d -----MFRPR-CGLRQK-FVYVILKSILYSSWLLG 28
DmelGr22e -----MFRPSGSGYRQK-WTGLTLKGALYGSWILG 29
DmelGr22a -----MSQPKRIHRICKGLARFTIRATLYGSWVLG 30
DmelGr22b -----MFGSS-REIRPY-LARQMLKTTLYGSWLLG 28
DmelGr22c -----MFASR-SDLQSR-LCWIIKATLYSSWFLG 28
DmelGr22f -----MKMFQPR-RGFSCH-LAWFMLQTTLYASWLLG 30
DmelGr36a -----MFDWVGLLLKVLVYYGQIIG 20
DmelGr36c -----MDLESFLLGAVYYGLFIG 19
DmelGr36b -----MVDWVLLKAVHIYCYLIG 20
DmelGr59d -----MADLLKCLRIAYAYGRLTG 20
DmelGr59a -----MKRIGQAYNVYAVFIG 16
DmelGr59b -----MVYWMIKLYFRYSLAIG 17
AgamGr26 -----MVLELLSNRHLFRNEFLHSAHRLRVCQVFG 31
AgamGr27 -----MAFATAAIQSFLQLNVKRSYRLLTVGQVFG 31
AgamGr29 -----MSRIQTENRAHFRAILMDTFQPAIFLSQWSC 31
AgamGr31 -----MHRLTTEKCAFRNLLVDTCLRAIRLSQWCC 31
AgamGr30 -----MCLVELDAAFYQYLLNQFRPLLNVAQCFCG 30
AgamGr32a -----MDPIKLDTTFYHKLVLVKKFNLLNIAQLAG 30
TcasGr2 MEKSTKIFPVPGD-----KNLHKSYSKMLILAQIFG 31
TcasGr9 MEKSTKIFPVPGD-----KNLHKSYSKMLILAQIFG 31
TcasGr7 ADTANLINKSLGK-----HNLQKSFQKVVILAQIFG 48
TcasGr30 ADTANLINKSLGK-----HNLQKSFQKVVILAQIFG 48
TcasGr29 ADTANLINKSLGK-----HNLQKSFQKVVILAQIFG 48
AaegGr64f -----
AaegGr64a3 -----
AgamGr14 LNMTPEVTPVKRFPVSRPSTPSTALAEETPPADGAAERECSTHEAVALVIFMGQLFS 61
AgamGr18 -----MKIASSLLLFYFFLP-----ITFNIFRAKVVLLGQCIT 33
AaegGr64d LTLTSRRAATAVAIGKESFFPNFHLPRWSKWI GRLK GKSTFDG SFHQAVAPVLFV GQCFT 63

AgamGr17 -----MESP-----AIDDFHRAVRPFLLIISQLFS 24
 AaegGr64c -----MQAPNQHCLAQLRKWHRHQFSPDNAVMDSNSKIDDFWGAVRPIIFVAQLFT 51
 DmelGr64c -----MQQSGQKQTR----NTLQHAIGPVLVIAQFFG 28
 DmelGr64d -----MLRSHLSVHGLQMERSVQENTLHYTIGHVLI IARIFG 37
 AgamGr20 VRSSNATRPTRSRWHWLRKRGNVTFVR-----PAAEIDDRKERFYLAIAS 59
 AaegGr61a WKNSKILQPDEEPVNEENVSEYDFH-----IAIAPVLR----FSQLFG 53
 AgamGr21 RTLATSMCSSVTTTAMKLAAGYTLRQRVRQKLCPKIVDDDRDTFLRGIRPVVILGQMGF 79
 AaegGr64a -----
 DmelGr64a VKQVESLARPETPPPKFVEDSNLEFNVLASEKLPN---YTNLDFHRAVFPFMFLAQCV 74
 DmelGr61a LKVRQRKQRAILAMRWRC AQGLEF-----EQLDTFYGAIRPYLCVAQFFG 57
 AgamGr15 RWC-ASWLHWPR-----VQRR-----ASREDWLFNGTFHEASRGVLMMAQLFS 66
 AaegGr1 SKS-RAFLKHFK-----YPKR-----ATRENWIHDGSHDAVSGLLITAQLFS 71
 DmelGr5a VQG-KMWLKNLKSGLQIR-ESQVR-----GTRKNFLHDGSHFEAVAPVLAQAQFC 68
 DmelGr64f ARK-KAFQESCETYKNQIENEYEIRNSLPKLSRSDKEAFLSDGSHQAVGRVLLVAEFFA 92
 DmelGr64e I IKYRVVEKDTKRFKLSLIKAWLLR-----IRQEDYKYSGSFQEAIKPVLI IAQIFA 85
 AmelGr1 -----MRPIIMLAQFFS 12
 AmelGr2 WSSVMYHKDDNIEDISANQENDLSTKRPRAEARNYFRNSEALENFHCAIGPVLKAAQIFG 93
 AgamGr16 ----EDFYHPPNR-----PRFINGG--GYFCRSIRPVLIVGQMGF 40
 AaegGr64e VGDSSSFEREFYR-----QRQVNLQEGSYLAVFRPVIILGQVFA 58
 TCasGr6 LHIKQISKWLRG-----SARAQEIQKRSELDKDGHVIDEHDQFFRDHKL LVLFRVLG 67
 TcasGr26 LHIKQISKWLRG-----SARAQEIQKRSELDKDGHVIDEHDQFFRDHKL LVLFRVLG 67
 TcasGr33 LHIKQISKWLRG-----SARAQEIQKRSELDKDGHVIDEHDQFFRDHKL LVLFRVLG 67
 AgamGr23 WDTAKDERMVNGTMDPELIQRAKERAVRAQLNSADGDTCEHDQFYRDHKL LVLFRGLA 117
 AaegGr21a WDINKDERMMNGTLDPELIQRAKERAIRAQLNSADGDTCELDHDFYRDHKL LVLFRALA 109
 TcasGr10 IRRAKIVKVAASPT-----SANPDE-----EPDPELLDRYDNFYQTTKSL LVLFRQIMG 64
 TcasGr39 IRRAKIVKVAASPT-----SANPDE-----EPDPELLDRYDNFYQTTKSL LVLFRQIMG 64
 AgamGr22 RRIKEQLHQLEQDN-----ESPTHMYRRKLIASDVNLLDQHDSFYHTTKSL LVLFRQIMG 84
 AaegGr21b RRIKEQMQLQRDD-----ASPSHMYIRKLEFQADVNLLDKHDSFYHTTKSL LVLFRQIMG 84
 DmelGr21a VRYREKLLKLMARG-----DAMEEVYVRKQETVDDPLELDKHDSFYQTTKSL LVLFRQIMG 85
 AgamGr24 -----MVFESSKPIYLVLVRAIG 17
 AaegGr63a KVSNGFNRRIG-----FPPISSRRVFGLESEFN--TRSDIVYGTTPKIY NVLRLMLG 82
 DmelGr63a KYSIGLAERLDADY-----EAPPLDRKSSDSTASNNPEFKPSVYFRNIDP INWFLRIIG 111
 TcasGr3 SADSFKASKVG-----PAPPIKFKINKSSTDKFGN-----GAIYEVLPKIYALMRIVG 75
 DmelOr83b MPNIRAMKYSGLFMHNFTGG----SAFMKKVYSSVHLVFLMQFTF ILVNMALNAEVE 73
 AgamOr7 MPNIRLQMAGHFLFRYVTG----PILIRKVVSWWTLAMVLIQFFAILGNLATNADDVNE 71
 HvirOr2 MPNIKLMQMAGHFLFNHSEENAGMSNLLRKIYASTHAILIFIHYACMGINMAKYSDEVNE 74
 TcasOr16 MPNIRLIQASGHFMLNYHADNSGALHTLRLGYCCMHLVFLVQYGCNFVNLVLERGDVND 172
 TcasOr22 MPNIRLIQASGHFMLNYHADNSGALHTLRLGYCCMHLVFLVQYGCNFVNLVLERGDVND 211
 AmelOr2 MPNINLMKATGHFMFNYTDS--TKHIHKI-YCIVHLVLI LMQFGFCGINLMMESD VDD 71
 TcasGr31 -----
 TcasGr35 -----
 DmelGr59c -----MVDLVKTIILLIAYWYG 16
 DmelGr92a -----MFEFLHQMSAPKLSTSI LRYIFRYAQFIG 29
 DmelGr28a -----MAFKLWERFSQADNVFQALRPLTFISLLG 29
 DmelGr64b -----MPQGETFHRAVSNVLFISQIYG 22
 TcasGr71 -----MTDHNLLRLIVTIGEFFA 18
 AgamGr19 -----MNFHNTIRPILVIFLLFG 18
 AaegGr64b -----MATAEMRRIARTGINFS---N 18
 DmelGr93d -----MKATKYSVGILRFMSFYARFLS 22
 TcasGr34 -----MSSQLLKLTHDALKILG 17
 TcasGr43 -----MDFQLLQIMFTIGKFFA 17
 TcasGr47 -----MDLEVLEIYFTVANKFS 17
 AmelGr3 -----MEVKRVEEKRKILFNNELCQAIFPIIYLGKFCG 33
 AgamGr32b -----MAWNDTEIDRLRHQLRQNI SPTVRLSQCLS 30
 AgamGr50 -----MARKGVLTIGERFCI WLLMVG 22
 TcasGr20 -----MTPHALISSDFHDVIKPLINLTKIFG 26
 TcasGr79 -----MNSIPIETIFKFGKYTL 17
 TcasGr15 -----MDIKSIKTCFYVAKFFA 17
 TcasGr60 -----MILVLLVIVNLGLNG 15
 AgamGr38 -----MKAKSGNRELFESLLRFPKR DVPDCVPLHY 30
 TcasGr51 KTFNLNSCLMDVYEFLLISLINILIRSFKSRKDLNQLKLETA CEQSKSVEELMN IANYR 228
 DmelGr39b -----MLYSFHPYLYKIFALLG 16
 AgamGr28 -----MFEGRDVQHLRKLQLYQSFQYLRCAQLLS 30
 TcasGr61 CTIVIIIFHLILFAVLLYFASLEKNPLFDGQLYSFNTFAKLLIFVVSLSGNSAVFIMLIIS 101
 TcasGr50 -----MSLYSSINSLVLI SKIFA 18
 AgamGr12 -----MARLCAKLRVLFVSNVLY 19
 AgamGr36 -----MGCSYKNPRHVYDVL RPLLAFFSKYFG 26
 AgamGr48 -----MMVRYGLRALYFHSILG 18
 AgamGr49a -----MQNSSRMMSFINYPRSI FNQLNHSRTQCD SAA 32
 AgamGr49b -----MLYGYLTLLVLRHLHFHTAQ CIG 22

DmelGr2a	-----MEFGMDTLRALEPLHRACQVCN	22
DmelGr32a	EMPTQKTRSHPYPRRISPYRPPVLRDAFSRDAPPMPARNHDHPVFEDIRTIILSVLKASG	68
DmelGr68a	-----MKIYQDIYPIISKPSQIFA	18
AmelGr7	-----MYEPKTLKETIKPLMVVNFVFG	22
AmelGr8	-----MIDRLKCNKRVKNCRQSSALCFGNYS	29
AmelGr9	-----MWLEKLLKHKIWKIFKATDFNSLMFPCFFICGIIIG	35
TcasGr57	-----MKEVPGWLTTPPHSLG	15
TcasGr41	-----MIEVGKTRVKRASNLFRFQFCA	24
AgamGr34	-----MKNKVSLSIIISIVEMNVKFYRLLG	25
AgamGr35	-----MSKWINKRKVSIILNLAPPSKPGPALQATPVGEQEFELFHFAFKCFRLFA	50
AgamGr39	-----MSRLFEEKSFVQTLRILYIATLFG	25
AgamGr40	-----MKWFSVDSVYDSVRPVYRAGKLIG	24
AaegGr28d	-----MRWFKVHNYFESLRPLYLAIKLLH	24
AgamGr42	-----MSTRKLYWFNIGSFFETMKPNIRVLKLF	29
AgamGr41	-----MDVFGLENSRELVVSWWPKINDVVHAVSPIWNTSRAFG	38
AgamGr43	-----MCFVLFILPYSMLMLIAVFSFIQIIIG	26
DmelGr33a	-----MIQIMNWFMSVIGLIPLNRRQSETNFILDYAMMCIVPIFYVACYLLINLSHIIIG	54
AgamGr44	-----MLNDKVVNGLLLFSTTIALLG	22
AgamGr13	-----MLLLFSLYFNLLLSYAAG	18
AgamGr45	-----MPPRKVFAWSISLQNAIIPLYIISKVGCINAFYTLPLPHFLDITYAG	46
AgamGr46	-----MNGINTGKPPSAASPPDYSRQQFLRCFRPLHLLSSTFA	38
Dmelr93a	-----MFSSSSAMTGKRAESWSRLLLLWLRYCARG	30
AmelGr6	RYPAKRVLPLTKPRLKPFVDVETTFAEVTLARKEHTRKYHGPDSSLYSIYPVVCMVKVFG	70
AmelGr10	-----MVLVGDNLIFNAGLILG	18
TcasGr28	-----MRLIRKMKSDLVLTIEASDAVL	22
TcasGr40	-----MVFAELWKKIRNRGTPPKFELPTTHNCLKVVLLLSQIVG	39
AgamGr3	-----MASVRKFLILVTFGAFSWLLLLLQQLFG	27
AgamGr4	-----MQFSSHQSSDVHFIVSRERSSPSTCTMNLVLPPLLPNGQQLLSVAFGIFKCFG	52
AgamGr6	-----MFNSFSKSSLEFILTETQCTTMEQFSASSMSRHHAPYDRRFGSIIYPLFQLL	52
AgamGr7	-----MLVTLIFQLCALQTYASTDAPLGSLLALLWCINCYCILYVG	40
AgamGr47	-----MSVMESNEKFYHPQKTKTGVVIVTINVVQYQKKWD	35
DmelGr8a	-----MSGHLGRVLQFHLRLYQVLG	20
AgamGr5	-----MSRINEIMKIAQPIRDNYFARSPWSKGRFRVGTYLPNLDRARLVFSVRD	51
AgamGr8	-----MECFSKVIVLYQILA	15
DmelGr9a	-----MSLWLEHFLTGYFQLCG	17
DmelGr59f	-----MRSSATKGAKLKNSPRERLSSFPNQAERYKELYRTLFWLL	41
DmelGr77a	-----MPLPLGDPALAVSPQLGYIRITAMPRWLQPLGMSALGILYSLTRVFG	48
DmelGr85a	-----MYSLIEAQLLGGKLVNRVMAASLRRIIQRSLYGFCALNG	38
TcasGr27	-----MSHSNPLEAFKLNFTFLKALT	21
TcasGr48	-----MHTLQHFTIDTRSTHSMKNFKYLKVLVTFFAHFIC	34
AgamGr1	-----MIGLKKHRAFLERLWTLRAQHVFG	25
DmelGr10a	-----MTSPDERKSFWERHEFKFYRYGHVYALIYG	30
DmelGr59e	-----MDSSYWENLLTINRFLG	18
DmelGr10b	-----MRVGKLCRLALRFWMGLIILVLG	22
DmelGr89a	-----MLRFPHVCGLCLLLKYWQILA	21
DmelGr57a	-----MAVLYFFREPETVFDCAAFICILQFLMG	28
DmelGr47b	-----MQRDDGFVYCYGNLYSLLLLYWG	22
DmelGr58a	-----MLLKFMYYIGIGCG	14
DmelGr58b	-----MLHPKLGVRMNVVYHSMVFA	21
DmelGr98a	-----MEQMSGELHAASLLYMRRLMKCLG	24
AaegGr93a	-----MVQSLQILWQFNLAVLHLMESLFG	24
TcasGr19	-----MTSKARTFTIKCPVKKRCKTVSNVS	25
DmelGr47a	-----MAFTSSQLCSLLTKFTA	17
DmelGr58c	-----MNQYFLLHTYFQVSRILG	18
TcasGr38	QHN-----QIF	42
TcasGr46	QHN-----QIF	24
TcasGr1	VQS-----EIF	23
TcasGr123	FQS-----RIF	25
TcasGr62	FTSHFIFIVVSIFYMSAYLISNPIMWDRVMLLTFWSAFFIVNVLYICNQCYNTVEESRIF	300
TcasGr25	-----	
TcasGr59	VISK-----LHKLDN	116
AgamGr2	CFDR-----LARLDN	32
AaegGr66a	CVER-----LDKVDL	120
DmelGr66a	LYER-----IRLVDE	128
TcasGr11	LNTLR-----IGR	44
TcasGr55	LNTLR-----IGR	44
TcasGr21	LAPYS-----LVR	39
TcasGr56	LAPYS-----LVR	39

AaegGr	LTPFT-----	VVN	39
AaegGr28a	-----		
AgamGr33	MTPFT-----	VVK	37
Dme1Gr28bB	LTPFH-----	VVR	39
Dme1Gr28bC	LTSFY-----	ISCD	65
Dme1Gr28bD	LTPFR-----	LRG	37
Dme1Gr28bA	ITPFL-----	VRR	48
Dme1Gr28bE	IVPYY-----	VSI	41
AgamGr25	LAPYV-----	VKRT	27
AaegGr43a	LAPYV-----	VKRT	27
Dme1Gr43a	LAPYA-----	TVRN	27
AgamGr37b	LAPF-----	RLN	33
AgamGr37d	LAPFG-----	YRLG	33
AgamGr37a	YAPFR-----	LQLD	42
AgamGr37c	VNPPI-----	SCDR	32
AgamGr37e	LYPPV-----	TCSR	32
AgamGr37f	LTPFF-----	SNAS	38
AaegGr28c	LHPPL-----	TNPK	32
AaegGr28b	MFIYT-----	VTEN	43
AaegGr28e	MFIYT-----	VTDN	43
TcasGr14	-----	MPL	3
TcasGr49	VKHSK-----	PKMPL	47
AmelGr4	KFFGL-----	ATFSL	32
AmelGr5	KFAGL-----	ATFSL	32
TcasGr16	IAPIS-----	YKNSN	31
TcasGr22	-----		
TcasGr17	LSPMT-----	QKLTTL	28
TcasGr150	LSPMT-----	QKLTTL	28
TcasGr32	ITPGF-----		22
TcasGr54	ITPGF-----		22
TcasGr37	MTP-----		16
TcasGr53	MTP-----		16
TcasGr5	LTP-V-----		21
TcasGr12	LAP-----		21
TcasGr13	LAP-----		95
TcasGr104	IVPPY-----		30
TcasGr45	IVPPY-----		30
TcasGr98	ITPNY-----		29
TcasGr52	MQDSF-----		5
TcasGr105	LVPYY-----		27
TcasGr4	LLSCSFP-----		29
TcasGr44	LLSCSFP-----		33
AgamGr9a	QLSIQN-----	HA	26
AgamGr9c	QLSIQN-----	HA	24
AgamGr9b	LISVQKCQCS-----	DHR	73
AgamGr9d	LFSIHQ-----	YR	26
AgamGr9e	VALARY-----	D	22
AgamGr9f	MTLVRY-----	D	22
AgamGr9g	LTMVKY-----	D	22
AgamGr9i	LTMVKY-----	D	22
AgamGr9h	ISYVKH-----	CP	29
AgamGr9j	LIPCSY-----	N	66
AgamGr9l	ILPCRY-----	N	56
AgamGr9k	FLPVSY-----	N	56
AgamGr9m	YLPVAY-----	D	52
AgamGr9n	FTPCCSY-----	N	26
AgamGr10	FTPCCSY-----	N	26
AgamGr11	LVPCSY-----	N	26
Dme1Gr23aA	ALVPLP-----	PIS	28
Dme1Gr23aB	LVAFSL-----	RSR	30
Dme1Gr39aA	LTNLDF-----	SKS	28
Dme1Gr39aB	IFCIDY-----	NPT	28
Dme1Gr39aC	VLRFTI-----	DFN	29
Dme1Gr39aD	MMCWHF-----	DSD	28
Dme1Gr98c	LTPPAE-----	FFT	34
Dme1Gr98d	LTPPIQ-----	FFT	32
Dme1Gr98b	LTPPPQ-----	SFG	32
AgamGr51	I--LPLSFD-----	R	54
AgamGr52	CGTFPLRFD-----	A	49
Dme1Gr94a	LLAN-----		32

DmelGr97a	VYLG-----	52
DmelGr93b	VITFRIERK-----D	51
DmelGr93c	VICFDIGQR-----T	39
DmelGr22d	IFPFKYEP-----	36
DmelGr22e	VFPFAYDS-----	37
DmelGr22a	LFPFTFDS-----	38
DmelGr22b	IFPFTLD SG-----K	38
DmelGr22c	VFPYRFDS-----	36
DmelGr22f	LFPFTFDS-----	38
DmelGr36a	LINF EIDWQ-----	29
DmelGr36c	LSNF EFDWN-----	28
DmelGr36b	LSNF EFD CR-----	29
DmelGr59d	VINFKIDLK-----	29
DmelGr59a	MTSYETMG-----	24
DmelGr59b	ITSQQFSN-----	25
AgamGr26	TVPWEVT-L-----F	40
AgamGr27	LVAWDLQPL-----E	41
AgamGr29	TAPYPLDPY-----Q	41
AgamGr31	TAPYPLDPY-----Q	41
AgamGr30	FLPYPFDF-----Q	39
AgamGr32a	FLPFPAY-V-----L	39
TcasGr2	FFP--VQGV RG-----PD	42
TcasGr9	FFP--VQGV RG-----PD	42
TcasGr7	FFP--AQGILG-----RD	59
TcasGr30	FFP--AQGILG-----RD	59
TcasGr29	FFP--AQGILG-----RD	59
AaegGr64f	-MP--ISGYFR-----TP	10
AaegGr64a3	-MP--ISGYFR-----TP	10
AgamGr14	LIP--IDGYARS-----TD	73
AgamGr18	LLP--VVNIFS-----AN	44
AaegGr64d	LMP--VVEIFS-----HN	74
AgamGr17	LFP--LGGLYG-----RT	35
AaegGr64c	LFP--VQGVFG-----RD	62
DmelGr64c	VLP--VAGVWPS-----CR	40
DmelGr64d	VLP--LAGINPN-----GK	49
AgamGr20	VFP--LSNITA-----TD	70
AaegGr61a	VFP--LNSVMN-----RL	64
AgamGr21	IFP--IYGVTR-----ND	90
AaegGr64a	-----	
DmelGr64a	IMP--LVGIRE-----SN	85
DmelGr61a	IMP--LSNIRS-----RD	68
AgamGr15	IMP--VCGILA-----KD	77
AaegGr1	IMP--VCGIGQ-----KD	82
DmelGr5a	LMP--VCGISA-----PT	79
DmelGr64f	MMP--VKGVTG-----KH	103
DmelGr64e	LMP--VRKVSS-----KF	96
AmelGr1	LFP--VSGVNS-----PD	23
AmelGr2	MFP--VSGIGS-----SS	104
AgamGr16	LLP--LDGVWC-----GR	51
AaegGr64e	IFP--VVG YGV-----AL	69
TCasGr6	VMP--IQRGEIG-----	77
TcasGr26	VMP--IQRGEIG-----	77
TcasGr33	VMP--IQRGEIG-----	77
AgamGr23	VMP--ITRSVPG-----	127
AaegGr21a	VMP--ILRSSPG-----	119
TcasGr10	VMP--IERSGKG-----	74
TcasGr39	VMP--IERSGKG-----	74
AgamGr22	VMP--IMRSPKG-----VD	96
AaegGr21b	VMP--IVRSPKG-----VN	96
DmelGr21a	VMP--IHRNPPE-----KN	97
AgamGr24	VLP--YTRLPSG-----G	28
AaegGr63a	VFP--FSRPSPG-----V	93
DmelGr63a	VLP--IVRHGPA-----R	122
TcasGr3	IFP--IKNTEPG-----	85
DmelOr83b	LSGNTITTLFFT-----HC	87
AgamOr7	LTANTITTLFFT-----HS	85
HvirOr2	LTANTITVLFFA-----HT	88
TcasOr16	LAANTITVLFFT-----HC	186
TcasOr22	LAANTITVLFFT-----HC	225
AmelOr2	LTANTITMLFFT-----HS	85

TcasGr31	-----	
TcasGr35	-----	
DmelGr59c	LAVGVSN-----FE	25
DmelGr92a	VIFF-----	33
DmelGr28a	LAPFRLN-----	36
DmelGr64b	LLPVSNVR-----ALD	33
TcasGr71	MTP-----	21
AgamGr19	QFP-----	21
AaegGr64b	IIG-----	21
DmelGr93d	LVCFRLRKQKDN-----N	35
TcasGr34	IGP-----	20
TcasGr43	LTP-----	20
TcasGr47	G-----	18
AmelGr3	LVPVRFVHTS-----	44
AgamGr32b	LAPYPLS-----VF	39
AgamGr50	VLP-----	25
TcasGr20	FLPVCS-----	32
TcasGr79	LTP-----	20
TcasGr15	ITP-----	20
TcasGr60	LID-----	18
AgamGr38	LVLKMSG-----MG	39
TcasGr51	ILGDTVEIFNSLFG-----YQIILVIFDCCLETVSALNGAF	264
DmelGr39b	LVP-----	19
AgamGr28	NVP-----	33
TcasGr61	FMHKKSFKNFVN-----NVAAL	118
TcasGr50	LLP-----	21
AgamGr12	LVPCR-----	24
AgamGr36	LTAFS-----	31
AgamGr48	LVPYELN-----	25
AgamGr49a	ADRATTTLG-----R	42
AgamGr49b	FVPLHFN-----	29
DmelGr2a	LWPWRLAPPPD-----S	34
DmelGr32a	LMPIYEQVS-----	77
DmelGr68a	ILPFYSG-----DV	27
AmelGr7	MGLTGIEAK-----	31
AmelGr8	LIYYIAFIN-----R	39
AmelGr9	YFPYKWR-----	42
TcasGr57	N-----	16
TcasGr41	ICVP-----	28
AgamGr34	LAPFELN-----	32
AgamGr35	LTPGLMD-----	57
AgamGr39	LISFTT-----	31
AgamGr40	IFT-----	27
AaegGr28d	FHFET-----	29
AgamGr42	LFPYTISQAKGR-----SF	43
AgamGr41	IHVLN-----	43
AgamGr43	LQLHDS-----Y	33
DmelGr33a	LCLLDSCN-----SVC	65
AgamGr44	YLTITYD-----	29
AgamGr13	LVPFRYN-----	25
AgamGr45	CKSDKCVKIGTADIP-----V	62
AgamGr46	LWPFGG-----	44
Dmelr93a	LLVLSSSL-----	39
AmelGr6	LAPYDFTG-----D	79
AmelGr10	CTALCAS-----	25
TcasGr28	AYP-----	25
TcasGr40	VFP-----	42
AgamGr3	FFNFPLK-----	34
AgamGr4	FIPFP-----	57
AgamGr6	FTP-----	55
AgamGr7	VLTFCIER-----	49
AgamGr47	YMELLDN-----V	43
DmelGr8a	FHGLPLP-----	27
AgamGr5	MEPLEQWYVLSG-----YVRFHQ	69
AgamGr8	LQWFS-----	20
DmelGr9a	LVCG-----	21
DmelGr59f	LISVLAN-----	48
DmelGr77a	LMATAN-----	54
DmelGr85a	ILDFN-----	43
TcasGr27	VHVHEN-----	27

TcasGr48	LFP-----	37
AgamGr1	VSSLIVD-----	32
DmelGr10a	QVVIDY-----	36
DmelGr59e	VYP-----	21
DmelGr10b	FSSHYYN-----	29
DmelGr89a	LAPFRTS-----	28
DmelGr57a	CNGFGIR-----	35
DmelGr47b	LVTIRVRSP-----D	32
DmelGr58a	LMPAPLK-----	21
DmelGr58b	LMSTTLR-----I	29
DmelGr98a	MLPFG-----	29
AaegGr93a	LRCVRFDR-----	32
TcasGr19	LHSLKN-----	31
DmelGr47a	LNG-----	20
DmelGr58c	LCNLHYD-----	25
TcasGr38	GFVTFCTRSNFRSSKLLILYNIILQVLFVSVFVSYWLYLVLEADDMLPIYKNTYLIILFA	102
TcasGr46	GFVTFCTRSNFRSSKLLILYNIILQVLFVSVFVSYWLYLVLEADDMLPIYKNTYLIILFA	84
TcasGr1	CLVNFNHRSEYFRLSKAKSFCTFVAALVYCSVTFFALSELTDLATSILLKVSSLLIGFC	83
TcasGr123	GLVTFTPDRSKFRPSSLRFCNLNLSIFTYVPMILYCVYTTAT-YDSFMIYKTTNIILGL	84
TcasGr62	GLVTFTPDRSKFRPSSLRFCNLNLSIFTYVPMILYCVYTTAT-YDSFMIYKTTNIILGL	359
TcasGr25	-----M	1
TcasGr59	KLKHMILWKSYKRTQIFITCELEFFVILLWISFFLNFMLHCNNTTWRCLYRWIVLYTLSKM	176
AgamGr2	HLAGEGVLINNGRMRRYSIVLLLLMLLFEAIITVYSFVAFEEFNWAWLIWFITTIPTAL	92
AaegGr66a	KLAGENIPVDNGLRRLRYVILLVLFVFEAILTTYNFVEFSEAYTLLSLMWFITTFPTAI	180
DmelGr66a	RLYKEGCVMDNSTIGRRIRIMLIMTVIFELSILVSTYVKLVVYSQWMSLLWIVSAIPTFI	188
TcasGr11	----KGEKQHKSDYFYFSFYITSYTLLSVYSLFRIATNENNSLVINKRLIFIECFVMMA	100
TcasGr55	----KGEKQHKSDYFYFSFYITSYTLLSVYSLFRIATNENNSLVINKRLIFIECFVMMA	100
TcasGr21	VENGGKVKFAWWPLTRNALLVILLGALTYHAIFDLISFKSDSLQKLRVFEVFSLL	99
TcasGr56	VENGGKVKFAWWPLTRNALLVILLGALTYHAIFDLISFKSDSLQKLRVFEVFSLL	99
AaegGr	RRRHDSALECTIFGYVNSFIHAATFCTCYVITLVK-HESVTAHFDFSEISTLGDILQIIV	98
AaegGr28a	-----	
AgamGr33	GPTELMMLRCTPFYINSSVHILFCSCYVNALLQ-GDTITRFFFRTDISTLGDVLQFTI	96
DmelGr28bB	RKMGESYLKMSCFGVFNIFIYICLCGFCYISSLRQ-GESIVGYFFRTEISTIGDRLQIFN	98
DmelGr28bC	TKTGKKAIKKTFYINGIMHIAMFVFAYSLTINYNCESVASYFFRSRITYFGDLMQIVS	125
DmelGr28bD	-QAGERQFHLSKIGYLNALFLQSFYSYCFLAALIE-QQSIVGYFFKSEISQMGDSLQKFI	95
DmelGr28bA	NALGENSLEQSWYGFNLAIFRWLLLAYCYSYINLR-NESLIGYFMRNHVSQISTRVHDVG	107
DmelGr28bE	SSEGRGKLTSSYIGYINIIIRMAIYMVNSFYGAVN-RDTLMSNFFLTDISNVIDALQKIN	100
AgamGr25	PIGQIVDYKRSVFLIAYSVGLVFCLAGLTYKGIFFDVTSKPPIRMKTATSKVVTILDVSV	87
AaegGr43a	SKGQIVDYKRNVLVVIYGLGIVFCLAGLTYKGIFFDINSKPPIRMKTATSKVVTILDVSV	87
DmelGr43a	SKG-RVEIGRSWLFVTSATLTVMMVFLTYRGLLFDANSEIPVRMKSATSKVVTALDVSV	86
AgamGr37b	SQ-PSNDRKELYAFGYSASFICVYSYAIYGLFTTNTGH--LYI-SKIVAVMENGMYMFC	89
AgamGr37d	MK-PVNRYLEFCYVLVYGG---MYTYALYSFLFVANVTD--FHL-SLIIGTIECNLSC	85
AgamGr37a	ADTPDRDAFGTWRKLYTISFGLVYTLAFIKFISELKHTG--FSA-SMIEGKGERMYFTF	99
AgamGr37c	KRTRLPYRCVNILSFVLST---LFYGYLLFSISLDSGVLK--AGIKSLIVTRMHDLYFVL	87
AgamGr37e	KRTLLGYKLCNLLAIAFSA---TFYGFLLLFHSLDLETIK--LGSGSLITSRMHDVYFVS	87
AgamGr37f	NR-RLLSVLNVILLLIGT---LYINGPCR-QIRKDMRL--FQS-SPLAVNSRIFTYLM	89
AaegGr28c	RQSOLHYRLINLISLTFIG---CFHGLLMIHFLGNDFTR--YSTGVSIVQQMLYAFYVA	87
AaegGr28b	GFGKRSMIFTWSDIFPIIRLLCLQATSLSYISYAMADHMES--TGS--NIMDFGLKYNLAI	99
AaegGr28e	GLGKRSMIFTWSDIFPIIRLLCLQATSLSYISYAMADHMES--TGS--NIMDFGLKYNLAI	99
TcasGr14	LPKTPPLPLTLLYKLLGIIQFPISAHFSFMSRFLCLPF-YSYFFYLSYIYTTYSRKLSGIF	62
TcasGr49	LPKTPPLPLTLLYKLLGIIQFPISAHFSFMSRFLCLPF-YSYFFYLSYIYTTYSRKLSGIF	106
AmelGr4	NNRRNSKIWSKNVFLVNSKLGILYNLFSVFLIITLNFSLMPLIFYAEYAFRTNITII	92
AmelGr5	NNRANLNKKNSENTMFFISSKLGILYNLFGSCLIIALSFSYIPITMYADYVHKTIIVTITI	92
TcasGr16	VNYSKIGIVQTVAYFVIFIIILTIVFFEKRSALSPFELIQIRTINVFATFRITIANIILMAV	91
TcasGr22	-----MFRDLG---STTM	10
TcasGr17	SPLKVLQTVILGTTTCIYLTSLYIWFILTQMTFS--GVTSPITMKFVLSFRGTGFTFLMVV	86
TcasGr150	SPLKVLQTVILGTTTCIYLTSLYIWFILTQMTFS--GVTSPITMKFVLSFRGTGFTFLMVV	86
TcasGr32	RKNRTTCPEKIYAYGVVAFITLGVAVSVFYRAKDY-----AKFIHIKAVVQITLDATL	75
TcasGr54	RKNRTTCPEKIYAYGVVAFITLGVAVSVFYRAKDY-----AKFIHIKAVVQITLDATL	75
TcasGr37	-TKEKRFPHRIHSYFMVAFYVVFSSVSTFFKIPFY-----STLRPINLLVQIILDVIL	68
TcasGr53	-TKEKRFPHRIHSYFMVAFYVVFSSVSTFFKIPFY-----STLRPINLLVQIILDVIL	68
TcasGr5	SVEPTGFSKPGYSLWILLFTLGVTTISGVYRTDFY-----KKLSPMRLIVQTCDFLL	74
TcasGr12	---VKFYVQKFYVVLAFLLTAGAIIISLVYQAPVY-----KELTDIKLVNLISDVTL	71
TcasGr13	---VKFYVQKFYVVLAFLLTAGAIIISLVYQAPVY-----KELTDIKLVNLISDVTL	145
TcasGr104	SFEKPDQSLSLWKKIQGVVLSIIAAGTAYSIVR-HTYYRRLYTITH-LVLDYLDEFLLI	88
TcasGr45	SFEKPDQSLSLWKKIQGVVLSIIAAGTAYSIVR-HTYYRRLYTITH-LVLDYLDEFLLI	88
TcasGr98	DFENFVIIISPRCDKISAIACFLSTILGTCWIIYVRIYCKEIRFFEISF-EILGSLDSLIL	88
TcasGr52	QYIN-----RSELITS-KIVSFVNSIFL	27

TcasGr105 NFEKFSLEHQWLQKIQAWTYLLILLTTWTVISASTR--IKSFKFLTIGVGITTDIDRVFT 85
TcasGr4 -----KKKLVCYCIIFGAIATLTCIEGLRDCPRKYSTPLAKITITLQRYC 73
TcasGr44 -----KKKLVCYCIIFGAIATLTCIEGLRDCPRKYSTPLAKITITLQRYC 77
AgamGr9a EEDGLFRSTRHATSKFVLSFTVSVLACSYLMHCSIDDDYDKLSVN--GIWPLVYVHNAT 84
AgamGr9c EEDGLFRSTRHATSKFVLSFTVSMVASSHLIYRGVKDYDQLSVD--GIWPLIYVVHYAM 82
AgamGr9b SGSNPFKSTNNAAPKFMILFALSLLTSGHSIFRGTIDNSVIDALDQGTIWPFFVYLHVQIT 133
AgamGr9d HTGNTFECSRHAALKFVIFLITLACSGYSMYRNILDYPAMAAMNNTAIEPFFYIAHTIT 86
AgamGr9e GEQCSYR--RPTTHQCVTHFLLVLFISIGFLLYCIWEQYSIF-AMAIYAFDDATFILLSTAS 79
AgamGr9f VRHRSYR--KPTPFQFSVQLLYSLCCITFTSFRVWVQFSVHSQIEHEMLENISFIVSTAS 80
AgamGr9g PGKHTFISVPYAPLKFSCFLTAALLSSGYLLWRSPMDYIVY-KLDTRMFDITIFIINTTI 81
AgamGr9i SEKHTFNSVQNARFKFSCFLFAVALISSGYLLWRSPMDYSVY-KFDSKIFDITIFIINTII 81
AgamGr9h STSDRFVVPKSLTIKFGFWIVTLLAIGCYSLIRTKQDVLER-SQKESYFDYVLFVSNMM 88
AgamGr9j IRTGLFDCSYRNTLVCCVNVVFFGGFVWYDFGMIL-KFYAT----LPIVLVGILTVDVTV 121
AgamGr9l FRTHMFESWTNMVALVLNIVLHSLCLWLDLNAIK-ISIGY----MSFVMLGVIVIYLV 111
AgamGr9k QTTQRFVQQRNLVSVFGVIGLLSFTFFYHDFIQN-VFFAN----LPPFAFAIVLLELLL 111
AgamGr9m AVEHRFIEKRSNLIIPFAIGLLLSIGFIYHDFIIVLPNFNTD----QSAFTLAVFIVELTV 108
AgamGr9n EELGRFEATKRNLAFLGAALVLTISFVWYDIHLMATNFLTHT----YTTVFAAVGGIELLI 82
AgamGr10 EELGHFVATKSNLTVFGVALVLTISFVWYDIHLMATNVLRT----YTTVFAAVGGIELLI 82
AgamGr11 TETDQFEQRTVNKLAFVAVGIGMTPFFWYFDLKFMAFYLEN----ISPIMVAVGSIEIAV 82
DmelGr23aA QLGWLFSLAIRCCWIVYFIYLLDVAISFSWVAIENVGNAVGTMLFVG-----NSV 79
DmelGr23aB RLSRLVLWLQFLG-WLWTFISMWTQSVIYAQTIDCTLDLDCSLRHILTF-----QTV 80
DmelGr39aA LHIYWLHG--TWSSTAIQIVVGVFMAALLGALAES-LYMETKSQTG-----NTF 76
DmelGr39aB KKKFRLRR--SVLCYIVHFALQAYLVGCLISVMVTYWRRCFKSELTTTG-----NHF 77
DmelGr39aC KCLVRENASERSAWLYLIGVVGITCSLIVYSTYFPPSHFIMGKHNTTG-----NCY 80
DmelGr39aD HCQLVATSGSERYAVVYAGCILVSTTAGFIFALLHPSRFHIAIYNQTG-----NFY 79
DmelGr98c RTLKRKRRCWMAGYSLYLIAILLMVFEYFHANIVSLHLEIYKFHVEDFSKVMGRTOQKFL 94
DmelGr98d RTLHKRRRGVILGYACYLISISLMVIYECYANIVALQKDIHKFHAEDSSKVMGNTQKVL 92
DmelGr98b HTPHRRLRWYLMGTGYVYATAILATVFIIVSYFNIIAIDEVLEYNVSDFTVRMGNIQKSL 92
AgamGr51 HR-ERFRNRTKDVLSTVLLVLYAIVGPIVCELYVMNISVEN-QITNALSASFQAFVYF 112
AgamGr52 VGPGRFFTSRKCALYCSGITVVYAVLSPALMYLIEYHERVANV-YLVSMNLAAQLSFIYL 108
DmelGr94a ----RYRAGRERFRFSKANLAFASLWAIASFSLVYGRQIYKEYQEGQINLKDATTLSYSYM 88
DmelGr97a ----RFSF--RRKKFVFSKGLTIYSLFVATFFALFYIWNINNEISTGQINLRTDIGIYCYM 107
DmelGr93b SQ--LVAINRRGYLWICLVIRLLASCIFYGYSYDAWSGQYEDMYLRAFFGFRLIGCLICSV 109
DmelGr93c SDDSLVVRNRHQFKWFCLSRLISVTAVCCFCAPYVADIEDPYERLLQCFRLSASLICGI 99
DmelGr22d -KKRRLRRSMWLIPFGVVISSSLILMVKQSAEDREHGIMLDVFORNALLYQISSLMGVV 95
DmelGr22e -WTRTLRRSKWLIAYGFVLNAAFILLVLTNDTES-ETPLRMEVFRNALAEQINGIHDIQ 95
DmelGr22a -RKRLNRSKWLLAYGLVNLTLILVLSMLPSTDD-HNSVKVEVFORNPLVKVQVEELVEVI 96
DmelGr22b -RIRQLRRSRCLTLYGLVLN-YFLIFTLIRLAFEYRKHK-LEAFKRNPVLEMINVIGII 95
DmelGr22c -RNGQLKRSRFLFYGLILN-FFLLKLMVCSGGQ-KLGI-PEAFARNSVLENTHYTTGML 92
DmelGr22f -RRKQLKRSRWLLLYGFVLHSLAMCLAMSSHLASKQRRK-YNAFERNPLLEKIYMQFQVT 96
DmelGr36a --RGRVVAQRGILFAIAIN-VLICMVLLLQISKKFN-LDVYFGRANQLHQYVIIVMVSL 85
DmelGr36c --TGRVFTKKWSTLYAIALD-SCIFALYIYHWTGNTNIVNAIFGRANMLHEYVVAILTGL 85
DmelGr36b --TGRVFKSRRCTIYAFMAN-IFILITIIYNFTAHDG-TNLLFQSAKHLHEYVIMSGL 85
DmelGr59d --TGQALVTRGATLISVSTH-THIFALLLYQTMRSV-VNVMWKYANSLHEYVIVIAGF 85
DmelGr59a ---GKFRQSRITRIYCLLIN-AIFLTLPLSAFWKSAK-LLSTADWMPYSYMRVTPYIMCTI 79
DmelGr59b ---RKFFSTLFSRTYALIAN-IVTLIMLPIMWQVQL-VFQKKTFFPKLILITNNVREAV 80
AgamGr26 AHVTQPLSSWRERLFRTLNALSALGLAVLSATVLQHAEE----FDHMHMPFVTHMLYISE 96
AgamGr27 PDRPTTKLHWFRKLIRATNQGYCFMIIVAIGTATVLHSS----NTANAFFAIRTLTYL 97
AgamGr29 RATRNYQAKCSRLVALFRRTLSLLLFTVILAAPFLYHLYSGQIYAYTIPLSVKLMYYVQ 101
AgamGr31 HIKPYQSKSFQNTINILRLLAALLFGIALSVPFLLYFLKADHVNAFKIPLSIRLMFYLQ 101
AgamGr30 RQAEVKNIVLQKMLTILNRTFGLAMIGTVLTCVSLYVCYPSYMYEEDYPPVLNIAHYL 99
AgamGr32a RQDVERLHFRTLVLTLCLNLTFAVLIFLTSFVCYLAAMYIYYPDLMYKENLPAVLQIMYHVE 99
TcasGr2 FRSLRFSWKSARVVYALFLLGTFLLISGFQMQKIATKG-LDLLEANR-----LFFFL 93
TcasGr9 FRSLRFSWKSARVVYALFLLGTFLLISGFQMQKIATKG-LDLLEANR-----LFFFL 93
TcasGr7 FRAIHFTWASARVGYTIVTILGATFVTVLQLHKIFAKG-LNVIEANR-----LFFYC 110
TcasGr30 FRAIHFTWASARVGYTIVTILGATFVTVLQLHKIFAKG-LNVIEANR-----LFFYC 110
TcasGr29 FRAIHFTWASARVGYTIVTILGATFVTVLQLHKIFAKG-LNVIEANR-----LFFYC 110
AaegGr64f ISKLFKTLKSVHFAYGCFVTFIMGAIMMFFAFRIQRGTFGIGATTT-----CIYYA 62
AaegGr64a3 ISKLFKTLKSVHFAYGCFVTFIMGAIMMFFAFRIQRGTFGIGATTT-----CIYYA 62
AgamGr14 PRDVRMLRSVQFVYGCVTLPIMLTLIIMLCVHTAHEPSFGVQQATS-----LVYYA 125
AgamGr18 YRTARFKLRSFRCIYSLVYLALGTIYCTLFIWYIRKG-LNLAYFAN-----CIYMV 95
AaegGr64d PRNTRFKLLSVRFAYTAIYLAAGFYSLACRRFILRG-LNVSSFAD-----MFYLM 125
AgamGr17 LQDIRFRWFGPTVYSFYFLLSGLLTLVAHIYSLTVETLGTSEISN-----LIYYV 87
AaegGr64c LQQIRFQWLHLRRTLISLTLVLAALIIIAQINHTV-VSTANTSMITS-----LVYYI 113
DmelGr64c PERVFRWISLSLLAALILVFSIVDCALSSKVVFDHG-LKIYTIYS-----LSFSV 91
DmelGr64d PENVRFRWFSPYILFFVVAFTFVIADFMLSTKIVLNDG-LQLYTMGS-----LSFSV 100
AgamGr20 PSAFRFHYFSPYIVLSALSIVGGLFIMAAALVRLNRVG-INAMNIAE-----PIFFG 121
AaegGr61a PGNMLYKSVSFATALSMMAIFGGYAVSLLSLKRLARTG-LDAINMAE-----PFFFA 115
AgamGr21 PKRFRWKWFSRLVILNLTVVVTTALLQAYYEGRLKAIG-INAKNVSS-----LIFFI 141
AaegGr64a -----MRLRMVG-VNAKNING-----LIFFV 20

DmelGr64a PRRVRFAYKSI PMFVTLIFMIATSILFSLSMFTHLLKIG-ITAKNFVG-----LVFFG 136
DmelGr61a PQDVKFKVRSIGLAVTGLFLLLGGMKTLVGANILFTEG-LNAKNIVG-----LVFLI 119
AgamGr15 PRKLRFSYTAGRTFYAYFCAIGIGFLATMSVYFFASKR-YHFQKMVT-----AFFYC 128
AaegGr1 TTKLHFSWKSKRIFYSYAACMGTAFLAVTSTIRFVDRN-FNF SRLTG-----FFYF 133
DmelGr5a YRGLSFRNRSWRFWYSSLYLCTSVDLAFSIRRVAHSV-LDVRVSEP-----IVFHV 130
DmelGr64f PSDLSFSWRNIRTCFSLFLFIASSLANFGLSLFKVLNNP-ISFN SIKP-----IFRG 154
DmelGr64e AEDLTFTWFSVRSYYALVTILFFGVSSGYMVAFTSVS-FNFDSVET-----LVFYL 147
AmelGr1 SSYLRFTWRS PKFIYCTISFLSSS IMTIFNVLRIVTTG-ISSIKMTT-----FVFNG 74
AmelGr2 LSKLQFKIFSLTMYSGFIALMISFM TIVSMIHMLKTFNASTFQIRGGLGAATVGA VFY 164
AgamGr16 WWSIHWRLLSWRNLYALFVQLGALIMACFSFATFWYSG-VEFAKIMS-----WFFFT 102
AaegGr64e AERIQFKWCSLRMLYTMFQLGGAIMSGFSLATFWTTG-VEFSKILS-----WMFFT 120
TCasGr6 --RITFGWTSIPMLYAYVFYVVTTLVVLVGVYERFDILLN--KSK----- 118
TcasGr26 --RITFGWTSIPMLYAYVFYVVTTLVVLVGVYERFDILLN--KSK----- 118
TcasGr33 --RITFGWTSIPMLYAYVFYVVTTLVVLVGVYERFDILLN--KSK----- 118
AgamGr23 --RITFSWRSAA SIYAF CFYLVSTVIVLVGVYERIKVFQT--TKKFDEYIYGILFVIFLV 183
AaegGr21a --RITFDWRSWAS IYAYCFYVSTVIVLVGVYERLKIQLD--TKKFDEYIYGVLFIFLV 175
TcasGr10 --RTTFRWLSSTSIYAYFIFGAETIFVTMVFKERLYLILR-PGKRFDEYIYGIIFLSILI 131
TcasGr39 --RTTFRWLSSTSIYAYFIFGAETIFVTMVFKERLYLILR-PGKRFDEYIYGIIFLSILI 131
AgamGr22 MPRTTFTWCSKAFLWAYFIYACETVIVLVVARERINKFISTSDKRFDEVIYNIIFMSIMV 156
AaegGr21b MPRTTFTWFSKAFIWAYFIYACETVIVLVVAKERIKRFISTSDKRFDEVIYNIIFMSLLV 156
DmelGr21a LPRTGYSWGSKQVMWAIFIYSCQTTIVLVLRERVKFKVTS PDKRFDEAIYNIYIFISLLF 157
AgamGr24 ---TAFVLASPSMTYCVLFFLLLVYIAFILLNRIEIVRT-LEGRFEESVIAYLFI VNIL 84
AaegGr63a ---TLFACAS PAMAYCGVLFVTLMA YVIYITILRVHIVRT-LEGRFEEAVIAYLFI VNIL 149
DmelGr63a ---AKFEMNSASF IYSVVFFVLLLAC YVYVANNRIHIVRS-LSGPFEEAVIAYLFI VNIL 178
TcasGr3 ----MFRVAP ELLGYSVVVFFVVMGYIGFIEWDKVEIVRS-QEGRFEEAVIDYLF TVYLL 140
DmelOr83b ITKFIYLA VNQKNFYRTLNIWNQVNT HPLFAESDARYHSIALAKMRKLLFVMLTTVASA 147
AgamOr7 VTKFIYFAVNS ENFYRTLAIWNQTNTHPLFAESDARYHSIALAKMRKLLVLMATTVLSV 145
HvirOr2 I IKLAFFALNSK SFYRTLAVWNQSN SHPLFTESDARYHQIALTKMRLLYFICGMTVLSV 148
TcasOr16 VTKFVYFAVRSKLFYRTLGIWNQPN SHPLFVESNNRYHGIALKMRLLYIIIIWTSFSA 246
TcasOr22 VTKFVYFAVRSKLFYRTLGIWNQPN SHPLFVESNNRYHGIALKMRLLYIIIIWTSFSA 285
AmelOr2 VVKLVYFAVRSKLFYRTLGIWNQPN SHPLFAESNARYHQIAVKKMRILLLAVIIGTTVLSA 145
TcasGr31 -MGSVAINHSLKRLKIIITIVLVVATGNI IHTTSNKQ-----LQFFAV 43
TcasGr35 ---MRLKWYIITISMAFIIFVSL EYHIYTVVEESGFENFVKTYLVSDFENYVTFFC SLF 57
DmelGr59c VDWLITGEAIATRRTTIIYA AVHNASLITLLILFNLGNNSLKSEFISARYLHEYF FMLMTAV 85
DmelGr92a --CLHTRKDDKTVFIRNWLKWLNVTHRIITFTRFFWVYIASISIKTNRVLQV LHGMRLVL 91
DmelGr28a --LNP RKEVQTSKFSFFAGIVHFLFVLCFGISVKEGDSIIGYFFQTNITRFSDGTLRLT 94
DmelGr64b VADIRFRWCSPRILYSLIGLNLSEFGAVIN YVIKVTINFHSTS-----LSLYI 84
TcasGr71 ----SRPKTRAKIYALCVVTALVTPSALSIIYYRQPIYAKISETKSIVAMVMGTIVNAF 76
AgamGr19 -LYGVLTRKPLRWHFRWCSLQTVLSLGLIHVGLF LCFVEYDRLKAIGVNADNLIGPLFYL 80
AaegGr64b ----TYFFVDTAII VCLTVL MASGWRRFLHEVEKLELIWTRWPYNLRRDNLKLNCWILTM 77
DmelGr93d VWLEEIWSNRSRWKWI SVTLRIVPLCIYAF TYAEWISNRMLITEKFLHSCSLVVSIPCYL 95
TcasGr34 -----KSNKIYSFLLTTLTLLVLS SIDRPYLKSYTYIKLVVS-----VLM 62
TcasGr43 --RSIKLEKQTFIQKFYAVAFFLALSIGVVVSIYKSFHRNEIHIKIVLMFFK EASLYCF 78
TcasGr47 -----KLWPI SIVLYTVGVVYSFKRRIFYQDESPISRLVYIGTDSL SYFIS 64
AmelGr3 -EGCQARLNIIDLIYSLCVLVL LLSAEIWGLWRDLKDGWEYSTRLKSRTAVIATCSDVLG 103
AgamGr32b QRNCSTRSVRIRIIICFRYAFATCVTVAVVASQFTMFYYPHIMYQPKVPIFIVILYIV 99
AgamGr50 FQYVVSTNRFVQSTFH YRGCIVGTVLYAMVGPWLYWISVTRILHPDSQLNQYMI VVQFIC 85
TcasGr20 SQKGQKTCLNLSIN YCICGYIFSAILFSL SILGLTEDLNSAPIRMKNPIVKYIILIDLGE 92
TcasGr79 KSRIEKKPSRQKQFYALFIFFYTFGEVFTLVLRIRNMEYRSQTLMQTTLRLIRDLSLYF 80
TcasGr15 -SSIYDKPTKLYQKLYPVMFLYITITEIYSVYERRYMNAHLSG IQLVVRNLLDISLYLN 79
TcasGr60 --WYTVCLVPLNYPQFFLAVQYPRIVSTFNIVFYMYT LILEERFKLINLIKQEEFFSP 76
AgamGr38 CITPRAGVRNGSTM TLLIDIGLFVTNLILAVTMMIYGMFITQRHMQSPIMF IGLKMNFT 99
TcasGr51 LYTINGQGQFNIE MF LCNMSLLTVIPIHVWTSKEKISFLRGFWLSPAVDMFYEFQI IELM 324
DmelGr39b --WSESCAQSKFVQKVYSAILIILNAVHFGIS IYFPQSAELFSLMVNVIVFVARIVCVT 77
AgamGr28 --CCLARDLPSRAYFKQARCLL TAGTFI IWVILCCYQATVKLLELP IFFTAVLYVNEMVL 91
TcasGr61 DETLAKLGQYIN YETDYVCLAMTITGPLVIIGNIAMELWNMPRENI EPLPNVILACHML 178
TcasGr50 ----VKKHHRLEKLVPCVYLT SF SVVLSLGSFIVSVYLT TTKIDNDGESI SLASGWLDLYL 77
AgamGr12 -YCRKENKFKVNPYLSLLAFGINISLASVHLCFDWLQI WNGERRDASRIFNFLQMLHTLT 83
AgamGr36 -IVGEPYVQVKVTGVEYVALLMNFVANLYCVYINVTNRLSRW TGSAVMNLGLGFLFPL 90
AgamGr48 NQNGLRRSKCKRQWTLTIGCTTVVLVGVFSFCTVWLQDTLSFATFVDALLIRSLV LVEFTI 85
AgamGr49a ALVWVFTMSHDVAITKAVLVLIKFCGQLYGILPLASNAFTFERSRPVLWYSRTIALLLMV 102
AgamGr49b KQLQTFQISRWLT VWSHALATLLCVYPPYVILLTGIRYPKLTLVNYLVMMQCSLHYVN 89
DmelGr2a EGIQLRRSRWLELYGWTVLI AATSFYVGLFQESSVEEKQDESESTISSIGHTVDFIQLVG 94
DmelGr32a -DYEVGPPTKTNEFY SFFVRGVVHALTIFNVYSLF TPI SAQLFFSYRETDNVNQWIELLL 136
DmelGr68a DDGFRFGGLGRWYGR LVALIILIGSLTLGEDVLFASKEYRLVASAQGDTEEINRTIETLL 87
AmelGr7 KPSKKLEYVYTL CNLVLFYFINKLTL PYYDKYVISTFELSRFIQW MFHANIWTITLLI 91
AmelGr8 FMGFLPYKLESSKFMYSKLYSVFSTIIIIIVYFLAIFSLYEINFYIVMNDGLPRILHRNS 99
AmelGr9 ---RPVYLF SKTRFVISTFILL SIFIWFNLFYQLNFTDI IKKNTTEVIHENMYALLIGI 99
TcasGr57 ---TVTPVSLRFLKLYTIVHIFII IALYAHSSYGRENFIYGSNMNTVAITDKIANFMLTFF 73
TcasGr41 --KITSTNNEVPRWYICYTIGV IITIGCLC IWSIFNKWNQFRSYSNFSVFLFDIITIVTL 86

AgamGr34 ----TSRVRLSKPFCVAVGGFVTLTYWTAMVSSIATSNHANDRISRISNYFQLITNAIMLT 88
 AgamGr35 RQKDRYVRVNRTRWMLLIVLLLVVAVIALFETFFIERTALITGIANHIQFLMNTIALTV 117
 AgamGr39 --TFDTVGIRRSFKDVLVVFQFMFFNCIVFKTGIPPKSDSPSYFDSLLIQVILGLFLTL 89
 AgamGr40 ---HTIDFERQVLSNTRDQVLLVVAAILMDVYALTVSTRVSYFSNSILLNQVLYCSVNL 84
 AaegGr28d --IDFSTQTLHRTLTDQFRFVFTLLLLDCYLVYKGIQSTSTYFYLTDSNIVNVGCSAFIL 87
 AgamGr42 PSNSHSHNNRCNHSKTLKSEVKFIDIAIFTLWQTFFLQMLYVSWPKMFLNMPVRSRITMV 103
 AgamGr41 ---FDTTDRPTLLELVLSFAITVIRIYMIYIILVTDAWDLIFVSSSQLVEKGLDIVLKI 100
 AgamGr43 ETETNGKTPSLSIVRILYSIILFGAYLVGLYKAVELTFVVEFAANSPSIFKFAYMTQIYS 93
 DmelGr33a KLSSHLFMHLGAFLYLTITLLSLYRKEFFQQFDARLNDIDAVIQKQCRVAEMDKVKVTA 125
 AgamGr44 -RKRQELRVSTVLVVYSIVLAILCTFTYQSAQFLSSDMRYRNGIKESAVNKAIGAIQGV 88
 AgamGr13 -FRKRRFDTCKPFVVPVATVLLLLFAAVQYRLGRLPERMKIPKVGMDIHAVENLVLNGN 84
 AgamGr45 KRFKGKDGKPLAFSFIGVLHALGCSLAYASYHILSSLSQSGKLTDSNLVVRVAIDLKNQYI 122
 AgamGr46 WSSRFNRCSTLYVLAVVTAYSAFHLYINYTDAYSVGTGEDGGKPGDSTPTVDRQQQVEA 104
 Dmelr93a RDKLQLKATKQGSRRNFLHLIWRICIVVMIYAGLWPMPLTSAVIGKRLESYADVLALAQSMS 99
 AmelGr6 EITPSNACLIFSFVFIGIYCHIYIVYKRFNLVRRDKAILSVEVETTKVIPTVLRDLMVTV 139
 AmelGr10 ----KDNVKARRLRDIFIVFSMTLYLVSLVVIYIYVFSYEDSLKSTLIIIRVFLIYL 81
 TcasGr28 -----QPSFHQTFSFVILFQFFGIMPLHGVSRKNVQIEIRLEWKSFRFVYAVYNI 77
 TcasGr40 --LNHLNEEPEKLFHTFKSWKVLVYTSLSYGLFCASLSFYKAFKIGILLNQLITPLFFF 100
 AgamGr3 -LHHADGLAIGHRWSSSVSILHLASAVISGILAKRHYNYLFGGLMLTDAMNMYFKYVI 93
 AgamGr4 FDCCTFALTPCSNVRSLLHLPILQVSYFLTLFCIIMSNRVNFFFTGLQILSLNDIKYGT 117
 AgamGr6 --VPLHGQALTSRLTLTIVFVSFYTTGEIIVLSYSLIKPEAVFFLSDATGTFADAIQFVI 113
 AgamGr7 -RWLFADARTGTGINFIPFKTSITIVTHLVVLEALIARGVYRALDVRVASVDGALGHL 108
 AgamGr47 TKVVEQEFHVRYPVIRVVQTFIVIVISSELIYLVVILAGYYLIDQTLNITDKLYASYM 103
 DmelGr8a --GDGNPARTRRRMLMAWSLFLILSLSALVLAFLSAGEEFLYRGMDFGMCANDALKYVFAEL 85
 AgamGr5 WLGFPYRLASGRVSPFAVLTLAQFLGVLVNLALIIYRRRCILYHCEAIGMVVDFIKLLT 129
 AgamGr8 -----PKRYRTFDCESLFFITLNFCCIITGLFCWYIYQHQLVYSDNALGYVDFLKFLL 74
 DmelGr9a -----WSGRRLGRLSSTFLVLILIELVGEIETYFTEENPDNEVSPAYFAKVI 75
 DmelGr59f -TAPITILPGCPNRFYRLVHLSWMILWYGLFVLSYWEFVLTQVRVSLDRYLNAIESAI 107
 DmelGr77a WSPRGIKRVRSYLYRIHGCVMILFVGCSPFAFWCIFQRMALRQNRILLMIGFNRYVL 114
 DmelGr85a -TDIGTGNLRRYRVLFMRYLHNFAVISLTLKFLDFDTHFKYIESSTLITVNFYFTL 102
 TcasGr27 ---PTYRLYKIFVVSFAVTFPSAWICALVNYNVSEISENFYYPAMSTGLKYAIFQKN 84
 TcasGr48 -ITINIRKNGLNYNFTKCKCYFLRMVLIDLLIVGCILKHIFNLMKNVTLNDVVFIFCSAP 96
 AgamGr1 -KRGNVRSGSAAKPFILAMLGLAISLAVWFILYHNESPVICRSKANQVRLFYFVVIETL 91
 DmelGr10a --VPQRALKRGVVKVLLIAYGHLSMILLIVLPGYFCYHFRTLTDTLDRRLQLLFYVSFTN 94
 DmelGr59e --SGRVGLRWLHTLWSLFLMYIWTGSIVKCLEFTVEIPTIEKLLYLMEFPNGMATIAI 79
 DmelGr10b -PTRRRLVYSRILQTYDWLLMVINLGAFLYLYRYAMTYFLEGMFRQGVFNQVSTCNVFG 88
 DmelGr89a --EPMVARCQRWMTLIAVFRWLLTSMAPFVLWKSAAMYEATNVRHSMVFKTIALATMTG 86
 DmelGr57a -RSTFRISWASRIYSMSVAIAAFCCFLGSLSVLLAEEDIRERLAKADNLVLSISALELLM 94
 DmelGr47b RGGAFSNRWTVCYALFTRSFVVICFMATVMTKLRDPMSAAMFGHLSPLVKAIPTWECLS 92
 DmelGr58a --KGQFLLGKQRWYLIYTAACLHGGLLTVLPFTFPHYMYDDSYMSSNPVLKWTFLNLTNIT 79
 DmelGr58b RSCRKCLRLEKVSRTYTYISFFVGIFFLNLVYFMVPRIMEDGYMKYINVLQWFFVMLFL 89
 DmelGr98a -----QNLFSKGFYVLLFVSLGFSYWRFSFDYEFDYDFLNDRFSSTIDLSNFVALVL 83
 AaegGr93a MKFSICKSCSSFAFIKWLWLLAVVLAALCLSSYAFYFVWCSEPVAGKYLQWISIIIVVFL 92
 TcasGr19 --KRSGASLQVIGILDSLAVFKCNLRRRIYFYCVSITFNVHLLFLLCSGYFTVHLYFCPF 89
 DmelGr47a -----LNTYYFDTKTNAFRVSSKLLKIYCAIHHALCVLALAHMSYSTASNLRVSVTVLT 73
 DmelGr58c --SSNHRFILNHVPTVVYCVILNVVYLLVLPFALFVLTGNIYHCPDAGMFGVYVNVVALT 83

TcasGr38 DFAYLETTWICTLLKDKLLELFKRLIHFDTKCQ-----ENSTVIDYKRHKKRL 151
 TcasGr46 DFAYLETTWICTLLKDKLLELFKRLIHFDTKCQ-----ENSTVIDYKRHKKRL 133
 TcasGr1 ASIYVGTWINTSINGTKFIEFINKLIEFDVKLQ-----NVSLIINENQRTRS 132
 TcasGr123 NVVYVVTAWICAITKRDMFVEFLLKLVDFDSKLQ-----TMNIKVNHRVHRKI 133
 TcasGr62 NVVYVVTAWICAITKRDMFVEFLLKLVDFDSKLQ-----TMNIKVNHRVHRKI 408
 TcasGr25 SQVMLIQFCAFVVVLKQKFCVNVQYIKQVCKLNN-----GHYKNFLS----- 43
 TcasGr59 SQVMLIQFCAFVVVLKQKFCVNVQYIKQVCKLNN-----GHYKNFLS----- 218
 AgamGr2 NSVCRIWYVMLVSAIRQRFNAMNHNMAIAHGIL-----HYKDQYAGEPDAD-- 139
 AaegGr66a NSVSRIWFVVLVQSIRHRFHVNMNHHMDELAALLE-----EHNDRWEDDLEIE-- 227
 DmelGr66a NTLDKIWFVAVSLYALKERFEAINATLEELVDTHE-----KHKLWLRGNQEVPPP 237
 TcasGr11 ---LTLIVTLFTFLARGTLIKSFDMLSHVDVS---FIKAGFRLEYKQLLKRYSYLIISFVL 154
 TcasGr55 ---LTLIVTLFTFLARGTLIKSFDMLSHVDVS---FIKAGFRLEYKQLLKRYSYLIISFVL 154
 TcasGr21 SCCSVIFGCIFALK----VIEVFKNIEEVDVA---FRSLAVWVPYK-HLYVNILIHLSGL 151
 TcasGr56 SCCSVIFGCIFALK----VIEVFKNIEEVDVA---FRSLAVWVPYK-HLYVNILIHLSGL 151
 AaegGr GLVALIMTFGYSVFRRTVIDAFHALARTDLH---FKEIGVEFDYKSTLFRNYGLLFIQI 155
 AaegGr28a -----MTFLYSIAQRHKLIAAFHSLARTDEH---LAEIGVEISYKKTFRNYMVVFLFQL 51
 AgamGr33 GITALFMTFFCSIFQRNKLIKCFHALASIDRR---FKEIGMETNYKSTLHYNLLVMLTKA 153
 DmelGr28bB GLIAGAVIYTSAILKRCKLLGTLTILHSLDTN---FSNIGVRVKYSRIFRYSLLVLIIFKL 155
 DmelGr28bC GFIGVTVIYLTAFVFNHRLERCLQKQFHTMDVQ---LQTVGVKIMYSKVLRFYSVMVLISMF 182
 DmelGr28bD GMTGMSILFLCSSIRVRLLIHIWDRISYIDDR---FLNLGVCFNYPAIMRLRLLQIFLIN 152
 DmelGr28bA GIIAAVFTFILPLLLRKYFLKSVKNMVQVDTQ---LERLRSVPNFNTVVGQVVLVILAVV 164
 DmelGr28bE GMLGIFAILLISLLNRKELLKLLATFDRLETEA--FPRVGVAMHQVAANKKMNRLVILV 158

AgamGr25 VVSACICGTLSSGIGGLHFVRELNRRLTEADEILSLYVKESTRSRRQRRKGILMLGLVCFI 147
 AaegGr43a VVSACICGVFCVGLPFVRELNLQRLNEADDMLSMYFAAGKQD-MEKRRKGLSMLTVVGVV 146
 DmelGr43a VVMACIVSGVYCGFLSNDTLELNDRLNLAIDNTLNAYN----NFRDRWRALGMAAVSLLA 142
 AgamGr37b EFMVTNVAILGLVLRNRVLEIFVQLAEIDEQLNVLRLP-----IKHNRQHRLLTVLCS 143
 AgamGr37d QYLTMVFAIVFAWVVKHRISFIIQLTHECDVQLSKISSP-----IDHRKHLHLKVSMLAV 139
 AgamGr37a NFFTTMYGVVNGYAVRDKIEKMLYKHLAVDQKISQWKRN-----VDHRRFYRNVWAGVY 153
 AgamGr37c RYITVIVVQVHVLNNGGEINRMLRALNSISNAVTLLANRKGVS SKLRFVFGTVRFKGLRV 147
 AgamGr37e RYLTVLAVLLHSYINQNSVDQLFQSLNEVSSALVTLTNTNHASEGSGYFGTQRFARHLRW 147
 AgamGr37f GTLVYHLLTMLINFLHRHRLRDLQAFVNIIDRELQQVGVR-----INYRMHRFLITAGMV 143
 AaegGr28c RYVMSIVVSFFAYNCLSHRMLVKLDQASEIICRMDPLN-----QAPFGTVGSRGRLRM 142
 AaegGr28b GSFYIFLLAISSYRSFGSFWIMLDKLNQFDEWARQINAP-----VCHRTQKRRLWKAIV 153
 AaegGr28e GSFYIFLLAIGSYRSFGSFWIMLDKLNQFDEWARQINAP-----VCHRTQKRRLWKAIA 153
 TcasGr14 KYIDQMAGYTGFLAMLTSMVMFYKRSNDLKTLLS-----NLESIQIYSIKPKERN SN 114
 TcasGr49 KYIDQMAGYTGFLAMLTSMVMFYKRSNDLKTLLS-----NLESIQIYSIKPKERN SN 158
 AmelGr4 ETFQALLGSSVILITLLSYCIFQSVIKEIGNYLI-----RIELILHRLQQP--INQK 142
 AmelGr5 EIFLIILGCFVMTSTLLFYCIFESVIRIGNYLI-----NIENVLRHLQQP--LNRK 142
 TcasGr16 LFLGTFIGRAKFLAILKQMRNLEPEFLKLDQLG-----ATVRNRRQIRR-----MV 137
 TcasGr22 MVLNLFSSQMYFTKKLEQWQVHEVDNQLKQMG C-----DLIPNSVVQKH-----LI 58
 TcasGr17 AVLSSGTTFKLVAKTLENMTKIDKDLTELQKQK-----YLEKRN RHIFRT----SV 133
 TcasGr150 AVLSSGTTFKLVAKTLENMTKIDKDLTELQKQK-----YLEKRN RHIFRT----SV 133
 TcasGr32 YVQNIYTVLTA-LTKKPLWFKLLKLNKLV-----QNHNNIREKS 113
 TcasGr54 YVQNIYTVLTA-LTKKPLWFKLLKLNKLV-----QNHNNIREKS 113
 TcasGr37 LILNVHTILT-ITKRNQWCKLLENLKL-----RENNSS----102
 TcasGr53 LILNVHTILT-ITKRNQWCKLLENLKL-----RENNSS----102
 TcasGr5 LALNISTILT-VRKQQQWALIQNLKVV-----ATTKTK---A 109
 TcasGr12 WLSNVNSLTLT-LKRKK-WNLLFKTLTHD-----EPRKSS----104
 TcasGr13 WLSNVNSLTLT-LKRKK-WNLLFKTLTHD-----EPRKSS----178
 TcasGr104 VALAFQVILNSCFCDPAKWIRLNNNLQYIDEVLK-----NRDSHETNLLRN 134
 TcasGr45 VALAFQVILNSCFCDPAKWIRLNNNLQYIDEVLK-----NRDSHETNLLRN 134
 TcasGr98 LMLVSIILGS--LTKKEWAKLNKQYIDEKLN-----TRDQKERNL FKN 132
 TcasGr52 VMSAVTIILSSLIFNQEQWSSLNKNFQIDKLN-----NRNSKSRVVFYEN 73
 TcasGr105 VAIPFVGIANS CILNQDKWRLLNNNFQIDKIFK-----TRDDR-VKVYQA 130
 TcasGr4 SVLLVFLTYFFNILFRKLLNAVKILSKIDETLNSKPLK-----VKIRTKVYLVYC 125
 TcasGr44 SVLLVFLTYFFNILFRKLLNAVKILSKIDETLNSKPLK-----VKIRTKVYLVYC 129
 AgamGr9a FFAVFCALPWQTYRHRDRLAALNTLRQNE--LSLIDLT--GSVTDYRVVKKLAVVIVCN 140
 AgamGr9c LCTVLCSLPLQTFQRDRLAALNTLHQNE--LSLIDLT--GSVTDYRVVKKLVVILSN 138
 AgamGr9b LCVALCAFWQTFWQRKRLSAAANILAQNE--INLIART--GVRTDYRIVSWLAIIVCN 189
 AgamGr9d VCVVLCVLPVQTVGRRHQLAYFMNILIKNE--EDLVKLTSGGRSTNYRLVTLATVCLWN 144
 AgamGr9e FIVAWFVPLVSCARGDRLIYTLNLLNENDTDL SRLHAIQSSVRLSYRQAKWFGRMQYE 139
 AgamGr9f FCIIWMVPLYAYARCSRLVHALNSLQANDAE LG--HVIT----LSYRRVKCFACFIQLD 134
 AgamGr9g SCTLCLILPLQCYCKHRQLSSSLNALLKNDSILRQAILEMGKPLCYKEATIFARIMRD 141
 AgamGr9i TNTIYIILPLQCYCKHHQLANSLNALLINDSILRRLALLVGKEPPCYTEATYFSFIMRD 141
 AgamGr9h LVLTVLQMVVYGYTRKHVQLELLNSTIDIERELTVLLKR----KINYGVARFTKWLTIW 144
 AgamGr9j YNLLIFCIIINAVYNRDCFVQLLNSLFARDDWMLSVAMQ----GSSQQR-IASTQSTGGL 176
 AgamGr9l YALMLVVIWNAFYHRDSFVHLFNSLFKEDWLLQWVVMK----GIVTKLNLQTRHNGSM 167
 AgamGr9k YTIVPFCVVLNLFYRKRWDLLNVLFA-DDSVLDT-----TNVTMSGAYFLYI 159
 AgamGr9m FATVPICVVNSFVHRKEIVQLLNLFA-DQNVLDLGGTY----G-NKSVQPF SIANRYV 162
 AgamGr9n YVSVVMCTILNVLVKQRITRLMNVLFR-PDRILDR CSP-----TNSADARYNDNRKL 134
 AgamGr10 YVSVVICTILNVFVKQRITRLMNVLFR-PDRILDR CSP-----TNSADARYNDNRKL 134
 AgamGr11 YVSVVICTILNVFVKQRITRLMNVLFR-PDRILDR CSP-----TNSADARYNDNRKL 134
 DmelGr23aA LGFALLESVLKQKTHSQLEDLRVQTELQQLRGMFGRSR----HAAYLLPLIGVQFTC 134
 DmelGr23aB SHAFIVVTSFLDG---FRIKQDQLEPIAFEDSDPWLAFT----VLAMLVPTLGVEYLV 132
 DmelGr39aA DNAVILTTSVTQLLANLWLRSSQKSQVNLQRLSQVVELL-----QFEPYAVPQFRWLYR 131
 DmelGr39aB DRLVMVIALGILVQNAWLIWLQAPHLRIVRQIEFYRRNH----LANVRLLLPKRLLWL 132
 DmelGr39aC ALINIRSCSIVTMLIYTQLYIQRFRFVALLQSILRFNQIS-----GSHREEGRFAFYYYT 135
 DmelGr39aD EAVIFRSTCVVLFVYVILYAWRHRYRDLVQHILRLNRR C-----ASSCTNQQLHNIIL 134
 DmelGr98c IVAIATCNQLNILLNYGRGLIYDEIANL DLGIDKSSKNF-----CGKSHWWSFRRLRTL 149
 DmelGr98d VVAMFVWNQLNILLNFRRLARIYDDIADLEIDLNNASSGF-----VGQRHWWFRFRRLAL 147
 DmelGr98b YSIMAIANHLNMLINRRLGGIYKDIADLEMDMDEASQCF-----GGQRQRF SFRFRMAL 147
 AgamGr51 FILIVQIIFIRKKAHLVLLNEMFQLKXVLERMVARSM L--EFRLYRLFVKTAVDIL 169
 AgamGr52 FMIVVNVMLSKAQLRSLATLNLALAIRNTILQQWNCRVL---SREYQQLLYKVLAIMDA 165
 DmelGr94a NITVAVINYSQMIISDH-VAKVLSKVPFFDTLKEFRLD---SRSLYISIVLALVKTAVF 144
 DmelGr97a NVCVLFNYVTQWEKTLQ-IRFQNSVPLFKVLDLSDIS---AMIVVWARIVYGLLKVIFC 163
 DmelGr93b IILVMQFWFGEELINLVNRFQLFRMQSLTNSPKNRF G---DRAEFLLMFSKVFSLLFV 166
 DmelGr93c CIIVVQVCYEKELLRMIISFLRLFRVRRLSSLKRIGFG---GKREFFLLLFKFCILVYE 156
 DmelGr22d GVVSICTVHLRTLWRSKHLEEIYNGMLMLEAKYFC SN-----AVECPAFDGYVIQGVVI 150
 DmelGr22e SLSMVSIMLLRSFWKSGDIERTLNELEDLQHRFYRNY S----LEECISFDRFVLYKGFVS 151
 DmelGr22a SLITTLVTHLRTFSRSSELVEILNELLVLDKNHFSKLM---LSECHTFNRYVIEKGLVI 152
 DmelGr22b NVLSALIVHF MNFWGSRKVGECNELLILEYQDFEGLN---GRNCPNFNCVFIQKCLTI 151
 DmelGr22c AVFSCVVIHFLNFWGSTRVQDLANELLVLEYQQFASLN---ETKCPKFNSFVIQKWLVS 148

DmelGr22f TFFTISVLLLMNVVKSNTVVRKIANELLTLEGQVKDLLT----LKNCPNFNCVFIKKHVAA 152

DmelGr36a RMASGISAILNRWRQRAQLMRLVECVLRLFLKPKH-----VKQMSRWAILVKFVSGV 137

DmelGr36c RIVTGLFTLILRWYQRCKMMDLASKVVRMYVARPQ-----VRRMSRWGILLTKFIFGS 137

DmelGr36b KIVAGLITVLRNWLQRGQMDLVKDVIRLYMINPQ-----LKSMIRWGILLKAFISF 137

DmelGr59d RVVCFVLELVSRWSQRRTFVRLFNFSFRRLYQRNPD-----IQYCRRSIVSKFFCVT 137

DmelGr59a NYAAIAYTTLISRCYRDAMLMDLQRIVLEVNREMLRTGKK----MNSLLRRMFFLKTFTLT 135

DmelGr59b SFLVILYTVLSRGFRDTAFKEMQPLLLTLFREKRCGFKGIGVRRSLRILLFVKFFTTLS 140

AgamGr26 YSMENGVMVVLIGCHYQRDCYRHYGEQLLAVAVDLSL-CGGTVDFPRIETIFNRVLACI 155

AgamGr27 NVIVNVIVLFAMLECCQSRPFYASILKELFELGKNLHD-CDASINFPHVEAITDRLLVCA 156

AgamGr29 TAIQTSTMGYILLVYQFRFNFRHYFFDRLVGVLEQFGQ-TDINIRLGALQTNIRLLPII 160

AgamGr31 ALLQMGSLSYVLLVYQFRSSFRHYFFDRLVGVLEHFGR-RDIDKSLSALQTNMCRLLIAS 160

AgamGr30 NWLKIVTVLVAVLRSQTSTAYFRETVNSLVQIMVQYDQGWRIERKLASVATVSKRLSVVF 159

AgamGr32a NWLRVVMVLIALVGPRLSGRYFRETIDTLVHIMKLFDRATKIESILTAISVITNRLLLLY 159

TcasGr2 TGVMASLLFLNLAKRWPKFVKDWCVDATFASYGWP-----KGLNKKLNTLTVVFM 145

TcasGr9 TGVMASLLFLNLAKRWPKFVKDWCVDATFASYGWP-----KGLNKKLNTLTVVFM 145

TcasGr7 SGLASGYLYLKLAMKWPRFMKDWCSCVEVMASYGWP-----AGLNRRLNVLLAVFMS 162

TcasGr30 SGLASGYLYLKLAMKWPRFMKDWCSCVEVMASYGWP-----AGLNRRLNVLLAVFMS 162

TcasGr29 SGLASGYLYLKLAMKWPRFMKDWCSCVEVMASYGWP-----AGLNRRLNVLLAVFMS 162

AaegGr64f VIITAMIEFIIILARNWPLIMQRWTADEDFVLSNPY---ETG-QYLPLESLVKRVAFTIIF 118

AaegGr64a3 VIITAMIEFIIILARNWPLIMQRWTADEGVFVLSNPY---ETG-QYLPLESLVKRVAFTIIF 118

AgamGr14 IIVFFMVELMLLARNWSQIMGRWYTDAPFRTPDY---RPPSRTLPPFRKVVHLLAFGVMF 182

AgamGr18 VVYLSAWLFFFIALRWQSILGAFSRCERSFLSDHYRRQSK--GRFALGWKIRFTGFAIFA 153

AaegGr64d FNYIITVFLLLIAIQWQKVLKEFANCERLMLKDAYTKLTERVTRFNLAWRIRMAVIAGIIV 185

AgamGr17 LNLSGAIVLLAIAARWRTIMEKWRSLLENFLHPPY---AERRFWSLKRVAAGSTMVV 143

AaegGr64c LNFSGSVCFLI IATKWRNIMLNWKMYYEVEFLHKKPY----LMK-GRSLKFKVVMVGGGILL 168

DmelGr64c ICIFCFGVFLLSRRWPYIIRRTAECEQIFLEPEY---DCSYGRGYSSRLRLWGVCM 147

DmelGr64d ICIFCFGSFKLSRRWPHI IRETALCERIFLPCY---ANQEGLNFTFRLLRWALILLV 156

AgamGr20 MCTLLQLLFVRLAQAWRGFMVYWAEREEMFFARPYG---AIN---LRRKVI GLAVCILT 174

AaegGr61a VCATSAVLFWALAKEWQFVTVWSETEVERVFLRKPFR---GKA---LRSSIRRTAVSVLT 168

AgamGr21 DACLINVLFLNLATKWRSVAMKWEVDDTFNRPPYH---MQS-WSLRKLRLGVTSFTLVF 196

AaegGr64a DGCINVLFLNLARQWPLMMYWHTEVKDLPQYKTQ---LTK-WKMGHTISMVMLLGM 209

DmelGr64a CVLSAYVVFIRLAKKWPAVVR IWRTRTEIPFTKPPYE---IPK-RNLSRRVQLAALAIIG 191

DmelGr61a VGMVNWLNLFVGFARSWSHIMLPWSSVDILMLFPPYK---RGK-RSLRSKVNVLALS 174

AgamGr15 YNLYAMYRFGRGQRW PALMVKWARVDDSLPPQKGL---FER-AVLAYRIKLC SIMVMA 183

AaegGr1 YNLYGMYCFVRVAQKWVPLMQWFNVEQLLPQSSNI---IER-GKLANKIKLISILVIT 188

DmelGr5a SILIASWQFLNLAQLWPLMRHWAVERRLPGYTCC---LQR-ARPARRLKLVAFVLLV 185

DmelGr64f SVLLLVIVALNLARQWPLMMYWHTEVKDLPQYKTQ---LTK-WKMGHTISMVMLLGM 209

DmelGr64e SIFLISLSFFQLARKWPEIAQSQWLVEAKLPPLKLP---KER-RSLAQHINMITIVATT 202

AmelGr1 TNLIASFLLK LAMRWPCMLMTWEKLEKELSRHRK---ISK-ISLSMKFKIVTIVVMT 129

AmelGr2 NSLVGSILFFSLSSRWVSLQYEW RAMERYIDS--NS---TEP-TRLRWKFFIISTMVLV 217

AgamGr16 LNL L I S I N F A V L A R S W P Q L M S R W V Q L E Q S L P D Q P R L --- S A C R R N A R Q V G L V A T V L L T 158

AaegGr64e I N L S I T I G F T V L A R R W S A M M T E W E N T E Q S L P F R P Q L --- T A S N R R V R R K V I T I M V T L M L 176

TcasGr6 -----NLQFPLLSTLIIIIISLGCLI 138

TcasGr26 -----NLQFPLLSTLIIIIISLGCLI 138

TcasGr33 -----NLQFPLLSTLIIIIISLGCLI 138

AgamGr23 PHFWIPFVGWGVAKQVAIYKTMWGAQVRYRYVTGT---SLQFPHLKLLIVFLSIGCLV 239

AaegGr21a PHFWIPFVGWGVAKHVAVYKTMWGAQVRYRYVTGT---NLQFPHLKLLIVMFSIGCLV 231

TcasGr10 PHFLLPVAAWTNGTEVAKFKNMWTRFQLKYYQVTGT---PIIFHNLTILITYSLCVISWA 187

TcasGr39 PHFLLPVAAWTNGTEVAKFKNMWTRFQLKYYQVTGT---PIIFHNLTILITYSLCVISWA 187

AgamGr22 PHFLLPVASWRNGSEVAKFKNMWTRFQYKYLIVTGK---PIVFPKLYPITWVLCIVSWS 212

AaegGr21b PHFLLPVASWRNGSEVAKFKNMWTDYQYKYLIVTGK---PIVFPKLYPITWVLCIVSWS 212

DmelGr21a TNFLLPVASWRHGPQVAIFKNMWTNYQYKFFKTGTS---PIVFPNLYPLTWSL CVFSWL 213

AgamGr24 P I L I I P - L M W Y E S R K V V S V N G W V D F E T V Y R E T T G R --- A L E L R - L R T K A Q V I A I L L P I 138

AaegGr63a P V L I I P - L M W Y E T R K V S L L N Q W V D F E A I Y R K T A G R --- E L E L S - F R T K A L L I A I L L P V 203

DmelGr63a P I M I I P - I L W Y E A R K I A K L F N D W D D F E V L Y Y Q I S G H --- S L P L K - L R Q K A V Y I A I V L P I 232

TcasGr3 P I I I N P - L V L Y E A R K L A N V V T D W V N F E R I Y K L T K K --- K L S V F - F G N K P V I L T V V L P L 194

DmelOr83b T A W T T I T F F G D S V K M V V D H E T N - S S I P V E I P R L P I K S F Y P W N A S H G M F Y M I S F A F Q I Y Y V 206

AgamOr7 V A W V T I T F F G E S V K T V L D K A T N - E T Y T V D I P R L P I K S W Y P W N A M S G P A Y I F S F I Y Q I Y F L 204

HvirOr2 I S W V T L T F F G E S V R M I T N K E T N - E T L T E V V P R L P L K A W Y P F N A M S G T M Y I V A F A F Q V Y W L 207

TcasOr16 I A W T G I T F V G D S V H N I K D P E N E N L T I T E P I P R L L V K A W Y P W D A M S G M P Y I T L V F Q I Y Y V 306

TcasOr22 I A W T G I T F V G D S V H N I K D P E N E N L T I T E P I P R L L V K A W Y P W D A M S G M P Y I T L V F Q I Y Y V 345

AmelOr2 I S W T T I T F I G D S V K K V I D P V T N E T T Y Y E - I P R L M V R S W Y P Y D P S H G M A H I L T L I F Q F Y W L 204

TcasGr31 E H L L I Q C Y I A V S I F G S S F E A D L R Q F Y K T A Y S A I F T ----- 79

TcasGr35 I V V I L K L I L A K Y R Q Q D V T L L Q I T K A K N L L Y S K Q ----- 90

DmelGr59c R I S A V L L S L I T R W Y Q R S R F I R I W N Q I L A L V R D R P Q V V R G ----- R W Y R R S I I L K F V F C V 139

DmelGr92a S I P N V A V I L C Y H I F R G P E I I D L I N Q F L R L F R Q V S D L F K T K T P G F G G R E L I L I L L N L I S F 151

DmelGr28a G I L A M S T I F G F A M F K R Q R L V S I Q N N I V V D E I F V R L G M K L D Y R R I L L S S F L I S L G M L L F N 154

DmelGr64b V C L L E H L F F W R L A I Q W P R I M R T W H G V E Q L F L R V P Y R F Y G --- E Y R I K R R I Y I V F T I V M S 140

TcasGr71 S C Y T V L A P V L C K R Q Q Y C Q L M S K L L G N H Q L V Y N C H T F G ----- R F L A P N L T Y L L V A L Y S 129

AgamGr19 D V I I I M L L L L R V A Y R W P T V V P K W E Q I E S L E V M Q Y N A R Q Q N A R S C R R I R A I A L L L I V L G F A 140

AaegGr64b FWMFFATVEHCLASSVQVYIQYQESLRNCNWIYSNAMKN----- 115
 DmelGr93d SIIHLKICHGPEVTKLVNQYLHIFRLGLTDIRRRSQFGGRELFLLLILSVCCQIHEYVFI 155
 TcasGr34 DFIAYFFNFWTILFSRSDFFQQFECDNKPKLRHY-----LIFIFVNVFFVWVIL 111
 TcasGr43 NYVVIVVTFYKRRWTWRLKLNLESKAIKKTGR-----YCYYYAFFGVHLYAG 128
 TcasGr47 NVYQILAYNFWKKKYWSEFLANLKLKGRKIRKN-----LYYLLLVINVLYV 112
 AmelGr3 VMSLTVVCIVGSPFRWKYLQVLVINKLIEVDEKIGVSSAKVARRFTIVLTICLSYLWFNS 163
 AgamGr32b SILQTLTGNMMIGCEQRRAEYEGYFEEVLHLMKETAHQPDCCTTIWYRHVTKVLLALYC 159
 AgamGr50 MYVVTLTSLRKLTLANRERLCQLLNALLVLRQVLQGSTKAATFQQGLARSLLTKLIVFDL 145
 TcasGr20 VAVTVLAGILTTPFKLPYFWKMLTGFQKIEQVLPHPHAPPEEKRSFWAVTIFVLVAASVI 152
 TcasGr79 SVIYSLLRVKRMMRSWYLLTNLTYNNTNRKYWLN-----VCCLNLSIVTIFNF 131
 TcasGr15 AYHVFVTMMTLKRHKWSTLFEILLKLESKDLRSRTFYG-----FVIVAHLLFLVIFVNI 133
 TcasGr60 KIKRMVLLHKTIVRVAKSLNQVFAPQLLLWVLLG-----VMVVTVDLHVFFFTLFN 127
 AgamGr38 CYASTIYGLISCFINRHDWKFYNEAYAVDNMLEELG-----ERTNFTRSFALFVAYY 152
 TcasGr51 TSVVKSLESRYADLNENFLQCQDEKFEFVYHRILGETVDLFNLSLFGYQTLITFHIGS 384
 DmelGr39b VIIQVMVHYDDYFRFCREMKYGLRLQCELKIHVG-----RLKWQSYAKILALGIGF 130
 AgamGr28 NLCITVQTMLRGYSETVRYSQLERIVTVAATVSSSE-----WTELLYLRLRLYWFGI 145
 TcasGr61 SFLMHQGETQFVAANVILKTRFKTINNILENLWAKKLIVVKDKKRSDEQITIDICMRC 238
 TcasGr50 GITIQTGLISNCINAKQITIFFDKIQRIDKQFGLLGSINYYRISIFVNLAILGVGF 137
 AgamGr12 LPVTIVYMHLLIAFTKRVRI TALFNALFTDRSWRFFGDRSWSWYESSRWLGRFATAITIGT 143
 AgamGr36 GAIVMIVLAIDNFMRRDATCQIIGELFKVDYLRQIRGHQLDHRQYVTLVRLVILFVLMLI 150
 AgamGr48 RYGTVVLCFYQLLRHEVSLHRVQRFVVIKSVIVRCNSRSYASVQRMVYALVAKMLIAD 145
 AgamGr49a IYPCAYIVLLTDHEFPILALSYYIIMLQFTLNYYIVGVLYLHVLFDPAPLLHVLNELIER 162
 AgamGr49b LALIYYHLLPARPVIRNIFNGFVQLFRTLNGAGCHRWKGKSTKKNVLLKALKMLICDITLL 149
 DmelGr2a MRVAHLAALLEALWQRQAQGFFAELGEIDRLLSKALRVDVEAMRINMRRQTSRRAVWIL 154
 DmelGr32a CILTYTLTVFVCAHNTTSMRLIMNEILQLDEEVRRQFGANLSQNFGLVKFLVGITACQA 196
 DmelGr68a CII SYTMVVLSSVQNASRHFRTLHDIAKIDEYLLANGFRETYSCRNLITLVTSAAGVLA 147
 AmelGr7 IITRIKAQQLRTIVSLVELSDQKMNIGLSPKHRCLMMYQIKRYIFLGIYTLFVVLIIYH 151
 AmelGr8 IALFGPAVFCISYASNRSTLQAIQRVQHVSHALSTEIFSKLIKTLIKDMSFFMPLGTFI 159
 AmelGr9 GIITMHILSSTRLCMIQNLLKISSILSEKDFNDLAKR-----IHKKDILGFLFLIH 151
 TcasGr57 NVSLRIILVFSKGVKISFFNQGYLEKQEIFNCCSKSFRMNFIFNLVLLLLFVDAY 133
 TcasGr41 TSTSILLIVNAVVFVEKIRIRTLIKLSEIKENTRLAEK-----QARISIBELVAVHLV 139
 AgamGr34 AILLMPAFRLRNFAEVTRALRKLEQDLQDAIPTNCRQMARWNIIGIVVGTVTVLLLATAF 148
 AgamGr35 AWVVPQLKADELGSILDGFLLDRELSSYNVHEVAGYKRVSLFLRYGVVLLALMSLTVYD 177
 AgamGr39 QLIALIGIPIITNYVQAYKYDRLIYCIAEVDKGLEELGFKHDYVSEYFYSTVYLSVTLGLQ 149
 AgamGr40 GIIISLSISLGNFRVVGMRMFKTLDGVDQILKRDGRLNHQLNHLSCIYMAVPILVN 144
 AaegGr28d VFLFSLFMAPKYRLRTQGMFEILANIAELDGLRSLGLHIDHQRHFFISTVSAGLWMTMG 147
 AgamGr42 TLILYLLAGFNCSVSATLVLRLHVALHVMVQLVEEADFLFSKYFYEIQHSHHLLVCFVALL 163
 AgamGr41 PFAMMLFVPWIFLFRKTKIFYISRDLDFDALVNETFLCFVRTSCFLFSAIFLFLQIAK 160
 AgamGr43 GVLATIICYASLWRTDRMKCIYIEGIQGSNVKINDRYQFRNMQIPIKYSILVPSIGML 153
 DmelGr33a VKHSVAYHFTWFLFCVFTFALYYDVRSLYLTFGNLAFIPFMVSSFPYLAGSIQGEFIY 185
 AgamGr44 VLQTFLSAVVRRYHKRYEIAQLMRDLFQKRELFSAATELSQRWIKGHILRKTITISQLIVT 148
 AgamGr13 CVLIAVQQLLFLETYRQLLTDLLAGVRLARRTTVALGEQVQLLVQLVLLPCATYTLHVS 144
 AgamGr45 GCILVLGIVMVSILVRQPAFSLRILQVLLSVDRAIPEMVRTAGLSAITKVVNNIIVLNRNL 182
 AgamGr46 NFVSVIVIDVNYRYSGLIFLFRKVALANHRSLTAIVLGVLLLDEQIADRLSVPKHGQW 164
 Dmelr93a VSILAVISFVIQARGENQFREVLRNRYLALYQRICLTTRLRHLFPKTFVVFLLKFFFTLC 159
 AmelGr6 NYLVAMHDLIFTIFTRKTFSRIWNAQQDFDERLSQLGYPRKETKIKIAAWILLASQIWIW 199
 AmelGr10 CLFTDASVTTLWNWKIRSVLSQLRNFDRATKFRDFSKG-----NKLRIICHVTMFVSFS 135
 TcasGr28 AFVMGLFCILKFALDGLMLDKTGICVSNVDFVH----- 111
 TcasGr40 HSFMTSVLFSQVASRWPLFLNEWTKIEINLLKHYQS-----TTDLHKKIRYSAFGMIF 153
 AgamGr3 GLLTIFVTVADSWEFEVETHRSIWLRYRALATRNGLTILGLIGRDELARVLLRYFFAILTIV 153
 AgamGr4 LTLVSFAIFIDTVLQRNTHRLVWEKIALIRLSARKVYVERFTRHYLWKFYGYLAVCAFLE 177
 AgamGr6 PLAVPLVTLTSLKLRSTQKRIALLMQIDGSEIAHGAAPGCLERFNHQLADDIFSTMFV 173
 AgamGr7 TDRAASSLARARTHFRNKLLLFCAFCCAIELGILALVSDPVQLALWCLTPVSLVIIRLK 168
 AgamGr47 MNISLLALINEYIYFTVHIRRFLMIVNRLKQLLLGDTNESNETVLLDQNRKSKTPTIAY 163
 DmelGr8a GVLAIYLETLLSSQRHLANFWLHFKLGGQKTGLVSLRSEFQQFCRYLIFLYAMMAEVAI 145
 AgamGr5 IGLSILVMYVELFRTSDNICGWLELLYKAHQTLQRYGMVDHRRRLTRVMRLYVWFVLSGL 189
 AgamGr8 MVFTYYSFLFESGYQRGVLYKVDLELERLHNIFFPSAKWALQPAHLRTVALFVYMSWWE 134
 DmelGr9a YKMIHAWIALSALFECRRFRYLLLEELPPVKATS-----FIYRHLILEIILFA 122
 DmelGr59f YVVHIFSIMLLTWQCRNWAPKLMNTNIVTSDLNRAYTIDCNRTRKFRIRLQLFLVGFACLA 167
 DmelGr77a LLVCAFMTLWIFHCFKQAEIIGCLNRLKCRRLRRLMHTRKLDKSDMDCLATKGHLEVVV 174
 DmelGr85a VFFALLSSMGSCYQWQNRILAVLKEKHKQRDLRSHMGYRVPVRSKQNSIDYLLFALTVLLI 162
 TcasGr27 FTNIVNLTHLLETQYAKIRFENKQKIFDESIVIFER-----KVMKNFAILLIPTCV 134
 TcasGr48 IITILDIEILGYVNKAKFGKLLINLYTINYNFKESE-----RNDYQLLQVVFVFCY 149
 AgamGr1 VAIAFNVICTIRIAWPASQHSALQCAQLIAKVQEQIIMFQCSIESKRPFQLFWLWIAVL 151
 DmelGr10a TAIKYATVIVTYVANTVHFEAINQRCTMQRTHLEFEFKNAPQEPKRPFEFFMYFKFCLIN 154
 DmelGr59e LVYYAVLNRPLAHGAELQIERIITGLKKGAKRLVYKRHGQRTLHLMATTLVHGLCVLVD 139
 DmelGr10b QLLMAVTGTWHLFLFERHVCQTYNELSRILKHDLKLLK-----EHSRFYCLAFKAV 139
 DmelGr89a DVCISLALLGNHLWNRRELANLVNDLARLHRRRRLS-----WWSTLFLWLKLLLSL 137
 DmelGr57a STLVFGVTVISLQVFAARRHLGIYQRLAALDARLMSDFGANLNYRKMLRKNIAVLGIVTTI 154
 DmelGr47b CSVTYIEYCLSLDLQKDRHLKLVARMQEFDRSVLMVFPVHVQWNYRRARLKYWYGTIVVGF 152

DmelGr58a	RIMAMFSGVLLMWFRRKRILNLGENLILHCLKCKTLDNRSKKYSKLRKVRNVLFQMLLV	139
DmelGr58b	RAIAVVSCTGLWLRKHKIIQLYKYSLIYWKRFGHITRAIVDKKELLDQESLARIMIRK	149
DmelGr98a	GHAIVLELLWGNCSKDVRQLQAIHSQIKLQLGTSNSTDRVRRYCNWIIYGSILIRWLIF	143
AaegGr93a	NLLVTAVIYWRQFMCNERIQLLNRNFIRFADEHMCSTAIKCCQLWYQTVLLAYLMVSNAG	152
TcasGr19	IIFTVHFLLCITYFYFYAFIILLCVYFYFYAFIIFTVHLLFLLCIYFVVPFLFLLCIYFY	149
DmelGr47a	IGGTMACCVKSCWEKAQGIRNLARGLVTMEQKYFAGRPSGLLLKCRYIKITFGSITLLR	133
DmelGr58c	KLLTMLFLMSSVWIQRRLYKLGNDLMKMLHKFRFNLGNDRCNRCLCKGLLTSRFLVLT	143
TcasGr38	LCYLLARY-----VALALVILFSEILV	173
TcasGr46	LCYLLARY-----VALALVILFSEILV	155
TcasGr1	RIHLFVRY-----VFTSYLLFDYFVQ	154
TcasGr123	MVQSLGRV-----GVLVVIIGTLAIIA	155
TcasGr62	MVQSLGRV-----GVLVVIIGTLAIIA	430
TcasGr25	----QVEI-----IHNEILVTHNEIQT	61
TcasGr59	----QVEI-----IHNEILVTHNEIQT	236
AgamGr2	IAEIPLDY-----LEKEIFTVYTQRRK	161
AaegGr66a	KNDIPMNY-----LEKEIFTIRSHKRG	249
DmelGr66a	LDSSQPPQ-----YDSNLEYLYKELGG	259
TcasGr11	FSLLAR-----VPVMLMTISADFIQ	174
TcasGr55	FSLLAR-----VPVMLMTISADFIQ	174
TcasGr21	VTIVAT-----LTVTIIFFASYQYG	171
TcasGr56	VTIVAT-----LTVTIIFFASYQYG	171
AaegGr	TVNLAY-----ITISIAIVTSSGVF	175
AaegGr28a	IVLFSY-----FATTMSIVLISGFP	71
AgamGr33	IISTLY-----LVVCLAVFISSDTY	173
DmelGr28bB	LILGVY-----FVGVFRLLVSLDVT	175
DmelGr28bC	LVNVLF-----TGGTFSVLYSSEVA	202
DmelGr28bD	GVQLGY-----LISSNWMLLGNDRV	172
DmelGr28bA	LLDVTVL-----LTTGLVCLAKMEVY	184
DmelGr28bE	GSMVAY-----ITCSFLMISLRDVT	178
AgamGr25	ITGALA-----LDIWVWYRIADKIK	167
AaegGr43a	ITGALA-----LDIWVWYRIAEKIK	166
DmelGr43a	ISILVG-----LDVGTWMR IAQDMN	162
AgamGr37b	IVLG-----SFLFLLLVTIISTVT	161
AgamGr37d	GIVT-----SYMLLLAIHLPLIL	157
AgamGr37a	LIAI-----VLLIYIYGTIITCQ	171
AgamGr37c	FSLS-----YPFVCLAITFTILK	165
AgamGr37e	LMLV-----YPLMFVSMTGFVER	165
AgamGr37f	CFLSGIFV-----TSALVYAYKITVLN	165
AaegGr28c	VLIVSIVS-----PLIGSMVMNKYMHV	164
AaegGr28b	VIIIL-----LLTFVVIISTGFLVS	171
AaegGr28e	VIIIL-----LLTFVVIISTGFLVS	171
TcasGr14	HWVRSGLF-----ALITGNVLFYFPFLP	136
TcasGr49	HWVRSGLF-----ALITGNVLFYFPFLP	180
AmelGr4	YIFNLLFF-----VCLFKFIIFVALLF	164
AmelGr5	HIFNVLFF-----ICLFMLILLIILLI	164
TcasGr16	VFLIGVSL-----SFNLFGDLLTLFIK	159
TcasGr22	LLMVLVNL-----IFNTCGEVFSAWVR	80
TcasGr17	LLIFVMHL-----MFDTLGGLYSTWSK	155
TcasGr150	LLIFVMHL-----MFDTLGGLYSTWSK	155
TcasGr32	HYCLFVAS-----NCFWWSYQSYMSYI	135
TcasGr54	HYCLFVAS-----NCFWWSYQSYMSYI	135
TcasGr37	----FVVA-----NVLFQLIHVYTTVV	120
TcasGr53	----FVVA-----NVLFQLIHVYTTVV	120
TcasGr5	WFLPFVVT-----NIIFVLPHTYEAFV	131
TcasGr12	-LVQLILT-----QAIFLMFVSYNIYV	125
TcasGr13	-LVQLILT-----QAIFLMFVSYNIYV	199
TcasGr104	VSVQFFVY-----VILYILATVFLAYV	156
TcasGr45	VSVQFFVY-----VILYILATVFLAYV	156
TcasGr98	AYFQLVLS-----ISVYSSSVGYTQYV	154
TcasGr52	VNFQFGSI-----LALFGVVQIYIFSG	95
TcasGr105	PVLQFLY-----IFTYLSVTCYVTYA	152
TcasGr4	SSALVLAA-----MTTFHLYEAHGFS	147
TcasGr44	SSALVLAA-----MTTFHLYEAHGFS	151
AgamGr9a	TVCFHIIIF-----QVYIITKTHSPDEL	162
AgamGr9c	GVIFHVFF-----HAYYIKNKTSPTY	160
AgamGr9b	GMCLHLFF-----QVYIIVQYGGMGKP	211
AgamGr9d	GLLFHVFF-----HFYIIDEFRHFGR	166
AgamGr9e	SIACLLL-----SAGYTILYSFQP-E	160

AgamGr9f	GVLCCLLL-----STGYTIAFWYQG-Q	155
AgamGr9g	GIVCVSFF-----FCSYFIKSWSKC-N	162
AgamGr9i	GIACVSFF-----FCSYFMKNWVID-E	162
AgamGr9h	TIFFYVII-----MHTLYVFDHLRYNT	166
AgamGr9j	VCLIVLVL-----LYAMYNALFVNDHS	198
AgamGr9l	GTLALLVI-----LNSFYNFAYAANST	189
AgamGr9k	SVLSILLV-----TLELCNLFALETLS	181
AgamGr9m	KVLYAIVA-----LICFYNYINMIHTM	184
AgamGr9n	LVFVLFIL-----FGMCMKLSYKKEVE	156
AgamGr10	LAFALFIL-----FGIFIKLFHLKTAE	156
AgamGr11	AGLLFAML-----TMMSINMFYHRDMN	153
DmelGr23aA	DLVRLATN-----FGETVSPVFCISLP	156
DmelGr23aB	CSN--APE-----YAFRIRIYHLKTLT	152
DmelGr39aA	IWLLVCLI-----YGAMVTHFGINWLT	153
DmelGr39aB	I IATNVVY-----MANFIKTCIFEWLT	154
DmelGr39aC	HLSLLIIC-----MLNYAYGYWTAGVR	157
DmelGr39aD	YGMLTILC-----FGNYLHGYSTRAGLA	156
DmelGr98c	SIGLWMVI-----IIGVIPRLTLGRAG	171
DmelGr98d	SVGLWIVL-----LVGLTPRFTLVALG	169
DmelGr98b	CVGVWMIL-----MVGSMPLTMTAMG	169
AgamGr51	MQLLALYT-----FEDSTYTRVDSVG	191
AgamGr52	LLLFSLIM-----YYVTQDEVPTG-AE	186
DmelGr94a	PLTIEVAF-----ILQRR--QHPMS	164
DmelGr97a	PLITYITL-----ILYHRRSISESQWT	185
DmelGr93b	FM---AF-----RLMLSP-----WF	178
DmelGr93c	LYSEICQL-----WHLPDS-----LS	172
DmelGr22d	VVGLLAPW-----MVHFGMPD--SKLP	170
DmelGr22e	VLELVSM-----VLELGMSPNYSAQF	173
DmelGr22a	ILEIGSSL-----VLYFGIPN--SKIV	172
DmelGr22b	LGQLLSFF-----TLNFALPG--LEFH	171
DmelGr22c	IGLLLSYL-----SIAYGLPG--NNFS	168
DmelGr22f	IGQFVISI-----YFCLCQE--NSYP	171
DmelGr36a	VSNFLQMA-----ISMESLD-RLGFNE	158
DmelGr36c	ITDGLQMA-----MVL SAMG-SVDSQF	158
DmelGr36b	AIELLQVT-----LSVDALD-RQGTAE	158
DmelGr59d	MTETLHII-----VTLAMMRNRSIAL	159
DmelGr59a	YSCLSYIL-----AVFIYQWKAQNSWN	157
DmelGr59b	WLCVTDVL-----FLLYSTDALIWN	161
AgamGr26	ALFFAGVL-----TVDLLYNDLVVWRF	177
AgamGr27	VLYFSTSS-----LVDWWADYDPSCTF	178
AgamGr29	PLHIALVL-----AAYILHDQS--WGV	180
AgamGr31	LVFVTLVF-----SALVVRDHS--WSN	180
AgamGr30	LLDDFTIA-----TGLYFIVEG--APA	179
AgamGr32a	GLHALIIT-----VTVWISTEH--PVS	179
TcasGr2	I ALGEHWLSRYSWAKVFLVEHILVQTNKLVLALECNNTTA-EGFTYFLGNMSFAHIFALV	204
TcasGr9	I ALGEHWLSRYSWAKVFLVEHILVQTNKLVLALECNNTTA-EGFTYFLGNMSFAHIFALV	204
TcasGr7	LAL-----IEYILMQTNKLVLALECNNTS-EGFDYFFGKMSYSHIFSLM	206
TcasGr30	LAL-----IEYILMQTNKLVLALECNNTS-EGFDYFFGKMSYSHIFSLM	206
TcasGr29	LAL-----IEYILMQTNKLVLALECNNTS-EGFDYFFGKMSYSHIFSLM	206
AaegGr64f	FAFVED-----TINFISAYLLNVVHMKYCT-HAT--DFWRNFFRREHAYIVRFI	164
AaegGr64a3	FAFVED-----TINFISAYLLNVVHMKYCT-HAT--DFWRNFFRREHAYIVRFI	164
AgamGr14	LAFVED-----TLNFVSAYRLNELHIRYCP-HTA--GFWKNFFHREHPYVLRVI	228
AgamGr18	LALVED-----WLNYSAYQSNIVQIATCNRTNV--TVWQNFYLRHHPVFWHL	200
AaegGr64d	LAFVED-----FLNFYSAYQDNVQMDYCNRTI--SFWENFYIRDHPQVVFQYV	232
AgamGr17	LAFVED-----TLHVASVYYTNLQYFKRCD-NST--PFWTLFYQREHPKFFHYL	189
AaegGr64c	LAFVED-----LLHMLSCCRTIEVYIERCD-NSS--SFWETFYTREHKSFTDYI	214
DmelGr64c	AALCEH-----STYVGSALYNNHLAIVECK-LDA--NFWQNYFQRERQQLFLIM	193
DmelGr64d	AALCEH-----LTYVGSAAWSNYVQIRDCN-LKV--GFVENYFLRERQELFSVF	202
AgamGr20	SALVEH-----VVYVINQAYNVYQESLTCQYNVT--NPLKLYGTLTFGSVYQSV	221
AaegGr61a	LALAEH-----IFSVANNIANLRREVHHCNWTIS--SPVKYFCLKTFSSTFDSI	215
AgamGr21	LAAVEH-----ILSIVSNVHNQMVIEKYCNWTE--PNYFQHYSLRRFANIYLN	243
AaegGr64a	LACCEH-----LLATINNLNDQWHEIEHCGWKENITDTRHFSLRKFSNMYSIV	125
DmelGr64a	LALGEH-----ALYQVSAILSYTRRIQMCANITT-VPSFNMYMQTNVDYVFFQL	239
DmelGr61a	LAVGDH-----MLYASGYCSYSMHILQCHTNHS-RITFGLYLEKEFSDIMFIM	222
AgamGr15	LALSEH-----LLSIVA--AVHYSNNCPAVHD--PYEAFFKSNFAFVYFYF	225
AaegGr1	LALMEH-----MLSIVA--AVYYTPNCPNIKD--PVKMFFKSNFLVYVYFYF	230
DmelGr5a	VSLMEH-----LLSIIIS--VYYD-FCPRSD--PVESYLLGASQLFEVF	226
DmelGr64f	LSFAEH-----ILSMVS--AINYASFNRTAD--PIQNYFLRTNDEIFFVT	251
DmelGr64e	CSLVEH-----IMSMLS--MGYYVNSCPWPDR--PIDSFYLSFSSVYFYFV	245
AmelGr1	FALVEH-----SLSIIH--GYFKAKECIEFHRE-QSILGVYFQMQFPQIFSRT	174

AmelGr2	LSLIEH-----VLSIFNNIDGYEWNESNSTFHN---FLEIYTLRSHSFIFDTL	262
AgamGr16	SGLIEH-----VLSKPA---GLHRAYRCPIPN---LLEAHYKQAFPEMFSFV	199
AaegGr64e	SALFEH-----ALAKPS---GLYRAYKCGIKD---LLEAHLMQAFPEMFSFI	217
TCasGr6	LA-----VFLLTLSALLEGFT	155
TcasGr26	LA-----VFLLTLSALLEGFT	155
TcasGr33	LA-----VFLLTLSALLEGFT	155
AgamGr23	CA-----IVFLLSLSFLLLEGFA	256
AaegGr21a	CA-----IVFLLSLSFLLLEGFA	248
TcasGr10	VG-----IGIMLAQYYLQADML	204
TcasGr39	VG-----IGIMLAQYYLQADML	204
AgamGr22	LS-----LVIIISQYYLQPDFQ	229
AaegGr21b	VS-----FVIIMSQYYLQPDFQ	229
DmelGr21a	LS-----IAINLSQYFLQPDFR	230
AgamGr24	LC-----SLSVAITHVTMVDFK	155
AaegGr63a	LS-----CLAVIITHVTMVEFQ	220
DmelGr63a	LS-----VLSVVITHVTMSDLN	249
TcasGr3	LA-----CGVMVVTHTITMAHF	211
DmelOr83b	LFSMIHSN---LCDVMFCSWLIFACEQLQHLKGMKPLMELSASLDTYRPNSAALFRSL	262
AgamOr7	LFSMVQSN---LADVMFCSWLLLACEQLQHLKGMRSLMELSASLDTYRPNSSQLFRAI	260
HvirOr2	LFSMAIAN---LMDVMFCSWLIFACEQLQHLKAIMKPLMELSASLDTYRPNATAELFRAS	263
TcasOr16	FFSLAHAN---LLDSLFCSWLIFACEQLQHLKEIMKPLMELSATLDTYVPKSADLFRAP	362
TcasOr22	FFSLAHAN---LLDSLFCSWLIFACEQLQHLKEIMKPLMELSATLDTYVPKSADLFRAP	401
AmelOr2	IFCMADAN---LLDVLFCSWLLFACEQIQHLKNIMKPLMEFSATLDTVVPSNGELFKAG	260
TcasGr31	-----VIDFSLCKAILVH	92
TcasGr35	-----IVTILKTKSNIFI	104
DmelGr59c	LSDSLHTIS---DVSAQRKRITADL	161
DmelGr92a	AHEQTYLW-----FTIRKGFWRFLID	173
DmelGr28a	VIYLCVSY-----LLVSATISPSFVTF	178
DmelGr64b	SALVEHCLLLG---NSFHLSNMERTQCKINVTYFESIYKWERPHLYML	186
TcasGr71	GYVWT-----DILFGYFREYLEA	148
AgamGr19	EHMSIG-----KTVNARVYEARTCHWNYSNLPEYY	171
AaegGr64b	-----YAHRYAYIFNWM	128
DmelGr93d	LVIASRLCG-----FQHIIWVSYTYVF	178
TcasGr34	MSNYAFTR-----IILLKSLEIIVIID	133
TcasGr43	VVIIYS-----ICVQTEKSVDFLC	148
TcasGr47	LTLCY-----AVYYWRQYEDFWH	131
AmelGr3	IIDFYTN-----RKTVDNKAMTGKGPIN	188
AgamGr32b	IASLTVPIV-----MTTILWDIATIPYVM	183
AgamGr50	GMMVLS-----AAFFRTFIELKQSL	165
TcasGr20	FFDVVVWG-----LSASDLGVFFKRFL	174
TcasGr79	ATKKLEQF-----IVRFMKYHFFGTLK	153
TcasGr15	WCWIVEIGG---WLAFTKQLLIKFEV	156
TcasGr60	KLLGQYP-----VGIVGVKNASLFI	147
AgamGr38	GTAIG-----MCVLVIAVMYSEN	171
TcasGr51	QLVLHTVKTVLKTMTSTFSDITFMRTVWKFNFIFLITPFYFNENTIHSKLCCKLYATFLI	444
DmelGr39b	LVTVLP-----SIYVALSGSLLYFWS	151
AgamGr28	FFTLTSGVG-----LAVAHLPFGGIWST	168
TcasGr61	HDQLCDMCGAINMLFGFPPIIGCLIQFNITVFSFCYCYNSKMTKDGVYNTLFFIVYVSL	298
TcasGr50	VLVFPDY-----VFFVENEPIYLIF	159
AgamGr12	MLYLS-----LLILSQYNSSTKFP	162
AgamGr36	ATGTVFALG-----MSTISEFSIRNHLI	173
AgamGr48	VGLCTLFAMN---SGIKRHETSAHVYR	169
AgamGr49a	TRALLRHIDP-----PAGEVGRRLFFK	186
AgamGr49b	CALFVLYFG-----QFFIQDGDIIQSQILW	173
DmelGr2a	WGYAVSQLLILG---AKLLSRGDRFPYIWS	182
DmelGr32a	YIIVLKIY-----AVQGEITPTSILLA	219
DmelGr68a	VAFYIHYR-----SGIGAKRQIILLI	170
AmelGr7	CHYESTTP-----ALIKLCLSILPNIP	173
AmelGr8	LYMIVNYD-----FCVFLFCWYSFFG	181
AmelGr9	LPNCSKSD-----IHVTLRNVTHLYIL	173
TcasGr57	LWISSVGR-----MFQYYIGRSFTYYVC	157
TcasGr41	LAFLYS-----FDLFANGITFGWHT	159
AgamGr34	DCYVTVFR-----GFIRVDYWIITILP	170
AgamGr35	GFVSFVQLT-----TVEVWYWLSSHQLPFI	201
AgamGr39	LSCLTGTAFTN---PFLVDYDTWCNFTALVGFI	179
AgamGr40	FFLMISTF-----FIVQDQSSQOFTAT	166
AaegGr28d	LFVLIITGTN-----RTNEDWLDLSEMFDPWIS	175
AgamGr42	LGSFACQG-----LLILNDYTAGKMLV	185
AgamGr41	YNYPAN-----YQFFHMFSTLFATA	180
AgamGr43	IILSVCEAYADHG-----YYFTIITIVYPLWMMFH	182

DmelGr33a	HVSVISQR-----FEQINMLLEKINQEARH	210
AgamGr44	SSFVLA VL-----AVLDAGEETAIGSE	170
AgamGr13	VYITLIEWAEIS-----IVQAVLFMVSLIPNIA	172
AgamGr45	LMLILGVG-----VKAVLEVFNCLMYI	204
AgamGr46	CRFICLHMT-----FVFLCIGFAEWYNCI	188
Dmelr93a	GCFHEIIP-----LFENSHFDDISQMV	181
AmelGr6	TAVNQS-----GMFAFEETWTFNVS	219
AmelGr10	YWAIVG-----YFTYRIEAKVPIFH	155
TcasGr28	-----FYYPVATMSFYVLN	125
TcasGr40	VALLEHCFS-----MLNYVYSSKCENNS	176
AgamGr3	AVCALVEF-----TIYNQLTPGTQWH	174
AgamGr4	AQVLYLAWD-----DPSALAYLWVIMILH	201
AgamGr6	FNVIPAVS-----EFFIISRISGNPVW	195
AgamGr7	HLHHAYHIDR-----LTARFDILREQLES	192
AgamGr47	DEIFTVYG-----RGAGGPRGRKIGDA	185
DmelGr8a	HLGLWQFQ-----ALTQHMLLFWSTYE	167
AgamGr5	YFVVNESY-----LYLCAEQMQTKRFY	211
AgamGr8	LTYAYWIT-----KSARSSNFTILFWVL	157
DmelGr9a	CN-----AFLVLSEYTIRGIY	138
DmelGr59f	IFFN-----IWKHFVVYRSIL	184
DmelGr77a	LLSSYLLSMAQP-----IQILKDDPEVRRNF	200
DmelGr85a	LRLSIHLAT-----FTLSARMGFNHPNC	185
TcasGr27	AMFIVP-----YFQDRREMP LIV	152
TcasGr48	FIYLFY-----VYIYYSVHEAS	167
AgamGr1	SAAYGFLLT-----FMVLTSKVLFVSQT	174
DmelGr10a	LMMMIQVCG-----IFAQYGEVKGKSVS	177
DmelGr59e	VVNYDFEFWT-----TWSSNSVYNLPGLM	163
DmelGr10b	YNFFHN-----FNFALSAIMHWGLR	159
DmelGr89a	YDLLCSVP-----FLKGAGGRLPWSQ	158
DmelGr57a	YLMAINS-----AAVQVASHGRALFL	175
DmelGr47b	CFFSFSIS-----LIFDTRCTCGIPS	174
DmelGr58a	ANLSILLG-----ALILFRIHSVQRIS	161
DmelGr58b	IILLYSAF-----LCSTVLQYQLLSVI	171
DmelGr98a	IVVTIYSN-----RALTINATYSELVFLA	167
AaegGr93a	LWLNMNPT-----YRLYSNGDLFLSVV	174
TcasGr19	YCAFIIIFT-----VHLLFLLCIYHFFC	171
DmelGr47a	IHLIQP-----IYMRRLLPSQFYLN	153
DmelGr58c	QQLLTRDS-----VVNCSNSSSLRQAMV	166

TcasGr38	IVSE----Q-----EWSFSTGLLVMIFNSALS YKASEIVVMLRSRFAILN-----	214
TcasGr46	IVSE----Q-----EWSFSTGLLVMIFNSALS YKASEIVVMLRSRFAILN-----	196
TcasGr1	RNQEYKYYQ-----ILSHLSGIFFTFVNVAQC YLTTLELVMLLQTRFVILN-----	199
TcasGr123	NLNG---DT-----MIVEAMAYILLAMNSAVCHQTIELVKMLKIRFVILN-----	197
TcasGr62	NLNG---DT-----MIVEAMAYILLAMNSAVCHQTIELVKMLKIRFVILN-----	472
TcasGr25	IFSVPLLMK-----IASQFVGIFCSLYFCIFGYIYDDEMVPVQN-----	100
TcasGr59	IFSVPLLMK-----IASQFVGIFCSLYFCIFGYIYDDEMVPVQN-----	275
AgamGr2	QLTVPTPPK-----KTNFNATTKVITVKPYQPKQPAS PPLKPSVTPPPPHRNGAI	211
AaegGr66a	NAVQPIMPM-----KPHGNQQGKII SVKPF EKRLTEEKVLAQKR-----	288
DmelGr66a	MDIGSIGKS-----SVSGSGKNKVPVVAHSMNSFGEA IDAASRKPPPP-----	302
TcasGr11	Q-----IMLFVS----ALIKAFSKYQFVVLVLQLQHRFGKIN-----	207
TcasGr55	Q-----IMLFVS----ALIKAFSKYQFVVLVLQLQHRFGKIN-----	207
TcasGr21	TK---TYSL-----FIVFMTVILPYFINLLMELQYCHYLNILRVRYQLLN-----	213
TcasGr56	TK---TYSL-----FIVFMTVILPYFINLLMELQYCHYLNILRVRYQLLN-----	213
AaegGr	I---CGTT-----WAAFF---LPFMMTMITSLFVCIVNQSKHRFYLLN-----	213
AaegGr28a	F---SITA-----WMSFM---LPFMMISMITVLFVSLLNQSR CRFQQLN-----	109
AgamGr33	P---SVTT-----WMAFL---LPYFMMSMIVLFLCFVNTKHRFHLLN-----	211
DmelGr28bB	P---SFCV-----CMTFF---LQHSVVSIAICLFCVIAFSFERRLSIIN-----	213
DmelGr28bC	P---TMAL-----HFTFL---IQHTVIAIAIALFSCFTYLVEMRLVMVN-----	240
DmelGr28bD	P---IYTA-----IVAFY---VPQIFLLSIVMLFNATLHRLWQHFTVLN-----	210
DmelGr28bA	A---SWQL-----TFIFV---YELLAISITICMFCLMTRTVQRRITCLH-----	222
DmelGr28bE	TF---SISA-----VISFF---SPHFIVCAVSFLAGNVMIKLRIYLSALN-----	217
AgamGr25	KENSNSAN-----VLGYFPFYCLYIILMMFHVLFAQAALGIGNRFRHLN-----	212
AaegGr43a	KENQDSGAN-----VLGYCPFYALYIILMMFHVLFAQSALGINRRFRHLN-----	211
DmelGr43a	IAQSDTELN-----VHWYIPFYSLYFILTGLQVNIANTAYGLGRRFGRLN-----	207
AgamGr37b	SRLESFDTP-----ALDVAALAISSFCFLQIVQFTVMVLLVLSRYQTIN-----	206
AgamGr37d	ELVPHIEPS-----LKEILPSAMFGLCFLLQICQFLLFLLVLH DRYCAIN-----	202
AgamGr37a	LHESSCNMQ-----ILFVFIYLLFVNSYALMMLQCTAFMEIIRTRYKLIN-----	216
AgamGr37c	WLNWNQLIG-----HVFQFVRLLYFTTYVHLWLQATLAAMLVLSRYEALK-----	210
AgamGr37e	WLPLFGVQV-----HAFNLVRFLYFYYSVHLWAQAAILTLFVLVLSRYIALN-----	210

AgamGr37f	NQPNFDGRW-----YYNMF5FVYNAAFPTITSYFAIVLWFLLVRFQRLA-----	210
AaegGr28c	YRGLVDGLG-----VFYVFSRFLYSCGYVQVWLQSTVLLLVWSRYVALN-----	209
AaegGr28b	EMSSGFGMP-----ISMALIFGCFYVPSLFTHNLSMIGYLVSYRLNHLN-----	216
AaegGr28e	EMSSGFGMP-----ISMALIFGCFYVPSLFTHNMSMIGYLVSYRLNHLN-----	216
TcasGr14	SDVSYNLF5-----FVPLVNVNLDHFLNDILSDICDKFEQINQHFRRQIKS---	183
TcasGr49	SDVSYNLF5-----FVPLVNVNLDHFLNDILSDICDKFEQINQHFRRQIKS---	227
AmelGr4	TEIIYFKPE-----PITLLGNLIPTIFAGLLFVQYFFVITLINEMFIKLNCI---	211
AmelGr5	TEIKNFNPN-----PLVLMASIIPLIFVGLLFIQYFFVLNLIYAI FVKLNCI---	211
TcasGr16	EELDLVWRE-----VCTFVVQVYPRLVVNTINLTFTLLMILEGRFRVINDG---	206
TcasGr22	-----CQDQ-----ILIFLVNWPRLIIGIMNSTLNLIFLLIQTRFEMINN---	121
TcasGr17	-----KSKQ-----VEYFLIHWPRLIISTKLLAHFLILTVLTKARFEAINN---	196
TcasGr150	-----KSKQ-----VEYFLIHWPRLIISTKLLAHFLILTVLTKARFEAINN---	196
TcasGr32	FANIMGLEF-----YKQFAIEYFQMYVLFVNFVAFVFFVVKMLLVRYRNL---	180
TcasGr54	FANIMGLEF-----YKQFAIEYFQMYVLFVNFVAFVFFVVKMLLVRYRNL---	180
TcasGr37	FTLLLGVD-----VKEYAFEYIQLYSQFIFYFLLFATLKILLGKYTQLK-----	165
TcasGr53	FTLLLGVD-----VKEYAFEYIQLYSQFIFYFLLFATLKILLGKYTQLK-----	165
TcasGr5	WTRIMGVAY-----FQYAVEFFQFYAQFIVYFLIYAVLEMLLQKYKTVT-----	176
TcasGr12	CQTVSNFEY-----FQKILLMIQLYYLYFDVIVISTFLQLFLEHYEVIN-----	170
TcasGr13	CQTVSNFEY-----FQKILLMIQLYYLYFDVIVISTFLQLFLEHYEVIN-----	244
TcasGr104	WICEMGVVT-----LQAYTLHLFCVLYVLLHFLTYNLSLGIKLRYYDDVN-----	201
TcasGr45	WICEMGVVT-----LQAYTLHLFCVLYVLLHFLTYNLSLGIKLRYYDDVN-----	201
TcasGr98	RIAAGKPLT-----LKL FALHEFYGFCYLWVLI L I C N I A L A F K Q R Y Q L I N -----	199
TcasGr52	FIVPSGVVY-----KIGYENLHQICHICELHTIFLVCNVLT V F K I R Y K D L N -----	140
TcasGr105	WSPID---H-----TESNIINDMCSLYIILQITLIVNYALALAKNRFKELQ-----	194
TcasGr4	YKCGIQYHI-----CNTVISATVCFMMLLMLEIWRRFITLNNYLTIVLGETWTSL	197
TcasGr44	YKCGIQYHI-----CNTVISATVCFMMLLMLEIWRRFITLNNYLTIVLGETWTSL	201
AgamGr9a	FLSVYIVDC-----TFMYFDVVI E L V L G L C D C L L L I A H L Q L E R L V W I V K N R D - Q A	211
AgamGr9c	FL-VYMVSC-----TFMYFDLVI E L V L G L C D C L L L I A R L Q L E R L V W I V K N R N - D T	208
AgamGr9b	FLPLYITSC-----AFMYVDLAMELV L G L C D C L L L I V R L Q L Q R L V C S A R N L E - R S	260
AgamGr9d	FVSMYIVSC-----FFMYIDLAMELV L G L C G C L L L V A Q L G R L A Q A A R E F D - Y G	215
AgamGr9e	AWYLYLTIG-----IYLYEDLCLSWLFGFYSTIMMHCVDQLSYAAHLLQED--HA	208
AgamGr9f	PWYMF LNIG-----IYIYEDLCLSWLFGIYSAIMLFCVAQLSCAA K L L Q S D Y Y H S	205
AgamGr9g	FVHIQLSVC-----IYLATDLALDWT L G L C C V M I L V G I A Q L S H I F D L L K I A S I R R	212
AgamGr9i	FVHLQLSVC-----IYLAMDALGWTLGLCCVVMVVGIEQLSHIIDL L L K A S D E R	212
AgamGr9h	FILMYIETL-----LLLYANNCIEFTIIICCTQMTLCRYLKDLMNALETKK---	213
AgamGr9j	MVLMDMIIL-----LRF CFMFLILELYRVCVRIIRKRMKQLQVLLTQMEEIN--T	246
AgamGr9l	IFKLYWLIL-----LRF CFMFMVVELYRACVIVIEERMKQLHSLL-QLTING--P	236
AgamGr9k	HKMLTTTFV-----LRYTGMIHFLYLFHMCVSMVGLRMEQLKMLFHHKQT-----	226
AgamGr9m	HTFLELTLI-----SRFLLTQYIYLYLVCVSMVRLRMQQLRVLFLDHQH-----	229
AgamGr9n	IKILAVMIA-----GRFLAIWVLI F V H R L H V R A I G Q R M E Q L R V L Y A S -----	198
AgamGr10	LKILRMMTA-----GRFFT I W M L I F V H R L H V R A I G Q R M E Q L R V M Y A S -----	198
AgamGr11	LRILSMSVA-----LKIFIGIGYLCI IHRVCVGAIGVRMRQLSILGKLSG-----R	199
DmelGr23aA	LMWLLRYRY-----VQLVQHVMVDLNQRSIHLRRSLLSMASGNDLWQP-----Y	199
DmelGr23aB	SFLALQVQI-----ISF ILEVMVNI R V R Q T K L Q L L I L A R E L S C R W P Q R K Q K P Q F	202
DmelGr39aA	TMQISRVL T-----LIGFVYRCVLANFQFTCYTGMVVILKLLQVQVKQLEHLVS	203
DmelGr39aB	DASRLFVIT-----SLGFPLRYLVTSFTMGTYFCMVHIVRLVLDWNQSQINAIID	204
DmelGr39aC	LTTIPIYLL-----QYGF SYLFLGQVVVLFACIQIILLSILKYYNQVVLK-NIKS	206
DmelGr39aD	TLPLALCML-----VYIFAFLLVCLLLMFFVSLKQVMTAGLIHYNQQLCQGDLS	206
DmelGr98c	PFFHWVNQV-----LTQIILIMLQKGPYCLFVLLVYELILRTRHVLEQLKDDL	221
DmelGr98d	PYLHWTNKV-----LTEIILIMLQKCTEYCVFVLLIYELILRGRHLLQSLDEL	219
DmelGr98b	PVFSTLLKI-----LTFEVMIMQQLKSLEYCVFVLI I Y E L V L R L R R T L S Q L Q E E F	219
AgamGr51	LASWLTFYA-----MMYF I A V I E N F I L A G V L I G A V M Q A M V N I G L K R L A R S R -----	237
AgamGr52	VVVGVTFSV-----FRYVFTALVNLVYVGLMIVSFNQGSINSKLTSLVDR-----	231
DmelGr94a	LIWTLYRLF-----PLIISNFNLCYFGAMVVVKEI I Y A L N R R L E A Q L Q E V N L L Q	214
DmelGr97a	SVTTTKTML-----PLIVSNQINNCFGGVLVLANLIFAANRKLHGIVKEANMLQ	235
DmelGr93b	LLTLVCDLY-----TSVGTGMITHLCFVGYSIGVLYRDLNNYVDCQLRAQ---L	225
DmelGr93c	LFATLCEIF-----LEIGSLMI I H I G F V G Y L S V A A L Y S E V N S F A R I E L R R Q ---L	219
DmelGr22d	VLNVLVSM-----VKLGTLLALHYHLGVV I I Y R F V W L I N R E L L S L V C S L R G N H	220
DmelGr22e	FIGLSLCL-----MLLAVLLGASHFHLAVVVFYRYVWIVNRELLKLVNKMAIGE	223
DmelGr22a	VYEAVCIYI-----VQLEVLVMMVHFHLAVIYIYRYLW I N G Q L L D M A S R L R R G D	222
DmelGr22b	ICLVLLSCL-----MEFSLNLMHYHVGVLLIYRYVWLINEQLKDLVSQKLNPN	221
DmelGr22c	VEMVLINSL-----VQFSFNCNIMHYIGVLLIYRYLW I N G Q L L E M V T N L K L D C	218
DmelGr22f	KILKILCCL-----PSVGLQIIMHFTEI I L V Y R Y V W L V N E T L E D -----S H	214
DmelGr36a	FVGMASDFW-----MSAIINMAISQHYLVILFVRAYYHLLKTEVQRQAIHESQMLS	208
DmelGr36c	YLGLGLQYW-----MFVILNMAMMQQHMIMLFVRTQFQLINTELQVIDEAKDLL	208
DmelGr36b	MMGLLVKLC-----VSFIMNLAISQHFVLVILLIRAQYRIMNAKLRMVIEESRRLS	208
DmelGr59d	ALRIWAVLS-----LTAIINVIITQYVATACVRGRYALLNKDLQAIIVTESQ--S	207
DmelGr59a	LCNGLLVNI-----SLTILFVNTFFYFTSLWHIARGYDFVNQQLNEIVACQSMDL	207
DmelGr59b	VLRFFFKCN-----TNNILEMVPMGYF L A L W H I A R G F D C V N R R L D Q I V K S K S T --	209
AgamGr26	ARSSAVYTL-----SNVINVLALLQYAYVLYVLYFCYYDTNRLLLASYNRHLLVRG	227

AgamGr27	LCHSVLYIL-----PNVINVLALYQYAALQLIVAACYRSVNSVLARYHDHQARP-	227
AgamGr29	LAKIVIFLA-----TQLMATSLTLLYLTFIFGTVSVLLRQMNDTLEGILVGPIS-D	229
AgamGr31	LLKVVYILA-----TQLMNSFTLQYLVFVGIVAVLLRQMNDTLELILYGTVVYD	230
AgamGr30	TLINLCYIP-----PFIATVINVLHYYALFGTISGIMSCSNDTLYGTIVGEGKDR	229
AgamGr32a	TLLNVSYLA-----PYVTIAVYIILLYRALLASIAGIVGCLNDNLRREITIQDRIDP	229
TcasGr2	EYDIFKALV-----LQITINLQITFIWYNDLDFVMLIS--TALAYRFGQIT-----	247
TcasGr9	EYDIFKALV-----LQITINLQITFIWYNDLDFVMLIS--TALAYRFGQIT-----	247
TcasGr7	DYNIVMALV-----LQFITLQHTFIWVFNDVDFVMLLS--TALAYRFTQVT-----	249
TcasGr30	DYNIVMALV-----LQFITLQHTFIWVFNDVDFVMLLS--TALAYRFTQVT-----	249
TcasGr29	DYNIVMALV-----LQFITLQHTFIWVFNDVDFVMLLS--TALAYRFTQVT-----	249
AaegGr64f	PYHPALGVA-----IEVVMRVAKFTWHYIDVFIICVS--LVLQRRFQQYN-----	207
AaegGr64a3	PYHPALGVA-----IEVVMRVAKFTWHYIDVFIICVS--LVLQRRFQQYN-----	207
AgamGr14	PYHPVVGWT-----IELTMRIAKFTWHYVDVFIICLS--LGLQRRFVQFN-----	271
AgamGr18	PFNGFTIAI-----TEWINRCMRYTWTYLDIFIIISFC--YGAQFRYEQIF-----	243
AaegGr64d	PVNIGSILF-----VEWINRCLRYTWTYLDLFIISFS--YAAQFRYTQIY-----	275
AgamGr17	PYSLPAVLL-----LELTHKIFLYVWTFMDLFIIFVA--LGLARRYEQFY-----	232
AaegGr64c	YSLPLALL-----LEFVHKVYLVWTFMDVFIISVVS--IGLATRFEQLF-----	257
DmelGr64c	HFTAWWIPF-----IEWTTLSTMTFVWNFVDIFLILIC--RGMQMRFFQMH-----	236
DmelGr64d	EYRAWMVFF-----IEWNTMAMTFVWNFGDIFLFLMC--RGLKIRFQQLH-----	245
AgamGr20	PYHLLTMY-----LLYTTISLTFIWTFTDLFIMLVA--TGIACRFGQLN-----	264
AaegGr61a	PYNLPVALY-----NEYVVVAMTFAWNFVDLFIIVLS--IGLTTTRFTQLN-----	258
AgamGr21	PYNSLSAVF-----FTYVSSALTMWNYQDIFIIMIS--IGLATRFQQIN-----	286
AaegGr64a	PYSTVSAVF-----FSYVSFALTYWNYLDVFIILIS--IAIATRFDQIN-----	168
DmelGr64a	PYSPIIAVL-----ILLINGACTFVWNVMDLFIIMIS--KGLSYRFEQIT-----	282
DmelGr61a	PFNIFSMCY-----GFWLNGAFTFLWNFMDIFIVMTS--IGLAQRFQQFA-----	265
AgamGr15	PYSTWRGFL-----TKFFNVICNFMWSYVDLDFVIVIS--MGLSHAFRKYL-----	268
AaegGr1	EYSEIRGFV-----VKFINVISTFVWSYIDLFIIVS--IGLSHTFRRLIN-----	273
DmelGr5a	PYSNWLAWL-----GKIQNVLLTFGWSYMDIFLMMLG--MGLSEMLARLN-----	269
DmelGr64f	SYSTTLALW-----GKFQNVSTFIWNYMDLDFVMIVS--IGLASKFRQLN-----	294
DmelGr64e	DYTRFLGIV-----GKVVNVSTFAWNFNDFIVMAVS--VALAARFRQLN-----	288
AmelGr1	SYSLWKGIL-----VDIINILSTFSWNFVDLFLILIS--IALTDQFRQLN-----	217
AmelGr2	NYNFVYGLY-----VFVSKLATFTWNFTDLFIMLVA--TGLAERYKSLN-----	305
AgamGr16	PYNPYIGFL-----AQTITSLTIVYWNYVDLFLISVS--VGLRTNLAQVN-----	242
AaegGr64e	PYDIYVGFV-----AQVVTSVLTFYWNYVDLFLIVLS--IGLRQSVRHVN-----	260
TCasGr6	LYHTTAYLH-----IITMINMNCALWYINCRAVGNAS--TALAESFQNVLVPT--	201
TcasGr26	LYHTTAYLH-----IITMINMNCALWYINCRAVGNAS--TALAESFQNVLVPT--	201
TcasGr33	LYHTTAYLH-----IITMINMNCALWYINCRAVGNAS--TALAESFQNVLVPT--	201
AgamGr23	LWHTSAYYH-----IITMLNMNSALWYINCRGIRVAS--SSLSRCFR-----	296
AaegGr21a	LWHTSAYYH-----IITMLNMNSALWYINCRGIRVAS--SSLSDRFR-----	288
TcasGr10	LWHTFGYYH-----ILAMLNCLCSLWFINCTAKGRVA--VWMCNNLH-----	244
TcasGr39	LWHTFGYYH-----ILAMLNCLCSLWFINCTAKGRVA--VWMCNNLH-----	244
AgamGr22	FCHTFAYYH-----IIAMLNCFCSLWFVNCTAFGTAS--KAFAKELT-----	269
AaegGr21b	LHTTFAYYH-----ILAMLNCFCSLWFVNCTAFGTAS--KAFQELS-----	269
DmelGr21a	LWYTFAYYP-----IIAMLNCFCSLWFVNCTAFGTAS--RALSDALQ-----	270
AgamGr24	LLQVIPYCV-----LDTITYMMGGYWMACETLSITA--KILAEDFQ-----	195
AaegGr63a	LVQVIPYCI-----LDTITYMMGGYWMTCETLSITA--NILAEDFQ-----	260
DmelGr63a	INQVVPYCI-----LDNLTAMLGAWWFLICEAMSITA--HLLAERFQ-----	289
TcasGr3	IIQVVPYCY-----INCLIYLIIGGFWMQCDVVGKVA--SQLAEDFQ-----	251
DmelOr83b	SANSKSELI---HNEEKDP-GTDMDSMGIYSSKADWGAQFR-APSTLQSFQGGGGG--	314
AgamOr7	SAGSKSELI----INEEKDPDKDFDLDSGIYSSKADWGAQFR-APSTLQTFDENGRNG--	313
HvirOr2	STE-----KEKIPDPTVMDIRGIYSTQQDFGMTLRGAGGRLQNFQQPNPN---	308
TcasOr16	SATSQDQ-----LIENDYNEKNEDLKGVYSTRQELGGHFR--GGALQNFQSGGVG---	410
TcasOr22	SATSQDQ-----LIENDYNEKNEDLKGVYSTRQELGGHFR--GGALQNFQSGGVG---	449
AmelOr2	SAEQPKQEPLPPVTPPQGENMLDMDLRGIYSNRTDFTTTFR--PTAGMTFN--GGVG---	314
TcasGr31	AITIRSTFS-----WTFIDVFIIMLTSTAFVFRKQLNAKVEMLKKNARVKN-----	137
TcasGr35	LKESVDTFN-----DIFGWIILCNIFEAAKSLIYIDMI IKKNVTQQNSD-----	149
DmelGr59c	IVKLSLLAT-----LTTIFNMIVCQYLLAMVQVIGLYKILLQDLRCLVRQAECIC	211
DmelGr92a	WWCDFYLVS-----ATNIFIHINSIGYLSLGVLYSELNKYVYTNLRIQLQKLN---	221
DmelGr28a	TFALPHINIS-----LMVFKFLCTTDLARSRFSMLNEILQDILDAHIEQLSALELS	229
DmelGr64b	PYHFWMPLPI-----LEWVNQTIAYPRSFDFCFIMCIGI GLAARFHQLYRR-----	231
TcasGr71	AVQLYFQFY-----YTYFLCVIVCIFRQKRYRNINLLLTFEQLQNRFFFAKK-----	193
AgamGr19	ALAHRLVFLP--KSIIQLSLLYIFRALTMAWTVQDVLLIMISDSIAGYFKRINSR-----	224
AaegGr64b	PYNVPVLF--VRYVYVVTMAWYQDILIMVISAYVLTTRYRQFFWR-----	173
DmelGr93d	IICNSIMCFG-----FIWHLVSLGVLYAELNDNLRFESEGFQTAFLRQKQIR-----	224
TcasGr34	IEIYSQFLYG-----FMIYLILDTIKSKYRQMHRLLANKYVITSDEFFYLVS----	180
TcasGr43	RHTVEYFQN-----YIHFFYQLLLYLITDMILMRYKELNVRVILDNMSRN-----	192
TcasGr47	RYTLSFIEN-----YCQFLYNCFHSTLLMLILSRYQLKQAQLWQNR-----	172
AmelGr3	YAPLYFMYT-----VIIISTEIQYTVSTYNIQGRFIRLNTSLKDLFNANSNNNDNAID	240
AgamGr32b	AQTVPFVVS-----SLILNQYFCVVFHLTSILRKMNERLARFLNMLPGSATEPP	232
AgamGr50	IYSILGVCN-----LLQISSMNVAVNLLMFVLYSGINIYARINAHCNLDLVYG---	212

TcasGr20 PVVYSYLLIFVQQIPFCFFVRVIRLKIEDLNGAFRAGLERVQNGENQWISVMKVKNQ--- 231
TcasGr79 LWSQLFSTFAG-----IEVLHVVKQCYHLQKINVQQSGIFINLPFLEHNLIR---- 200
TcasGr15 VYPLFVLLIVS-----NVLKILVEKYRHKQNFINESNVETVKFNLFLLSQAVETF 207
TcasGr60 FDLIFLSFR-----CCKLCKEANKTAFWLWYHIKIDREDEEARDDFIKLG----- 191
AgamGr38 PWMLLLNLG-----YSYFSLTTFHILSLTCLDVVRRARNVRLNKVFRKQFSLEG-- 219
TcasGr51 ALKLWVIVALFKNENLSEMVKQFLFTQKFTFVAGLATLSVLNLLSVIKSSFLDINTWKML 504
DmelGr39b SLLSILIIIR-----MQFVLVLLNVELLGHVSLLGIRLQNVLECHLMGAN----- 196
AgamGr28 LFTMGAYVLP-----NMLASMSLAQYYAGTVLIYKLOHTVNVQQLRTAIGKHR--- 215
TcasGr61 LLGPHTYFVKGTGRKTVLKTNKYCNFIILFYLSVVFVILVYYASLDETPNPVTVNGKLYNFN 358
TcasGr50 SYCPIVTTG-----I IKIQFATCAHLILQRVNHVKKILEKETQTVAFPKDN----- 205
AgamGr12 LYVTILEAVR-----VYVTMIAILIIYIVCVLVVKMHFRQLQDRVEQFGAS----- 207
AgamGr36 NSFSYALTG-----IQFMIVNFHFVAAARLVSFRLDAIKCSLKKHLDTGSWYIE- 222
AgamGr48 TVNIYVVMMS-----SQFTNLLLLMLLFGSYVYGQINKQLDRTVHRLASFETOQS- 219
AgamGr49a TVAIDLLQSF TWYGTFLWLQRKFGATYILAFWLNSIAVMQIVAAALNILLATLLWG---- 241
AgamGr49b TLNIFSVWQS-----AIFTNLIIVVTLIIGVHFLEILNHRRLTYIRQMRAPACHLK 223
DmelGr2a YLLPLLVCG-----LRYFQIFNATQLVRQRLDVLVLAQLQLHQKGPVADT--- 229
DmelGr32a FYFIQNGLTAT-----YIVFASALLRIVYIRFHFINQLLNGYTYGQQRHRKEGGARA 271
DmelGr68a YFLQLLYST-----LLALYLRLTMMNLAQRIGFLNQLDFTFNLQDCGHMEN----- 216
AmelGr7 FIVFGVSTIS-----FCFVWTCLKKFRQLNELLRSRIMESPIHKRVLEMTNN-- 222
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AmelGr9 FINFSVDMFVFN-----CIWVLKVCFKKLNKSIHELKFKRSGNDRVETIVQOKN--- 223
TcasGr57 NTTIFLIFHS-----VLPKRFFTSLGIAFDNIMKNLICEIDGRHEFFLAEFKS- 206
TcasGr41 YIFDVPNFVN-----EYVQAIIEVLYICSYTVLIRNKISNLNTSLIHSTHLNG--- 206
AgamGr34 QFVNVIAVT-----QVVLNLLYINARFRKLNQLLEEEQHPVAGRKRFRERASRLAGN 221
AgamGr35 IYAMAFLHAYVLIYWLHARFRRLNTLVEQYRQGHIFAPARQTIISFATMVKLDEES--- 258
AgamGr39 MCNLVYIMTSCFCCVTLWAIIVRYHNINATFWYVSLHQPVCITGGRNHVLLNSFASMYFH 239
AgamGr40 EMVVFLRSS-----LVFTIFGSYITVALTTIYMRFRALNKMIREKFPTRTADP- 215
AaegGr28d IILAMCRSATS-----LGIFTCYITMTLYSLKTGFDQLHQAIAKHLNTPPQAIN--- 223
AgamGr42 NTTLSLQSM-----MQAITSYYYIIRSIIHISCVVAFISGLYSFRDRFFAFNKQLR- 236
AgamGr41 AISIPLLSLASIRGLEFWMDFVLDTFVGFWSGGLLYNNICNVLLFHILYRIEIVN--- 237
AgamGr43 ITILEFTTLVKSTECILTKLNWMLDTFLESQQRQSTPSVTLKGEKNPTNKVYPLNRR- 239
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AgamGr44 LLSLCIFYYP-----KLTIIICSVSLYAVMLFQQNLHYALNERLKLQILVEHTG-- 218
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AgamGr46 MYMSDFIPAS-----EYCFIECFITMLTSSTVELQYVAFVQLIKNRLQINDLLVE 239
Dmelr93a GTGFGIYMWLG-----TLCVLDACFLGFLVSGILYEHMANNI IAMLKRMEPIESQD-- 232
AmelGr6 YMCTYIGTAT-----AVYKFFGMASFLGLRFHQLNQIAKENLPPRVGYKSSNVS--- 268
AmelGr10 GIIFYIMDAS-----MNTQILIFVCILFLIEERFRHLCSMIELSKADKIEAHR-- 204
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TcasGr40 TGVEHFFKK-----QFHYIFTYMPYNIIVFGLCLTTFGLLPVNGVTSEKCN----- 221
AgamGr3 WFWLHNFYP-----YTFSHVRHVHLLHISLMASNLRQLQRKLVALHQGTGER--- 221
AgamGr4 AFLRLRHLFH-----MFFIDILKIHQLKHHDLVDAGEYMAADLVEQPQDTAVFR-- 250
AgamGr6 HRNWLKVV-----LQAVRARYLQMMVLVDRDLGKLEQLHHRVLSGSS--- 242
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AgamGr47 NAGGMMKSKG-----PPKVTMVAPASAGFNKLSATTVYTYTYITQLKIDNQSS--- 232
DmelGr8a PLVWLTYLR-----NLQFVLHLELLREQLTGLEREMGLLAEYSRFASSETGR--- 213
AgamGr5 VYFFALQYILN-----IKLQOIYPAILLDTYLRMTRAALEHHVGLLQCSERLG--- 260
AgamGr8 FLLLHLRQLQ-----ILLYTNVLGFCFKAINSELAWTIELSNGASRYGRRSD--- 205
DmelGr9a LENLRYAYS-----LQAVRARYLQMMVLVDRDLGKLEQLHHRVLSGSS--- 181
DmelGr59f SINSYVMPN-----I ISSISFAQYLLQLQGIARQRRLTEGLERELTHLHSP--- 231
DmelGr77a MYACSLVFS-----VCQAILQLSLGMYTMAILFLGHLVRHSNLLLAKILADAHEIF 252
DmelGr85a CFLPECMIFS-----MNYLLFAILAEITRCWWSLQSGLKMVLLNRQLSTVAFN--- 233
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AgamGr1 NHLILYGLR-----IYAYLSDTTVCASFGLFALLLRILIVEMRQLVRKTTINEQ--- 223
DmelGr10a QVRVHFAIY-----AFVLWNYTENADYCYFINGSVLKYRQFNLQLGSLRDEMMDG-- 228
DmelGr59e MSLGVLQYAQP-----VHFLWLVDQMRMCKELKLLQRPPQGSTKLDACYES--- 211
DmelGr10b PFNVWDLNLAN-----LYFVYNSLARDAILVAYVLLLLLNLSEALRLNGQEQEHT--- 207
DmelGr89a LVAYGVQLY-----FQHVASVYGNIGFGGILLMLECYNQLEREPTNLAR----- 203
DmelGr57a LFALCYTIVTG-----GPHFTGYVHMTLAEMLGIRFRLQLLQPEFLNWRFP--- 223
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DmelGr58a KTAMIVAHIT-----QFIYVVFMMTGICVILLVLHWQSERLQIALKDCSFLN--- 209
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AaegGr93a LMGP IIVCSLT-----ASRYCVIFLTVSCILDDINRDLRSRQVDQFHRQHSSANIS--- 224
TcasGr19 AFIIIFTMHL-----LFCCAFIFFNMHLLFLCLDYFTLHLLFLPCIYFYFS--- 217
DmelGr47a VGAYWLLYN-----MLLAAVLGFYFLLWEMCRIQKLINDQMTLILARSQQRN--- 200
DmelGr58c PYQSAAIYVALIMILLMSYVDMTVYMEVAVAGNWLLVNMTQGVREMVQDLEVLPERNG--- 223

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AgamGr37a	-----	
AgamGr37c	-----	
AgamGr37e	-----	
AgamGr37f	-----	
AaegGr28c	RNTNLQVLQKLNRMDDQLLQEKLRTRIDHGKVVHSLMIVGIACHFIMTFIICGSYETVHVTV	322
AaegGr28b	-----	
AaegGr28e	-----	
TcasGr14	-----	
TcasGr49	-----	
AmelGr4	-----	
AmelGr5	-----	

TcasGr16 -----
TcasGr22 -----
TcasGr17 -----
TcasGr150 -----
TcasGr32 -----
TcasGr54 -----
TcasGr37 -----
TcasGr53 -----
TcasGr5 -----
TcasGr12 -----
TcasGr13 -----
TcasGr104 -----
TcasGr45 -----
TcasGr98 -----
TcasGr52 -----
TcasGr105 -----
TcasGr4 -----
TcasGr44 -----
AgamGr9a -----
AgamGr9c -----
AgamGr9b -----
AgamGr9d -----
AgamGr9e -----
AgamGr9f -----
AgamGr9g -----
AgamGr9i -----
AgamGr9h -----
AgamGr9j -----
AgamGr9l -----
AgamGr9k -----
AgamGr9m -----
AgamGr9n -----
AgamGr10 -----
AgamGr11 -----
DmelGr23aA -----
DmelGr23aB -----
DmelGr39aA -----
DmelGr39aB -----
DmelGr39aC -----
DmelGr39aD -----
DmelGr98c -----
DmelGr98d -----
DmelGr98b -----
AgamGr51 -----
AgamGr52 -----
DmelGr94a -----
DmelGr97a -----
DmelGr93b -----
DmelGr93c -----
DmelGr22d -----
DmelGr22e -----
DmelGr22a -----
DmelGr22b -----
DmelGr22c -----
DmelGr22f -----
DmelGr36a -----
DmelGr36c -----
DmelGr36b -----
DmelGr59d -----
DmelGr59a -----
DmelGr59b -----
AgamGr26 -----
AgamGr27 -----
AgamGr29 -----
AgamGr31 -----
AgamGr30 -----
AgamGr32a -----
TcasGr2 -----
TcasGr9 -----
TcasGr7 -----

TcasGr30 -----
TcasGr29 -----
AaegGr64f -----
AaegGr64a3 -----
AgamGr14 -----
AgamGr18 -----
AaegGr64d -----
AgamGr17 -----
AaegGr64c -----
DmelGr64c -----
DmelGr64d -----
AgamGr20 -----
AaegGr61a -----
AgamGr21 -----
AaegGr64a -----
DmelGr64a -----
DmelGr61a -----
AgamGr15 -----
AaegGr1 -----
DmelGr5a -----
DmelGr64f -----
DmelGr64e -----
AmelGr1 -----
AmelGr2 -----
AgamGr16 -----
AaegGr64e -----
TCasGr6 -----
TcasGr26 -----
TcasGr33 -----
AgamGr23 -----
AaegGr21a -----
TcasGr10 -----
TcasGr39 -----
AgamGr22 -----
AaegGr21b -----
DmelGr21a -----
AgamGr24 -----
AaegGr63a -----
DmelGr63a -----
TcasGr3 -----
DmelOr83b -----
AgamOr7 -----
HvirOr2 -----
TcasOr16 -----
TcasOr22 -----
AmelOr2 -----
TcasGr31 -----
TcasGr35 -----
DmelGr59c -----
DmelGr92a -----
DmelGr28a -----
DmelGr64b -----
TcasGr71 -----
AgamGr19 -----
AaegGr64b -----
DmelGr93d -----
TcasGr34 -----
TcasGr43 -----
TcasGr47 -----
AmelGr3 -----
AgamGr32b -----
AgamGr50 -----
TcasGr20 -----
TcasGr79 -----
TcasGr15 -----
TcasGr60 -----
AgamGr38 -----
TcasGr51 -----
DmelGr39b -----
AgamGr28 -----

TcasGr61	VCLVFTLTGPFPTFCNVLMEMWNIIPRENIDPIPLVVVLTHLIPFMLIHQ-----	468
TcasGr50	-----	
AgamGr12	-----	
AgamGr36	-----	
AgamGr48	-----	
AgamGr49a	-----	
AgamGr49b	-----	
DmelGr2a	-----	
DmelGr32a	-----	
DmelGr68a	-----	
AmelGr7	-----	
AmelGr8	-----	
AmelGr9	-----	
TcasGr57	-----	
TcasGr41	-----	
AgamGr34	-----	
AgamGr35	-----	
AgamGr39	-----	
AgamGr40	-----	
AaegGr28d	-----	
AgamGr42	-----	
AgamGr41	-----	
AgamGr43	-----	
DmelGr33a	-----	
AgamGr44	-----	
AgamGr13	-----	
AgamGr45	-----	
AgamGr46	-----	
Dmelr93a	-----	
AmelGr6	-----	
AmelGr10	-----	
TcasGr28	-----	
TcasGr40	-----	
AgamGr3	-----	
AgamGr4	-----	
AgamGr6	-----	
AgamGr7	-----	
AgamGr47	-----	
DmelGr8a	-----	
AgamGr5	-----	
AgamGr8	-----	
DmelGr9a	-----	
DmelGr59f	-----	
DmelGr77a	-----	
DmelGr85a	-----	
TcasGr27	-----	
TcasGr48	-----	
AgamGr1	-----	
DmelGr10a	-----	
DmelGr59e	-----	
DmelGr10b	-----	
DmelGr89a	-----	
DmelGr57a	-----	
DmelGr47b	-----	
DmelGr58a	-----	
DmelGr58b	-----	
DmelGr98a	-----	
AaegGr93a	-----	
TcasGr19	-----	
DmelGr47a	-----	
DmelGr58c	-----	
TcasGr38	-----KQIRFLNQY	223
TcasGr46	-----KQIRFLNQY	205
TcasGr1	-----KQLTKITVK	208
TcasGr123	-----KQINNLIIEY	206
TcasGr62	-----KQINNLIIEY	481
TcasGr25	-----FHD	103
TcasGr59	-----FHD	278

AgamGr2	-----DAVGYGPAQ	227
AaegGr66a	-----AVF	291
DmelGr66a	-----PLA	305
TcasGr11	-----QDDKIPQISDNLYILCR---	235
TcasGr55	-----QDDKIPQISDNLYILCR---	235
TcasGr21	-----RTSVEGWTDVSNVKRKSKEI	244
TcasGr56	-----RTSVEGWTDVSNVKRKSKEI	244
AaegGr	-----DKRRLSFDEKQNEVKIVKIQ	244
AaegGr28a	-----DKVLLQFTN-QHVNEQVKIQ	139
AgamGr33	-----EKR-ISPQRRPSYWHAIKIQ	241
DmelGr28bB	-----TRSLKAVNQKQRSLLQCLDSF	244
DmelGr28bC	-----TRSLKAVNQKQRSLLQCLDSF	271
DmelGr28bD	-----TRSLKAVNQKQRSLLQCLDSF	241
DmelGr28bA	-----TRSLKAVNQKQRSLLQCLDSF	253
DmelGr28bE	-----TRSLKAVNQKQRSLLQCLDSF	248
AgamGr25	-----SVGRTPRIEISSINLSDSKNDPIDVLRKCV	274
AaegGr43a	-----	
DmelGr43a	-----ATSAIKPQKVSTVKNVSVNRPAMPALHASL	250
AgamGr37b	-----MYFPTSPSAVGNP	223
AgamGr37d	-----MYFPTSPSAVGNP	219
AgamGr37a	-----MYFPTSPSAVGNP	233
AgamGr37c	-----MYFPTSPSAVGNP	227
AgamGr37e	-----MYFPTSPSAVGNP	227
AgamGr37f	-----ACRMYFPTSPSAVGNP	254
AaegGr28c	FAKLGIVKARILFHFICGFAFMLTIVVPIVQVILLVARFQALNNAFRMYFPTTPSCGGFL	382
AaegGr28b	-----AQFVPPKKSSMVL	234
AaegGr28e	-----AHFVPPKKSSMVL	234
TcasGr14	-----VDLFVIFPLTKA	195
TcasGr49	-----VDLFVIFPLTKA	239
AmelGr4	-----MQNFYQNRLLDDF	223
AmelGr5	-----IQSFCRTRYDDI	223
TcasGr16	-----IQALINDSRKVT	218
TcasGr22	-----IITRGDVT	129
TcasGr17	-----IIDSIRQNS	205
TcasGr150	-----IIDSIRQNS	205
TcasGr32	-----KQL	183
TcasGr54	-----KQL	183
TcasGr37	-----ACL	168
TcasGr53	-----ACL	168
TcasGr5	-----YVM	179
TcasGr12	-----RQT	173
TcasGr13	-----RQT	247
TcasGr104	-----NLF	204
TcasGr45	-----NLF	204
TcasGr98	-----EQM	202
TcasGr52	-----KAL	143
TcasGr105	-----KYL	197
TcasGr4	-----	
TcasGr44	-----	
AgamGr9a	-----	
AgamGr9c	-----	
AgamGr9b	-----	
AgamGr9d	-----	
AgamGr9e	-----	
AgamGr9f	-----	
AgamGr9g	-----	
AgamGr9i	-----	
AgamGr9h	-----	
AgamGr9j	-----	
AgamGr9l	-----	
AgamGr9k	-----	
AgamGr9m	-----	
AgamGr9n	-----	
AgamGr10	-----	
AgamGr11	-----	
DmelGr23aA	-----	
DmelGr23aB	-----	
DmelGr39aA	-----	
DmelGr39aB	-----	
DmelGr39aC	-----	

DmelGr39aD	-----	
DmelGr98c	-----	
DmelGr98d	-----	
DmelGr98b	-----	
AgamGr51	-----	
AgamGr52	-----	
DmelGr94a	-----	
DmelGr97a	-----	
DmelGr93b	-----	
DmelGr93c	-----	
DmelGr22d	-----	
DmelGr22e	-----	
DmelGr22a	-----	
DmelGr22b	-----	
DmelGr22c	-----	
DmelGr22f	-----	
DmelGr36a	-----	
DmelGr36c	-----	
DmelGr36b	-----	
DmelGr59d	-----	
DmelGr59a	-----	
DmelGr59b	-----	
AgamGr26	-----	
AgamGr27	-----	
AgamGr29	-----	
AgamGr31	-----	
AgamGr30	-----	
AgamGr32a	-----	
TcasGr2	-----	
TcasGr9	-----	
TcasGr7	-----	
TcasGr30	-----	
TcasGr29	-----	
AaegGr64f	-----	
AaegGr64a3	-----	
AgamGr14	-----	
AgamGr18	-----	
AaegGr64d	-----	
AgamGr17	-----	
AaegGr64c	-----	
DmelGr64c	-----	
DmelGr64d	-----	
AgamGr20	-----	
AaegGr61a	-----	
AgamGr21	-----	
AaegGr64a	-----	
DmelGr64a	-----	
DmelGr61a	-----	
AgamGr15	-----	
AaegGr1	-----	
DmelGr5a	-----	
DmelGr64f	-----	
DmelGr64e	-----	
AmelGr1	-----	
AmelGr2	-----	
AgamGr16	-----	
AaegGr64e	-----	
TCasGr6	-----ASNSKSTKV	210
TcasGr26	-----ASNSKSTKV	210
TcasGr33	-----ASNSKSTKV	210
AgamGr23	-----	
AaegGr21a	-----	
TcasGr10	-----	
TcasGr39	-----	
AgamGr22	-----	
AaegGr21b	-----	
DmelGr21a	-----	
AgamGr24	-----	
AaegGr63a	-----	
DmelGr63a	-----	

TcasGr3	-----	
DmelOr83b	-----NGLVNGAN-----	322
AgamOr7	-----N-----	314
HvirOr2	-----	
TcasOr16	-----	
TcasOr22	-----	
AmelOr2	-----	
TcasGr31	-----	
TcasGr35	-----	
DmelGr59c	-----	
DmelGr92a	-----	
DmelGr28a	-----HRLRNLI-----	248
DmelGr64b	-----	
TcasGr71	-----	
AgamGr19	-----	
AaegGr64b	-----	
DmelGr93d	-----	
TcasGr34	-----	
TcasGr43	-----	
TcasGr47	-----	
AmelGr3	-----LKPQRQI-----	267
AgamGr32b	-----	
AgamGr50	-----	
TcasGr20	-----	
TcasGr79	-----	
TcasGr15	-----	
TcasGr60	-----	
AgamGr38	-----	
TcasGr51	-----FITKQLIFMIFVTTYQLYCWSSFLKISVLQSLWASPTCDLMYEFQIFTFLLMSLLQSIKRR-----	591
DmelGr39b	-----	
AgamGr28	-----	
TcasGr61	-----ETQFVVANIILRRRFALINSILRK-----	492
TcasGr50	-----	
AgamGr12	-----	
AgamGr36	-----	
AgamGr48	-----	
AgamGr49a	-----	
AgamGr49b	-----	
DmelGr2a	-----	
DmelGr32a	-----	
DmelGr68a	-----	
AmelGr7	-----	
AmelGr8	-----	
AmelGr9	-----	
TcasGr57	-----	
TcasGr41	-----	
AgamGr34	-----KKMS-----	231
AgamGr35	-----	
AgamGr39	-----	
AgamGr40	-----	
AaegGr28d	-----	
AgamGr42	-----I-----	237
AgamGr41	-----DF-----	239
AgamGr43	-----	
DmelGr33a	-----	
AgamGr44	-----	
AgamGr13	-----	
AgamGr45	-----	
AgamGr46	-----TD-----	246
Dmelr93a	-----	
AmelGr6	-----	
AmelGr10	-----	
TcasGr28	-----	
TcasGr40	-----	
AgamGr3	-----	
AgamGr4	-----	
AgamGr6	-----	
AgamGr7	-----	
AgamGr47	-----	
DmelGr8a	-----	

AgamGr5 -----
 AgamGr8 -----
 DmelGr9a -----
 DmelGr59f -----
 DmelGr77a -----Q 265
 DmelGr85a -----
 TcasGr27 -----
 TcasGr48 -----
 AgamGr1 -----
 DmelGr10a -----
 DmelGr59e -----
 DmelGr10b -----
 DmelGr89a -----
 DmelGr57a -----
 DmelGr47b -----
 DmelGr58a -----
 DmelGr58b -----
 DmelGr98a -----
 AaegGr93a -----
 TcasGr19 -----
 DmelGr47a -----
 DmelGr58c -----

 TcasGr38 LRLKPEGRISNR---RVFISFSKICYLHQHLSKSVKLFNEVFGV--SLLVLFGNSFLSIV 278
 TcasGr46 LRLKPEGRISNR---RVFISFSKICYLHQHLSKSVKLFNEVFGV--SLLVLFGNSFLSIV 260
 TcasGr1 N-----FATK---TQSAVLGKICTLHHHLSKLVTRFNEIFGL--GLLLMFAVSFLIIT 256
 TcasGr123 FQKNKIGPVETKGTNKQLNLTNLKICALHHHLSKLVKLFNETFGI--VLLLMFVGSFVVIV 264
 TcasGr62 FQKNKIGPVETKGTNKQLNLTNLKICALHHHLSKLVKLFNETFGI--VLLLMFVGSFVVIV 539
 TcasGr25 IFLPLLCILT-----NTLEILITVTVCELTILEYKRTKKLLY--RIPVTKTDSMLIRN 154
 TcasGr59 IFLPLLCILT-----NTLEILITVTVCELTILEYKRTKKLLY--RIPVTKTDSMLIRN 329
 AgamGr2 EFLPTDRRLRPHIEQRLDNKILIFCRTHDELCEIGKVVNRMYSV--QMLVAMAHGFVAIT 285
 AaegGr66a EFLAFDKYMK--IDEKLDKMLICRTHDELCEIGKSVNYMFSF--QMLVSMAGFMAIT 347
 DmelGr66a TNMVHESELG--NAAKVEEKLNNLCQVHDEICEIGKALNELWSY--PILSLMAYGFLIFT 361
 TcasGr11 -----LHYKLTSMVMQKINSASFV--QLLVSIGVSLFDVL 267
 TcasGr55 -----LHYKLTSMVMQKINSASFV--QLLVSIGVSLFDVL 267
 TcasGr21 SKLPKSM LAIS----DPVFIVDQVAALHIKLTDTAHMINYAFCV--QQLLRITVAFISIV 298
 TcasGr56 SKLPKSM LAIS----DPVFIVDQVAALHIKLTDTAHMINYAFCV--QQLLRITVAFISIV 298
 AaegGr KPLNISSVFSN-TNRYMPDVINQVASIQSEISDACDHVEDYFKV--QMLTIVTISFLISV 301
 AaegGr28a NPFGVSSVFSVKTNRQMPNVINRVASIQSEICDACDCVEDYFKV--QMLTIVTISFLISV 197
 AgamGr33 RPLGIASVYSN-NDKSMPPDVSTVAEIQDALCEACSYAEDYFTI--QMLTIVTIVFLIIV 298
 DmelGr28bB SMYTIVTKDPA-----EIIQESMEIHHLICEAAATANKYFTY--QLLTIISIAFLIIV 295
 DmelGr28bC SMYTIVTKDPA-----EIIQESMEIHHLICEAAATANKYFTY--QLLTIISIAFLIIV 322
 DmelGr28bD SMYTIVTKDPA-----EIIQESMEIHHLICEAAATANKYFTY--QLLTIISIAFLIIV 292
 DmelGr28bA SMYTIVTKDPA-----EIIQESMEIHHLICEAAATANKYFTY--QLLTIISIAFLIIV 304
 DmelGr28bE SMYTIVTKDPA-----EIIQESMEIHHLICEAAATANKYFTY--QLLTIISIAFLIIV 299
 AgamGr25 ANVAHGFDKRTLSRK--IIEDLAVIHASLSYCVLVSKTFTGI--ALLAVLGSCLLHLV 330
 AaegGr43a -----KRTTIPPNR--IIEDLAYIHASLSTGVVLSNTFTGV--ALLAVLGSCLLHLV 270
 DmelGr43a TKLNGETLPSEAAAKNKGLLKLADSHESLGCVHLLSNSFGI--AVLFILVSCLLHLV 308
 AgamGr37b S-----EFAICS-EKEQINVLKQIKILHDKLNDVVELVNYCFVS--Q GK-RIGILVHKAI 274
 AgamGr37d S-----EFAICS-EKEQINVLKQIKILHDKLNDVVELVNYCFVS--Q GK-RIGILVHKAI 270
 AgamGr37a S-----EFAICS-EKEQINVLKQIKILHDKLNDVVELVNYCFVS--Q GK-RIGILVHKAI 284
 AgamGr37c S-----EFAICS-EKEQINVLKQIKILHDKLNDVVELVNYCFVS--Q GK-RIGILVHKAI 278
 AgamGr37e S-----EFAICS-EKEQINVLKQIKILHDKLNDVVELVNYCFVS--Q GK-RIGILVHKAI 278
 AgamGr37f S-----EFAICS-EKEQINVLKQIKILHDKLNDVVELVNYCFVS--Q GK-RIGILVHKAI 305
 AaegGr28c SSTSHTEVICN-EKEQLAVLQKIKILHDKLNDVVELVNYCFVS--QITFCVGLCFVIGV 439
 AaegGr28b D-----ELPVPKSNYKSVVLHQIQLQWTEICQVVELISKTYR--QIIFIATASTIMST 287
 AaegGr28e D-----ELPVPKSNYKSVVLHQIQLQWTEISQVVELISKTYR--QIIFIATASTIMST 287
 TcasGr14 EKVRNLKEDEVTFVSVQKIQ---ELSHLHYKLANFTVKISGLFEI--TTITAMVMWFGYVI 250
 TcasGr49 EKVRNLKEDEVTFVSVQKIQ---ELSHLHYKLANFTVKISGLFEI--TTITAMVMWFGYVI 294
 AmelGr4 NSNIIYQNRRIFLNCSRIHLLLQIRNIHDHLCNISREISQFYAF--PTLTGLCFIFFTSL 281
 AmelGr5 NFKILNQTRCVFMSYSKIQLFIQIRDIYDHLCDISREVSDFYSF--SILTALSFI FLVIL 281
 TcasGr16 RFPTELTFCKNIK-----HLVNLHKNLVKAKDHNSLYSL--HLLLWITVTFILLV 267
 TcasGr22 -----STTIK-----KLFNLHKILVKVREINGIFAF--QVLMCTSMNFVLLI 170
 TcasGr17 QTRNQAVPTGTIK-----TLVQMHSNLVTTSEEVCDSFSI--FGLVWISLIFVVLV 254
 TcasGr150 QTRNQAVPTGTIK-----TLVQMHSNLVTTSEEVCDSFSI--FGLVWISLIFVVLV 254
 TcasGr32 RFKLRFFEKLGNRRLGFVQRLDQIQFDICLLKEGVLDVNDIFGW--QILFLITYATLQIL 241
 TcasGr54 RFKLRFFEKLGNRRLGFVQRLDQIQFDICLLKEGVLDVNDIFGW--QILFLITYATLQIL 241
 TcasGr37 -----MEEKRP--MVS LQVIKAQIYSLRETVDVFNDIFGW--PFLLLITFTSLQIM 215
 TcasGr53 -----MEEKRP--MVS LQVIKAQIYSLRETVDVFNDIFGW--PFLLLITFTSLQIM 215

TcasGr5 T-----GQLKAQNSNLLKSVCADLCLLSECVDLFNSLFGF--LVLLLVALTTLQLL 228
TcasGr12 -----LDTADVKTLLTTVVEKECEYKMKVTIDAFNDIFGW--SFLFLTLYSSLLLL 220
TcasGr13 -----LDTADVKTLLTTVVEKECEYKMKVTIDAFNDIFGW--SFLFLTLYSSLLLL 294
TcasGr104 RIE-----ESEEKNIIVSLRQIGSLSQLLSETVALFNDVFGT--CLILITGKSIVQLL 255
TcasGr45 RIE-----ESEEKNIIVSLRQIGSLSQLLSETVALFNDVFGT--CLILITGKSIVQLL 255
TcasGr98 AVR-----INP-KNCASFVIEVRKLSRLLGEMVGLFNDIFGW--PLVFITGRFVIKIL 252
TcasGr52 ES-----SKISVGLIRD TAVLYRLLADNVANFNKIFGW--SLIFLFGRIVLQLL 190
TcasGr105 KIE-----TS-----CRYVGTLYRILTTMMEMVNDIFGW--TLILILAKCITSSL 240
TcasGr4 -----EIHFDLCQAADDLN-RYFEV--QVLTIFGVSFYFFI 239
TcasGr44 -----EIHFDLCQAADDLN-RYFEV--QVLTIFGVSFYFFI 243
AgamGr9a -----TYVTTYNSIAAVLGDHLCSYFGP--LVLLHCSYFCLEAA 257
AgamGr9c -----TYVSMYNSITNVLRRNLTYPYFGP--IILLHSSYVCLEAA 254
AgamGr9b -----FYGTMYCKIAVVLSDHLGYPYFGL--IILMHCSYVCFEAA 306
AgamGr9d -----RYGVIHNR TAF AIRNHL SHYFGP--MLAVFCTVVSLEVA 261
AgamGr9e -----VFCKTYERVCRAVAR SFF EY TGP--VIATFCTLVMFEFS 253
AgamGr9f -----LFCRTYDRVCTRVAQPFY EY CGP--VVATFCPLLI FEFS 250
AgamGr9g -----PLWQVYDRVTIDVRKDL S QY YGP--IVLLFSCMIGLESA 258
AgamGr9i -----ILWQVYDRVTIHVRKDL S QY CGP--IVVLTSLFVLECA 258
AgamGr9h -----MYFKLIDRITVLI NFHLSQI YGS--FVVPHCMYVLFESA 258
AgamGr9j -----VFLDRFQRYLLID-SVNKCF SV--PVTHTL L L L I V L E R T 291
AgamGr9l -----LFIKRFEYYELIE-CINRCFAI--PLIHVLL L I L L E R T 281
AgamGr9k -----LFMAKFER YV M L I E - Q I N R C F S L -- P I V T M L A L G M V E L A 271
AgamGr9m -----LFLERFRQYIAQIE-RINQCLSA--PLLGMLLQALIELA 274
AgamGr9n -----YFLHRYDRYSRLIG-EVDDCYSF--PVVLVLLLVMLQLI 242
AgamGr10 -----YFLHRYDRYSRQIG-EVDDCYSF--PVVLVLLLVMLQLI 242
AgamGr11 -----YFVERFELYASQLR-QIDQCFSM--PLTMIVLLVLIEMV 244
DmelGr23aA -----TLRTTYERIFECYETFSDCYGW--GMLGLHLLT S F Q F V 244
DmelGr23aB -----DLKRRYNDLH Y L F V R I N G Y F G G -- S L L T I I I V H F A I F V 247
DmelGr39aA -----VAGCLRTHDEI L L L G Q R E L I A V Y G G -- V I L F L F I Y Q W M Q C I 250
DmelGr39aB -----LRLRVCLEMHDRLMLLCNDEISLVYGF--IAWLSWFMASLDVT 257
DmelGr39aC -----NFCKYNQV I W L S Y T E I N H C F G L -- L L L L V T G L I L L I T P 251
DmelGr39aD -----Q Q I L K L C G G E L N E C F G L -- L M L P I V A L V L L M A P 242
DmelGr98c -----CVTLKQNQLLIGRIWRLVDEIGAYFRW--SMTLLFLYNGLTIL 274
DmelGr98d -----CVALKRNQLLAGRIWGLVNEVSLYFTL--SLTLLFLYNELTIL 272
DmelGr98b -----CVALKRNQLLGR IWRLEGDVGSYFTP--TMLLLFLYNGLTIL 272
AgamGr51 -----PSVLQLYMLHCKNEDMVKQFM-ETLNF--PTLMLTGWYFFMIV 285
AgamGr52 -----STIREVYMWHCEN AQLEKQFM-AIMDL--PVLLNGWYFFMIV 277
DmelGr94a -----YRMQRFCALADELDQLAYRYR-LIYVH--SGKYLT P M S L S M I L 265
DmelGr97a -----YRMRRFCELADL L D E L A R K Y G - F T A S R -- S K N Y L R F T D W S M V L 286
DmelGr93b -----NNPQPTRQAI SNL D K C L Y L Y D - E I H Q V -- S R S F Q Q L F D L P L F L 276
DmelGr93c -----GRKQ-LRIVEYRVDECISVYD-EIERV--GRTFHRLLELPVLI 269
DmelGr22d -----VRFLKLYNKL V N L Y S K L A - D C Y D C -- Q T V L M M A I F L A A N I 264
DmelGr22e -----MDLLLYLYHRLLDLGQRLA-SIYDY--QMVMVMSFLIANV 267
DmelGr22a -----IQLLLWLVYSRLLDLNHRLT-AIYDI--QVTLFMATLFSVNI 266
DmelGr22b -----IHQFLSLYKR L L E L N R K L V - I A Y E Y -- Q M T L F I I A Q L S G N I 265
DmelGr22c -----IRKYL S L Y R R L L E L K G Y M V - A T Y E Y -- H M T L V L T T G L A S N F 262
DmelGr22f -----IHALASLYDRLLKLSLVV-ACNDL--QLILMLI I Y L I G N T 258
DmelGr36a -----CCYLADRIDNIAKLQNLQSI V T Q L N - Q V F G I -- Q G I M V Y G G Y I F S V 265
DmelGr36c -----CCSLADQIENIARIQS Q L Q T I M N Q M E - E V F G I -- Q G A M T Y G G Y L S S V 265
DmelGr36b -----CCYLSQLEDIGEVQS Q S M V G Q L D - E V F G M -- Q G L M A Y S E Y L S I V 265
DmelGr59d -----CCYLADRLERIAKS Q S D L Q E L V E N L S - T A Y E G -- E V V C L V I T Y Y L N M L 264
DmelGr59a -----LRGLWALHRNLSYTARRIN-KHYGP--QMLAMRFDYFIFSI 251
DmelGr59b -----LQHLWLLHACLTKTALNIN-KIYAP--QMLASRFDNFVNGV 252
AgamGr26 -----LPAGALYDYAHLIDLLRRTHLRLAQLLEQAN-GCFGV--LIVFTTTASFVVL S 293
AgamGr27 -----KVRDCAELVETLRRLTHLKLGDLTGRVV-GRFGP--LIVCTVLS S F V V L N 273
AgamGr29 -----TPVRLTRDDRTIEKIRLLQLQLLQIVRRTNGGEYGR--LVIMILLATFIYLN 291
AgamGr31 -----TPVRFTRDDEQTEKIRLLQLKLVQIVFHTNGGEYGL--LLIVVLLTTFIFLN 292
AgamGr30 -----RKSNTKENDITIDKLVRLHTALLHLTWKTN-AHYGV--LLLIIMLYSFIQIS 285
AgamGr32a -----KERVTSPLDVATIVRLSTMHMMLRLARAAN-KHFGV--LMLIIVLSTFIQIN 297
TcasGr2 --RRIA AVASEKIKNEI--IWKKLREYTRQRLVRKV D K E I A Y -- I V L L T F A S D L L F I L 301
TcasGr9 --RRIA AVASEKVTSEK--SWIALNDYNR L C H L C F L L D E K L S Y -- I I L T S F L N N F Y F I I 301
TcasGr7 --DRTQSMSESKNKSES--AWKNLREDYNRLCRLCKRVDEEISY--IVLMSFASDLLFIL 303
TcasGr30 --DRTQSMSESKNKSES--AWKNLREDYNRLCRLCKRVDEEISY--IVLMSFASDLLFIL 303
TcasGr29 --DRTQSMSESKNKSES--AWKNLREDYNRLCRLCKRVDEEISY--IVLMSFASDLLFIL 303
AaegGr64f --DRIRTFNGNQPEE---VWRTLRLDFLRLSELVTYLDTKLSR--IILLSCASDMFFIS 260
AaegGr64a3 --DRIRTFNGNQPEE---VWRTLRLDFLRLSELVTYLDTKLSR--IILLSCASDMFFIS 260
AgamGr14 --ERLERLDGQPQSQG---VWRALRLDYVRLSELVTFVDERFSK--LILFCCANDMFFIT 324
AgamGr18 --RRLVAVQGIACPTN---FWHDVRMDYVAVSELVQVLD A Q F G H -- L I L L A C A N D M Y F I A 296
AaegGr64d --QRLVSVEGTHYPTT---FWREIRTDYVAVSQLVAF L D E Q F G H -- L I L L S C A N D M Y F I A 328
AgamGr17 --RHAAQYKGRHVMGP---VWQRLRLDYGRISSLVAYMEGIMAP--IIVCTTASDLYFIF 285

AaegGr64c --HRIEHLKGMPLPES---FWAEIRLDYTKISNLVIYMDGVLSLSP--MIMITSASNIFFIT 310
 DmelGr64c --WRIRQHVRQMPNE---FWQIRIRCDLLDLSLLGIYDKELSG--LIVLSCAHNMYFVC 289
 DmelGr64d --WRIRQNLGKPMKE---FWQEIIRSDFLDLSLLKLYDKELSG--LILVCCAHNMYFIC 298
 AgamGr20 --KRID-SNLQNG---SEAFWGEIMRTHFVGLIELVERTNRIVGP--LLIASCANDMYFLC 316
 AaegGr61a --IRIS-ERISQRKGTTEDFWEQIRIQYVSLCDLVVLLNRSINR--LVFVSYANDLYFIC 313
 AgamGr21 --NYLKILSDG-VLIPGEDFWIRVRTNYVAVCELDLDDVDRAISW--TMLISCATNLYYIC 341
 AaegGr64a --THLRTLGGGVLPINPEFWIRVRYTHYVSLCELLDEVDQAVAW--IVLISCATNLYFIC 224
 DmelGr64a --TRIRKLEHEEVCE---VFIQIREHYVKMCELLEFVDSAMSS--LILLSVCNNLYFVC 335
 DmelGr61a --ARVGALEGRHVPEA---LWYDIRRDHIRLCELASLVEASMSN--IVFVSCANNVYVIC 318
 AgamGr15 --SFVQEQMLRQKMTEQ--FWGQQRQKYRNVCDLVTTVDDHISA--ITMLSISNNLFFIC 322
 AaegGr1 --NHLMNHK-REKMTQ--FWGQQRQYRNICDLVRFVDDAISI--ITMLSISNNLFFIC 326
 DmelGr5a --RSLEQQV-RQPMPEA--YWTWSRTLYRSIVELIREVDDAVSG--IMLISFGSNLYFIC 322
 DmelGr64f --DDLRFNK-GMNMAPS--YWSERRIQYRNICILCDKMDDAISL--ITMVSFSNNLYFIC 347
 DmelGr64e --DYMMEA-RLPTTVD--YWMQCRINFRNLCKLCEEVDDAIST--ITLLCFNNLYFIC 341
 AmelGr1 --SRLYSIR-GKAMPEW--WWEARSDYNHLATLTRQLDISHISI--MVLFSFATDLYFIC 270
 AmelGr2 --KKLAVTM-TKQAAF--NWRELREHYAILSCIVKKVDDHISP--IILLSFANNVYFIC 358
 AgamGr16 --DAVIASSE-KLYHRGI--FWKDQYTHYRRLVGLIRHVNNHIGV--FIVISYASNLFYIC 295
 AaegGr64e --EIIILNSK-AQYHSDT--FWHDQYRKHHRVCLNVHIVGQNVAY--LVVISFANNMFFIC 313
 TCasGr6 LFKDVDNRNCSAYIIAHYRVLWLSLSDLLQKMGNAARTYSTYSL--FMMANITVAVYGFT 268
 TCasGr26 LFKDVDNRNCSAYIIAHYRVLWLSLSDLLQKMGNAARTYSTYSL--FMMANITVAVYGFT 268
 TCasGr33 LFKDVDNRNCSAYIIAHYRVLWLSLSDLLQKMGNAARTYSTYSL--FMMANITVAVYGFT 268
 AgamGr23 --QDVAIECTAAMISRYRFLWLNLSSELLQALGNAYARTYSTYCL--FMFVNITVAIYGAL 352
 AaegGr21a --KDVAIECTAAMISQYRFLWLNLSSELLQALGNAYARTYSTYCL--FMFANITVAIYGAL 344
 TCasGr10 --KALESRNPAKILGAYRDLWVDSLHMMQQLGKAYSGLMYSMYCL--LILLTTIVASYGSV 300
 TCasGr39 --KALESRNPAKILGAYRDLWVDSLHMMQQLGKAYSGLMYSMYCL--LILLTTIVASYGSV 300
 AgamGr22 --DVLATERPAAKLETEYRHLWVDSLHMMQQLGKAYSGLMYGIYCL--VIFFTTIIATYGSL 325
 AaegGr21b --NILATEQPADKLETEYRHLWVDSLHMMQQLGKAYSGLMYGIYCL--VIFFTTIIATYGAL 325
 DmelGr21a --TTIRGEKPAQKLETEYRHLWVDSLHMMQQLGRAYSGLMYGMYCL--VIFFTTIIATYGSI 326
 AgamGr24 --RALRHVGPAAKVSEYRSLWLRLSKLARDTGFSTCYTFTFICL--YLFIIITLSIYGLM 251
 AaegGr63a --RALRHVGPAAKVSEYRSLWLRLSKLARDTGSSTCYTFTFICL--YLFIIITLSIYGLM 316
 DmelGr63a --KALKHIGPAAMVADYRVLWLRSLKLRDTRTGNALCYTFVFMSL--YLFIIITLSIYGLM 345
 TCasGr3 --MALKHVGPSSQVADYRSLWMLSLKLRDTRTGNALCYTFVFMSL--YLFIIITLSIYGLM 307
 DmelOr83b --PNGLTKKQEMMVRSAIKYWVERHKKHVRLVVAIGDYGALL--LHMLTSTIKLTLLA 378
 AgamOr7 --PNGLTRKQEMMVRSAIKYWVERHKKHVRLVVAIGDYGALL--LHMLTSTIKLTLLA 370
 HvirOr2 --PNGLTPKQEMMVRSAIKYWVERHKKHVRLVVAIGDYGALL--FHMLVSTITLTLA 364
 TCasOr16 --PNGLTKKQELMVRSAIKYWVERHKKHVRLVVAIGDAYGVAL--LHMLTSTIMLTLA 466
 TCasOr22 --PNGLTKKQELMVRSAIKYWVERHKKHVRLVVAIGDAYGVAL--LHMLTSTIMLTLA 505
 AmelOr2 --PNGLTKKQEMMVRSAIKYWVERHKKHVRLVVAIGDAYGVAL--LHMLTSTITLTLA 370
 TCasGr31 -----TALWKQLRYEHYRQLSVLIDNNSY--IIIVSFATNLYFII 178
 TCasGr35 -----VFIFDNVWFLWVWILSTIFLCL--DTILKKVDDILSQA 186
 DmelGr59c -----GGVYSIQCCSLADQLDLIAERHYFLKDRLEMSDLFQI--QSLSMSLVYFFSTM 269
 DmelGr92a -----TSGSKQKIRRVRNLEKICISLYREIYHT--SIMFHKLFVPLFL 263
 DmelGr28a STPMKRYSVTSVIRLNPEYAIKQVSNHNLCDICQTIIEYFTY--PLLGIIAISFLFIL 306
 DmelGr64b -----IAAVHRKVMVAVFWTEYVREHYLALKRLVHLLDAAIAP--LVLLAFGNMFFIC 282
 TCasGr71 -----MEGLVCSIKELNMIFNEFFGW--PIIMIIYSSLMVL 228
 AgamGr19 -----IQFYTTVQVVAREKFWSEIHSDYVMVCELLEHVMSICSP--LLVSCGTNLYLIC 277
 AaegGr64b -----IEVACNGTVLPTESFVVEIREHYVISEFVLVHVKMYS--LVLSGCCNDVFLIC 226
 DmelGr93d -----VQKSMALFKEISSVVTSLQDIFNV--HLFSLALLTLLQVL 262
 TCasGr34 -----KIESLACELKNTVDDFNDIFGI--SFLIIISYSTLHFV 216
 TCasGr43 -----HLFLVRRTEFLAQILNQTVNFYNSAFGW--PIAFLIFVATLDFL 234
 TCasGr47 -----YETVAHGMTVQKTTLFFNRTFGV--PIFLVLFVQMOSV 210
 AmelGr3 VLGSYRLSRKLDENKMYVNNISELIMVHSSLCDAVSLINSTFGV--VILAVTVTCLLHLV 325
 AgamGr32b -----VLGESLKMESSRLDQLEQLRLLHVRTVQTAGSLSEKFGI--VIIIVIAAFASVN 296
 AgamGr50 -----SKAPNEIVRLYLMHTEASLVVQSIVEVISI--PILLSVWYFFIIV 256
 TCasGr20 -----PKVIQGSALSAYERLNEFMRLVEEIEDVIEAINGFYGV--HTLLILFSCLLHLV 283
 TCasGr79 -----LKNCVIYFNRIFGWNILFGHIFTV--CRTLIYIDNVKGL 238
 TCasGr15 DIFGWTILQTVFFTVPRVLMYDFIFITEHESKPNWFLFLANFLT--NLLFWFQIVNVA 266
 TCasGr60 -----IKLSNDKLEITACRLFKIDNSLIL--DLLVFITINVVLL 229
 AgamGr38 --DVADPPALTVYDPKQTLILRQIMQIFDKISDLADKGSYYYGI--QIMVSIAGSFVYLM 275
 TCasGr51 YVLLNEKVEAIKTSPKMRHELQKLAQVYRILGETIETWNKLFY--QILLITFQSGLN 649
 DmelGr39b -----CTLDGNANRLCSLEFLALQKSHMQLHLYLFTFNDLFGW--SILGTYVVLFS 249
 AgamGr28 -----AVRLQEKIHLYLQDLHCVQLMTRSYEV--AIVTNVFLAINVTS 256
 TCasGr61 LYKNKYRKLIVDGKSEEQIVDICRSHDKLCDVCDVNRIFGF--IIIIGLQFNTIV 550
 TCasGr50 -----HFLALLDIVGHVHNELCNLCQVANSIYGF--QNFLVLTFSFICI 248
 AgamGr12 -----VYTARQWCLIVDRYGAAVNLVNEINHIFSE--LLLVMVQVQVQLC 251
 AgamGr36 -----QKQRWGRVDPVDVSELAEDFAALVDVDRVNRISY--QIIALITGVGMFSI 274
 AgamGr48 --YWSRRVRVQQICCDASDTIDRLCTLHQLTEIVRAIVSIFQL--PVLLMNLQFIVIV 276
 AgamGr49a -----AFLYRLINERVRTVIGSLLQLDDTRQVRDSATG--RERRFICNHIYQL 289
 AgamGr49b -----RQISTYEALKSVQRNHLVSSNVKSF IHLQRSTDTVSNK--LIVISFRYNAPTQI 279
 DmelGr2a -----VLEEQEDLEEAAMDRLIAVRLVYQRVWALVALLNRCYGL--SMLMQVGNDFLAIT 282

DmelGr32a ----VNPVNPALMEHFPEDSLFIYRMHNKLLRIYKGINDCCNL--ILVSFLGYSFYTVT 331
DmelGr68a -----WRELSNLIIEVLCKFRYITENINCVAGV--SLLFYFGFSFYTVT 257
AmelGr7 FENNRFLYRNEHVRNNTIRAVKQIHLEIKIVSFLNQTFGI--QILIQMVTSVVFTT 280
AmelGr8 -----KNPILLMELRLIKKQYTELIEAVQLLNHSYSL--KNEMILLMLFVDIT 275
AmelGr9 -----SLLLIKHLKHEEKHLEISDVVQLVNDTFII--HIVLVITTFSTIT 267
TcasGr57 -----AKTPPNKLNICYDLRRVRKNYNSICELVDAFNNIYGL--AMLEIIIVVITYVL 256
TcasGr41 -----DIVKEHQNLHNKICNLIDEFNECFGL--QILGILFVGVITYT 246
AgamGr34 LHVIEVHGCGIDAANLKLHLQPKVLYRYNDLYDICKLLDRYFGL--LFLLTFTSIFIVTT 289
AgamGr35 ----AVGEEELHSVGRREISDDLQVLAIVSRTIDLGQKIESYFGP--LFLTvyTALFSVTT 312
AgamGr39 ----SGSNKQLYPLSENETIKTIAMIYMKLGTAVQVYNRCFFI--HIFYIIASAFGLNL 294
AgamGr40 ----YKHSNSSVTEVGGIVRCIGDIHERLSETIVDFNYCFAL--QILLMMASAFGYTL 267
AaegGr28d -----RIPRTSRQTCQVQRASLHDLSDTVELFNECYT--QVVHALTAAFNFTI 273
AgamGr42 CFVEKHSGEQAASYRVLNMHIQGFTAIYSNLCDIAGIFCTIFAW--QPMMFCASLIVTVV 295
AgamGr41 LRKSITSDRLEDDLGSVLQLIKTLMLRHLKLSDISTNCSQCFCFVSVGTSVWVKSCFAYYT 299
AgamGr43 -----PFVQEHELISGERLTYMFVIHENVAKLAEFINGAYST--QIIAIVTVTFVNTL 290
DmelGr33a --FDYDNATIAENTGNTSEANLPDLFKLHDKILALSUITNGEFGP--QCVPYMAACFVVS I 336
AgamGr44 --GLVDRARGYARLQHAVYVRSKLNYLADARCRIVACCTETHNLYQQMLLSCSFCMFTY 276
AgamGr13 -----SVQKILPYYSLSVALYLLILFQELMSKVHISGESWLQFLITYRFTNFF 278
AgamGr45 --WLLQLLPHLGRGSEAAYESVRHLVRIHQGLLKAIGLLNCCFGVQNTILLLYQFVTLVEL 308
AgamGr46 EEQAHYERFRDAPKPPDRGETVSTTLEMLWLGQWATPAELLPWFWEVLSTLSWAFISTF 306
DmelGr93a ERYRMTKYRRMQLLCDFADELDECAAISYSELYHVNTSFRRIILQW--QILFYIYLNFINIC 290
AmelGr6 -----RQKTIQDLHNDLMLSSETLGSLSYSW--LLFWLGNLSIHSV 307
AmelGr10 -----SIRHSTLQQIWWLHCLANATEIINSVYAIQLLFWISSMSFNLMRS 250
TcasGr28 -----SVMITLALGNPYCFNS--SVYKVPVEHLLFI 200
TcasGr40 -----LTFSWYSKVFYSKIIISGSIFMTTTSFYRILNSGYNLTT 261
AgamGr3 -----ERLEEYRALYGEWQINEGINELFGFS--QACNIASSFAQMA 261
AgamGr4 -----AMYAQSVDRLSLKSVYQGLWELSDCINRNFGWS--QICNFTGNFVQLS 297
AgamGr6 -----RAISPEAIHRRVLHLKAMQNLKDLTGEVSDRFGW--QLFAVITMLFICTT 291
AgamGr7 ---PVSIGATSQVDRVPLRRMFVVKGYTLTLWHASKDLNGCCVY--SQLANLQNFIQCT 300
AgamGr47 -----METILKTVNRLSVLHYLHCDAIRLVNRISLS--LMFHFAGAMFVFLV 277
DmelGr8a -----SFPGFESFLRRRLVQKQRIYSHVYDMLKCFQGAFFNS--ILAVLLTINIRIA 263
AgamGr5 -----SMRYMEFLAGLKNALKALYSDFQASVALNEAYGR--TYLIIYCKNYIHIL 309
AgamGr8 -----GQICGYLRKLMEGFARVERLLELLNQAFGY--SLAIKLNINNIYIL 249
DmelGr9a -----DYKTLRLDYAHLAKVTRSLSHLFGLSLLLLNVLCLGDWIIIV 222
DmelGr59f -----RISEVQKIRMHANLIDFTKAVNRTFQY--SILLFVGCFLNFN 273
DmelGr77a ELYKGGQKWLALLELWRLHVVHQLLKLHRSICSLCAVQAVCFGL--FVPLECTIHLFFTY 323
DmelGr85a -----LWEIERLHTRFQCLIDLTSVCSIFRY--VTLAYMARNLWSGI 274
TcasGr27 -----QCEIVSDTLRNLDKIVTNGFRN-----VAESRKIFIEC 231
TcasGr48 -----LDLVLPIYSQLVFMCKKINKLYGH--QLLLTILTYLIWTI 248
AgamGr1 -----QLRSMIQLYRHILQIIIESFCVYGW--VLILIFFEHFLILT 262
DmelGr10a -----LRPGMLLHHCCELSDRLEELRRRCREIHDLQRESFRMHQFQLIGLMLSTLINN 282
DmelGr59e -----AFAVLVDAGGGSALMIEMRYTCNLIEQVHSQFLLRFGL--YLVNLLNLSLVSIC 264
DmelGr10b -----YSDLMKQLRRRERLLRIGRRVHRMFALVIAIALIYLVFFNTAT 250
DmelGr89a -----LLQKEYSWLRLIQRVVKLFQLG--IFLLVLSGFVNIM 238
DmelGr57a -----QLHVQELRIRQVSMIQELHYLIQEINRVYALSLWAAMAHDAMSTSE 271
DmelGr47b -----DSSEVHERIAYLFEMSKRCSFLLAELNGVFGFAAAGIFYDFTIMTCF 269
DmelGr58a ---HEERNSLTLSENKANRSLGKLAKLFLKFAENQRLVREVFRTFDLPIALLLKMFTVN 266
DmelGr58b -----KARKKWKALRSVAAMHLKTLRLARRIFDMFDIANATVFINMFTA 265
DmelGr98a -----LQKLAKLQAIHNSLWQAIRCLECYFQLS--LITLLMKFFIDTS 252
AaegGr93a -----AYKLTNSELKLSHDRLRIQYDKLYDVVVAIEIYSP--SILFLLVDFGQVT 276
TcasGr19 -----AFIIFTIHLFLYCVLIILLCIYFYAFILFTVHLLLLVC 257
DmelGr47a -----RLKMQHCLRLYSKLLLLCDQFNSQLGH--VAIWVLACKSWCQI 242
DmelGr58c -----IPREMGLMQILAAWRKLWRRRCRLDALLKQFVDIFQWQVLFNLLTTYIFSIIV 276

TcasGr38 LALFRTAAELQASQIKWTRIAYMALASVPFIFDSIHLCDVCYSTIGTVS----- 327
TcasGr46 LALFRTAAELQASQIKWTRIAYMALASVPFIFDSIHLCDVCYSTIGTVSKAGELIHQIQT 320
TcasGr1 QVIFVICVLVQSEKIVWLHLVYISFLGIIICADVFIYICHVCYATIQEVR----- 305
TcasGr123 ITIFFFTANVQAGELYFMSLLNPILSNVTFVIDVVYVCDVCYSTIEEAN----- 313
TcasGr62 ITIFFFTANVQAGELYFMSLLNPILSNVTFVIDVVYVCDVCYSTIEEAN----- 588
TcasGr25 INLFLSLQLAHQKLEFSACGFFLINGTLLHTIVGAVTVYLIMFIQFDIATTTKG----- 207
TcasGr59 INLFLSLQLAHQKLEFSACGFFLINGTLLHTIVGAVTVYLIMFIQFDIATTTKG----- 382
AgamGr2 AEFYFLYCSLTQQDVPIL--FRTAEVFLGLLAYIVYTALKCIVPFIVCWRTKT----- 336
AaegGr66a AQFYFLYCALSKQEVPII--FRSATVLQISIIQIFYIAVKCVICIYVCWKTKT----- 398
DmelGr66a AQLYFLYCATQYQSIPSL--FRSAKNPFITVIVLSYTSKGCVYLIYLSWKTSQ----- 412
TcasGr11 FQAYYLYYVATGKAS----FVTVPIMVCPVWMLMDEVVEIYLLVYACASTCEQA----- 317
TcasGr55 FQAYYLYYVATGKAS----FVTVPIMVCPVWMLMDEVVEIYLLVYACASTCEQA----- 317
TcasGr21 TALFLVAINFNKSSSEENEKTTQLDYFFTFWAFSNACEVMAIVWITSETCEEI----- 352
TcasGr56 TALFLVAINFNKSSSEENEKTTQLDYFFTFWAFSNACEVMAIVWITSETCEEV----- 352
AaegGr FDSYYILETIF'TNDSTDPF'TKVQFVTF'FFCQGF IHVVGVLNIVYVNSLTIHEN----- 355

AaegGr28a	FDWYIILETIFTDHTDSRFSRLQFVAFFLYQGLMHVIVVIKIVIFASLAVQE-----	250
AgamGr33	FNSYYVLDALLGSTSLDSPFSKQGFAMFFLCQAMVYGFVFNIVYSSSLVQEN-----	352
DmelGr28bB	FDAYYVLETLGKSKRESKFKTVEFVTFVFFSCQMILYLIAIISIVEGNSRAIKKS-----	349
DmelGr28bC	FDAYYVLETLGKSKRESKFKTVEFVTFVFFSCQMILYLIAIISIVEGNSRAIKKS-----	376
DmelGr28bD	FDAYYVLETLGKSKRESKFKTVEFVTFVFFSCQMILYLIAIISIVEGNSRAIKKS-----	346
DmelGr28bA	FDAYYVLETLGKSKRESKFKTVEFVTFVFFSCQMILYLIAIISIVEGNSRAIKKS-----	358
DmelGr28bE	FDAYYVLETLGKSKRESKFKTVEFVTFVFFSCQMILYLIAIISIVEGNSRAIKKS-----	353
AgamGr25	ATSYFLMVELVGDKD-----AVFAWIQALWLFIHIFRFLLTIEPCHITNVES-----	377
AaegGr43a	ATSYFLMVELVGERD-----AVFSWIQALWLFIHIFRFLLTVEPCHITNVEV-----	317
DmelGr43a	ATAYFLFLELLSKRD-----NGYLWVQMLWICFHFLRLLMVVEPCHLAARES-----	355
AgamGr37b	NCSS----SSAVINEVQCCEGANMMLPVCNVPCAWIILIL-----YLSR-----	314
AgamGr37d	NCSS----SSAVINEVQCCEGANMMLPVCNVPCAWIILIL-----YLSR-----	310
AgamGr37a	NCSS----SSAVINEVQCCEGANMMLPVCNVPCAWIILIL-----YLSR-----	324
AgamGr37c	NCSS----SSAVINEVQCCEGANMMLPVCNVPCAWIILIL-----YLSR-----	318
AgamGr37e	NCSS----SSAVINEVQCCEGANMMLPVCNVPCAWIILIL-----YLSR-----	318
AgamGr37f	NCSS----SSAVINEVQCCEGANMMLPVCNVPCAWIILIL-----YLSR-----	345
AaegGr28c	VCSFGLFRAF IYRNELFYMGVLFNFVVMYLYFFVLFVFFIAVG---SKITREGKRI-----	490
AaegGr28b	FSVVFV--YRAMISQDYSQKLNAINVYLSMNWYVMLLILVMIGVFDGKQKGRKT-----	339
AaegGr28e	FSVVFV--YRAMISQDYSQKLNAINVYLSMNWYVMLLILVMIGVFDGKQKGRKT-----	339
TcasGr14	DTMYLFIHRSRQEDTDTLVVIYTFNLFYLCFCFYWLLVMVAMF SRTQQSANKT-----	304
TcasGr49	DTMYLFIHRSRQEDTDTLVVIYTFNLFYLCFCFYWLLVMVAMF SRTQQSANKT-----	348
AmelGr4	YIIFYFLAIFLKNINVDLILVIN--GILWILLCPFGLLTSKITKIVNEIEKT-----	333
AmelGr5	YNFYFLFLHFVNDK-LNFLITN--AIIWIMLPLSLLALLTSKVTNINEIEKT-----	332
TcasGr16	GDSYIVMYVFFHLSADVRYVMVYLLKNNVLYGLLELFI LAK-IVTDLQCEANST-----	320
TcasGr22	GDLHTSIYIIFDFMFIYQHHKIVLDMGKNCVTVYFDLFYLSK-RASDLCNEANKT-----	223
TcasGr17	GDAYAVLNSVLFQNVYKPLPVLVLSIVKNCLSYCFNLYHLAS-KSNQLSREAKVT-----	307
TcasGr150	GDAYAVLNSVLFQNVYKPLPVLVLSIVKNCLSYCFNLYHLAS-KSNQLSREAKVT-----	307
TcasGr32	VYLH-----LAVMLGFQDIYIMVYIIVVIFWYTVNASTNIFLCEICNEGQTIILG-----	291
TcasGr54	VYLH-----LAVMLGFQDIYIMVYIIVVIFWYTVNASTNIFLCEICNEGQTIILG-----	291
TcasGr37	VYLQ-----HIFVKSRPSPATIISNVTVISWQAVCTFYNNILLCDSVAHTAGELLG-----	265
TcasGr53	VYLQ-----HIFVKSRPSPATIISNVTVISWQAVCTFYNNILLCDSVAHTAGELLG-----	265
TcasGr5	IYIQ-----VIVIGTKNTIETVAYSVIFILWHIVGTFSGIFLCDLIRREIANVQV-----	278
TcasGr12	DYVS-----CVVA-----LIILILQCGRVRSEVVKILN-----	248
TcasGr13	DYVS-----CVVA-----LIILILQCGRVRSEVVKILN-----	322
TcasGr104	TCLNFITNNLKSENEEFKEKLLAANLCLVIYTLVSVSLVMVTCDACTIASKQTIIS-----	310
TcasGr45	TCLNFITNNLKSENEEFKEKLLAANLCLVIYTLVSVSLVMVTCDACTIASKQTIIS-----	310
TcasGr98	VALNFFTSTLEIDNLYLKHKLEISSLVQTAITLVAMCGLVLI CDSAKSESQTVF-----	307
TcasGr52	SSLGFLLYASK-KQFTFEETF AIIHLSVFFVYTLVSVILIMGCDVVASNSRKTAE-----	244
TcasGr105	SSL-----YTCIAGYEFNANFTISYILFALFNTFGTILLIMTCSGVHSESQKLVG-----	290
TcasGr4	STFFYFFTTGN-----IIATYDKQFYIHNALIVRALFLFFQLWATVYTSS-----	284
TcasGr44	STFFYFFTTGN-----IIATYDKQFYIHNALIVRALFLFFQLWATVYTSS-----	288
AgamGr9a	ICILDTRNHIINIDG-----IMSIVANILWPLSDLKLSAVFLLGEGVNRMVEETA-----	308
AgamGr9c	VCILDVNSYLARKNRP-----SMMVILANILWPLSDVKKLAAIFLLGEGVNGMVEETA-----	307
AgamGr9b	ICILDYDLLLLNNS-----SGLLYLVYI I WPLSDIKKVMILFMLSEQVNRLEVEETA-----	358
AgamGr9d	ICLLAIVNSMTNPMGQ-----SKFYIIVVVVWPLTDVKKLFAVILLSEKTKQVVEETA-----	314
AgamGr9e	LKLYHVYDVFIRGVNEIVW--T-EHMLNVI ECMWLCFVKKL FIVMYISGMLQKQVEETA-----	310
AgamGr9f	LKLFHAYDVKRSTYRTVW--T-EQLLSASEWLWLSFVKKL FVVLYVSEVLKQKVEETA-----	307
AgamGr9g	VKMIDVGGALNDGTG-----DLTILILGCLWLLFDIKKLVLLLISERLQKQVEETA-----	310
AgamGr9i	ISLVDLGLLGDYDSDG-----DMSLIAVAGALWLLFDFKFFIVPLLLSECLKQKVEETA-----	311
AgamGr9h	SIWFSLSASSMQFQIVN--EESNLMLVSYLLWFLSDSKNVLVVAISSLLQKQVEETA-----	316
AgamGr9j	VAAYDVFNLRGES--KMILWDF--YRLLYRQVWEITYIVLMVLLAINCNATLSQVEETA-----	347
AgamGr9l	VAAYDVYDNYNLLD--VMSVWDK--FGLLFRQIQMIYPIIICMIGITGNLTSIQVEETA-----	337
AgamGr9k	YLVFECFYTYDAGS--PDSEMYNGFTDWAFSQFQSMYCHFLVLTVSSCERTRKMVEETA-----	329
AgamGr9m	YFMYEWFVRISTGQ--VVNGNYVSVQWITSQFQWLMYGNVLLLLVPSCEQASNEVEETA-----	332
AgamGr9n	YLAEHLYSTIETGT--MMPVADN--FFYSLFGQVWQTMYGALGYCISACGTASEEVEETA-----	299
AgamGr10	YLAEHLYSTIETGT--MMPVADN--FFYSLFGQVWQTMYGALGYCISACGTASEEVEETA-----	299
AgamGr11	YLVFDIYAVLALDRPVFMENLEIDYVQWALRQLWQTIYGA VVLLTVTGCRTCGELQOTA-----	304
DmelGr23aA	TNAYWMIMGIYDG-GNVRS-----LIFNGATGIDFGTPIATLFWHGDSGAENGRQIGC-----	296
DmelGr23aB	SNSYWLFDIRTRPWRIYA-----ILLNLGFI FNVALQMAAACWHCQSSYNLGRQIGC-----	300
DmelGr39aA	L--IFYISNLGEGFHSSND-----LVLF--CWLAPMLFYLLPLVVNDIHNQANKTAK-----	299
DmelGr39aB	G--VIYLTMTVIQTKKSIV-----LKLITNVVWLSPTFMTCAASFMSNRVTIQANKTAK-----	308
DmelGr39aC	SGPFYLVSTIFEGFRQNWQFS---LMSFTAILWLSLPWIVLLV LAMGRNDVQKEANKTAK-----	308
DmelGr39aD	SGPFYLVSTIFEGFRQNWQFS---LMSFTAILWLSLPWIVLLV LAMGRNDVQKEANKTAK-----	298
DmelGr98c	HVVNWAIIIRSIDPNDCCQLN-----RLGSTIFLSFNLLLT CFFSECCVKTYNSISYILH-----	328
DmelGr98d	QIVN WALIKSVNPNECCQYR-----RVGTCLLLSINIFLSCLYSEFCIQTYNSISRVLH-----	326
DmelGr98b	HMVNWAYINKFLYDSCCQYE-----RFLVCSTLLVNL LLLPCLLSQRCINAYNCFPRILH-----	326
AgamGr51	YSVR----PPASPVGNGM-ADDFKAYINPLIFFLYQCVQLYLLV LIPSVYTDHAKMMRL-----	340
AgamGr52	VSVYYMYTSTMVEVRRGFGVEDVTKYFNVSVTFFLYLAVQLY YMMSIPSQYTERSKMLSI-----	337
DmelGr94a	SLICHLLGITVGFYSLYYAIADTLIMGKPYDGLGSLINLVFLSISLAEITLLTHLCNHL-----	325
DmelGr97a	SMLMNLGITMGCYNQYLAIADHYINEEPFDLFLAIVLVVFLAVPFL ELVMVARISNQT-----	346

DmelGr93b SLAQSLLAMSMVSY--HAILR-RQYS--FNLWG-LVIKLLIDVLLTMSVHSAVNGSRL 329
DmelGr93c ILLGKIFATILSY---EVIIRPELYARKIGMWG-LVVKSFADVILLTLAVHEAVSSSRM 325
DmelGr22d IVCFYIMIVYRISLSKMSFFVMLIMFPLAIANNFMDFWLS-----MKVCDLLQKTGRQTSM 319
DmelGr22e LGIYFFIIYSISLNSKSLDFKLLVVFQALVIN-MLDFWLN-----VEICELAERTGRQTS 321
DmelGr22a IVGHVLCWLNITRFSLLVIFLLFPQALI INFWDLWQG-----IAFCDLAESTGKKTSM 321
DmelGr22b VVIYFLIVYGLSMR--TYSIFLVAFPNSLLINIWDFWLC-----IAACDLTEKAGDETAI 318
DmelGr22c LAIYSWIVLDISMN--INFIYLLIFPLFLLVNVWNLWLS-----IAASDLAENAGKSTQT 315
DmelGr22f VQIFFLIVLVGSMN--KRYIYLVASP-QLI INFWDFWLN-----IVVCDLAGKCGDQTSK 310
DmelGr36a ATTYITYSLAINGI--EELHLSVRAAALVFSWFLFYYSAILNLFVMLKLFDDHKEMERI 323
DmelGr36c GTCYLAYSILKHGY--ENLSMTLSTVILAYSWCFFYYLDGMLNLSVMLHVQDDYWEMLQI 323
DmelGr36b GTSYMSYSIYKGP--HNLKLSAKTSIIIVCILITLFLYLDALVNCNNMLRVLDHKKDFLGL 323
DmelGr59d GTSYLLFSISKYGN--FGNLLVIITLCGIVYFVYVVDWCWNAFNVFYLLDAHDKMVKL 322
DmelGr59a INACIGTIYSTTDQ--EPSLEKIFGSLIYWVRSFDFFLN-----DYICDLVSEYQMQPKF 304
DmelGr59b IQAYWGAFTFDLS--TPFFWVYVGSVQYHVRCLDYYLI-----DNMCDVAVEYHDSAKH 305
AgamGr26 LQFFEIYRAT---TVRPWTVTDTYLLVYTVLWIVLHAAKVMILYPAHLVQREDRDTGPI 350
AgamGr27 LELFNVIYKATGRGSKRVWSASEGFRLLVHTLLWIGLHGAKILLILYPGHRARVECERTGPT 333
AgamGr29 TELLQLYQGVKAGAFDFVIGS-----KVLNSAQKILMLFLFAYPNRMIQTQNIIRGLKL 345
AgamGr31 TELLQLYQGVKAGAFDFVIGS-----KLTNSALKFAMMVAYAIANRTIQTQNIIRGLKL 346
AgamGr30 VILAELYFDNYD--LPLVFGI-----CLTHAAVYFMFFLI IAHANHAIIMENERTLLL 337
AgamGr32a MLLLELYHNI SHPVMPEYCLWV-----LFLHAIHVHFTFFVVIATSNHAIQQENERTMLL 351
TcasGr2 IQLFN-SLRMRN-DLERLYFYSFALLITRIVCLCLFGAKVHDES IKPLLTINSVPTEI 359
TcasGr9 FQVFE-SFYLHKATLETVYFISLGLLILRLVSVCFYGSWINEESKLSLDDLSSVYPREV 360
TcasGr7 IQLFN-SLRQMKN-NLERIYFYSFGLIVRTVCLCLFGGKVNDDESTQPMLVLNSVSADV 361
TcasGr30 IQLFN-SLRQMKN-NLERIYFYSFGLI-----KLTNSAQKILMLFLFAYPNRMIQTQNIIRGLKL 331
TcasGr29 IQLFN-SLRQMKN-NLERIYFYSFGLIVRTVCLCLFGGKVNDDESTQPMLVLNSVSADV 361
AaegGr64f VQLYN--IFDPKQTTVTTFYFYSLLFLICRCFVMLYVTSSIYEASLKPLELLRDFATSS 318
AaegGr64a3 VQLYN--IFE-----KLTNSAQKILMLFLFAYPNRMIQTQNIIRGLKL 268
AgamGr14 VQLFN--SFDLKPTTVTTFYFYSLLFLIGRCFLMLFVSSISRASEKPLETLRRFPSTN 382
AgamGr18 TQLFN--GFQRRRVIANYVYFYSLLLLMFRTIVMLYVSGVYAASTSPQLLRNVPSQH 354
AaegGr64d TQLFN--GFQRRPAMTMYFYSLLLLFRITLCLMLYIGSGVHVASMSPLNLRNVPSKY 386
AgamGr17 YQMYN--AFQFSASLISELYFKSFLAFLIFRTLVMMLLIASNIHVASLRPLDILRSVPMSC 343
AaegGr64c YQLYM--SVQLDASSMTTFYRFSLLFLILRLTVMMLLTSSRVYVASRKPLEILRAVPMSS 368
DmelGr64c VQIYH--SFQSKGNYADELYFWFCLSYVIRVNLMMFAASSIPQEAKEISYTLYEIPTEF 347
DmelGr64d VQVYH--SFQVKGAFMDELYFWFCLLYVIRLNMMLLAASSIPQEKDISNTLYEVRSSP 356
AgamGr20 LQTLN--ALEDKPYDINDWYFRYSFTFLILRITSVKLWFAADVENSVRTHKLVQKIRSEH 374
AaegGr61a LQIMH--ATLEQPFILNRVYFYSFSLLLRTRFLMFWYSSQVDASHQPCRLLLRVPNHE 371
AgamGr21 LQILH--VSKKLANTVEDAYYFYSLFLIGRTLVIRTVIVFLSAAHIHDCAKKPLDIIMKIPNVG 399
AaegGr64a LQILN--VSQKLRYPMDVYFYSLLFLMGRATLFLCAAHIHAAKRPLDIVAKIPNNG 282
DmelGr64a YQLLN--VFNKLRWPINYIYFYSLLYLIGRTAFVFLTAADINEESKRGLGVLRRVSSRS 393
DmelGr61a NQALA--IFTKLRHPINYVYFYSLIFLLARTSLVFMTASKIHIDASLLPLRSYLVPSDG 376
AgamGr15 VQILN--SMNSRPTLVHTVYFWFNLIILIGRTLAVAMFAAEVNDSEKRP I EVLRTIPREG 380
AaegGr1 ASILN--SLNTHPTLVHTVYFWFGLAFLIGRTLAVSMCTAAVNDSEQRPFVLRRAIPRDG 384
DmelGr5a LQLLK--SINTMPSSAHAVYFYSLLFLLSRSTAVLLFVSAINDQAREPLLRLLRVPLKG 380
DmelGr64f VQLLR--SINTMPSSAHAVYFYSLLFLLSRSTAVLLFVSAINDQAREPLLRLLRVPLKG 380
DmelGr64e GKILK--SMQAKPSIWHALYFWSFLVYLLGRTLILSLYSSSINDESKRPLVIFRLVPREY 399
AmelGr1 IQLL--FSFNPMRGIIIEKIYFGFSFGFLARTTVVSLCAATIHDESLLPAPILYSVSSSS 328
AmelGr2 LQLLNGLSISDKNSVLSEAYFFGSFAFLICRTCAVTLTLTARLHDQSKQALPYLYNCSTSS 418
AgamGr16 VQLVN--NSS----FIVTSYFWSLFLHIGRIVAVSLYGSAIHDEYCRTRTLFYNLDPDEY 349
AaegGr64e IQLIG--VLKPYPGIIVAIYVWYSLAHLMTMVMVAVYAAAIHDESRRILPTFRTLPTQY 371
TcasGr6 SEIVDHGIRFSFKEIGLLVDSYCYLFLFVFCDCSHQASLNIARRVQVTLQVNLVQVDP 328
TcasGr26 SEIVDHGIRFSFKEIGLLVDSYCYLFLFVFCDCSHQASLNIARRVQVTLQVNLVQVDP 328
TcasGr33 SEIVDHGIRFSFKEIGLLVDSYCYLFLFVFCDCSHQASLNIARRVQVTLQVNLVQVDP 328
AgamGr23 SEIIDHGFGFSFKEIGLIVDTVYCSTLLFIFCDCSHNATLQVAQGVQDTHLLSINLLKVDQ 412
AaegGr21a SEVIDHGFGFSFKEIGLIVDTVYCSTLLFIFCDCSHNATLQVAQGVQDTHLLSINLLKVDH 404
TcasGr10 TEIMDQGI--SFKEAGLFMIAFYCMTLLYIICNEGHATRKMGPEFRERLLNVNLSAVDQ 358
TcasGr39 TEIMDQGI--SFKEAGLFMIAFYCMTLLYIICNEGHATRKMGPEFRERLLNVNLSAVDQ 358
AgamGr22 SEIEHGA--TYKEVGLFVIVFYCMSLLFIICNEAHHASK-----RERLLNVNLTAVDK 377
AaegGr21b SEIEHGA--TYKEVGLFVIVFYCMLLFIICNEAHASRRVGLNFQERLLNVNLTAVDK 383
DmelGr21a SEIIDHGA--TYKEVGLFVIVFYCMLLYIICNEAHYASRKVGLDFQTKLLNINLTAVDA 384
AgamGr24 SQISDGF---VKDIGLAVTAFCSVGLLFYICDEAHYASFNVRTNFQKLLMVELSWMNT 308
AaegGr63a SQISEGFG---IKDIGLAVTAFCSVGLLFFIICDEAHYASFNVRTNFQKLLMVELSWMNS 373
DmelGr63a SQLSEGFG---IKDIGLAVTAFCSVGLLFFIICDEAHYASFNVRTNFQKLLMVELSWMNS 402
TcasGr3 QQLQAGFS---TKDIGLTINAGLAFILYFICDEAHYASNCLRVQFQKLLMVELSWMND 364
DmelOr83b YQATKINGVNVYAFTVVG--YLYGALAQVVFHFCIFGNRLIEESSVMEAAYSCHWYDGSEE 437
AgamOr7 YQATKIDGVNVYGLTVIG--YLYGALAQVVFHFCIFGNRLIEESSVMEAAYSCHWYDGSEE 429
HvirOr2 YQATKINGINVYAFSTIG--YLSYTLGQVVFHFCIFGNRLIEESSVMEAAYSCHWYDGSEE 423
TcasOr16 YQATKITGVDKYAATVLG--YLLFALAQVVFHFCIFGNRLIEESSVMEAAYSCHWYDGSEE 525
TcasOr22 YQATKITGVDKYAATVLG--YLLFALAQVVFHFCIFGNRLIEESSVMEAAYSCHWYDGSEE 564
AmelOr2 YQATKIHAVDTYAASVVG--YLLYSLGQVFMCLIFGNRLIEESSVMEAAYSCHWYDGSEE 429
TcasGr31 IQLFG--SMKIVKGTLKTAYYLISFALLIMRLISVCLCGASVHSESS----- 223

TcasGr35 YKLEASFDLTYET----- 201
DmelGr59c GSIYFSVCSILYSSTGFGSTYWGLLLIVLSTASFYMDNWLSVNI GFHIRDQDELFRVLA 329
DmelGr92a ALIYKVLIALIGFNVAVEFYLNSEFIWILLGKHVLDLFLVTVSVEGAVNQFLNIGMCFG 323
DmelGr28a FDDFYILEALINPKRLDVEFADEFFAFFLMLQLIWYIVIVLVEGSSRTILHSSYTAIV 366
DmelGr64b FQLFN-SFKNIGVDFLVMLAFWYSLGFVAVRLLTIFVASSINDYERKIVTALRDVPSR- 340
TcasGr71 NYIDEVFNNGFYDKKQYIGVVANVGVAFMINVGTVTLLILSCDAVLEEVTLLLLAYKI 288
AgamGr19 YQLFH-LVDRDFFIIVTVFTYFSLFFIILRTFLTMHYCSAVHEVARKPLKLFRRVPTS 336
AaegGr64b YLLLH--SLKPHAYAISFVYFWYTLFCFLIGRTLTLWMAAELNREKRSALRVVQRISSDG 284
DmelGr93d VVWYKMIIDLGFSDFRISWFSLNKLIQTLLPVLAIQEAANQFKQTRERALDIFLVGKSK- 321
TcasGr34 NYIDDLFFFRFEKSKFEPFLISNISLVSLIFLNFCTLIIMCDCVRSEASKVVKN----- 270
TcasGr43 DNVDTIMYEKTNVTFVHLAVLNILRVGKNFVCLLSLIIILCDVVKQAQKSLVLTVEMRWY 294
TcasGr47 QDLSDFIYKYDQAQLVSLALLMQLTQLVPALFVIYLCGRVMEEQNKIRLITFEMNKSFER 270
AmelGr3 ITPYFLILQAGERHEWIFLIVQGGWICIFHITRMLIIVQPSYSAIAEAKKTAVLVSQLLSC 385
AgamGr32b IELLEFYQS I KLGTLTPTTIFMKFLYAASKFSFYILIAYPNRLIQENQKALFMYRIKR 356
AgamGr50 FSVSRWRVRCALYGILTTVLYRSVQIFITYTSLVQDLEAGSTNALRNIINPLAFFISEV 316
TcasGr20 VTPYYLLIEVCNAGYLPFILLQVAVIVLHLIRLMYQVTTNLVLLKLLTSPLLP----- 335
TcasGr79 GKQYNIASSKTLKLSINIISLVQLWIFQLYLLILCDQILREFDQIVVILSKVKSILN--- 295
TcasGr15 YRMETNVVFNRSRKNLDVMKSFVNFRLPSFTAARFIEDRINAESRKPRIILFVDSSEIY 326
TcasGr60 GDLYVTLYIILTNNQAKYCTTLIGLIKNCVIVIFELYLHVQCNVSTEVIGNILRLMHR 289
AgamGr38 FYTFAFTLIRSVPALAEIVFNAGPIISYSMFAYNVFIVAFYGNALKQQKIGTQLDKAI 335
TcasGr51 SCINFPLGLDRGNFDIEIALCNGIFLLLTGLSLLQMVISMDSTVEEAKTFVDRCYKMQE 709
DmelGr39b VNIYWTQQVLVEVYKYLYATFSVFPVSPFNILVFCRCGEFCQRQSVLIGSYLRNLSCH 309
AgamGr28 LLLLEIYQYLQANELQANSIIVSNVMWLALYICLLLMVLYPCDMIKREQMRFGTILFEL 316
TcasGr61 FAFICYYSISIRPISTLGIWFFWVSLRLRIYELARKAAFAHLNSNEARATLNWVSKLIIRSN 610
TcasGr50 TQFYCYDSDGNSDNLTDVYFTLQWAFQLQILEILALAYLCKDKVQLKIGEIKYS----- 301
AgamGr12 CQYFILFCSTVDGLVP IVTGLTVLHTQLWESLFLMLLVGYACDSCHNQIQDVNVAVRN 311
AgamGr36 FVIYATSFSYVGRSRETRTLILLTACVVYIIMIGLIFFTGVVENTSNDIVGLLHEAI 334
AgamGr48 SRIYFVYILSAQVKHRSYMSYHRFFNSILYICFEAVQCFLALGSSVIAQEARRPGTTM 336
AgamGr49a TILRTHSALTCKIQNIVEFYNTPLALIMLYQFLIIESEAEKTGVLLNEFLPTDNP--- 346
AgamGr49b FYAYTSIVQDIKNDVDVPLGYTMSILFAVFEAVQFYIIVSASEITEEVKRHAEKTVL 339
DmelGr2a SNCYWMFLNFRQSAASPFDLQIVASGVWSAPHLGNVVLVLSLLCDRTAQCASRALCLHQ 342
DmelGr32a TNCYNLFVQITGKGMVSPNLIQWCFAWLCLHVSLALLSRSCGLTTTEANATSQILARVY 391
DmelGr68a NQSYLAFATLTAGLSKTEVADTIGLSCIWVLAETITMIVICSACDGLASEVNGTAQIL 317
AmelGr7 NLLHLLYRVWLNFTLPELLQELISVIFWILLIYGSQILYVNHVCASTNSEAVNIGNIICE 340
AmelGr8 FNLYIYLILYNTEVGKITKINSTLGFIFVYIVVISISMIEIRVQMKKIGSNIHKILV 335
AmelGr9 FNLYFFLLKMYSPKTENIKWFIPNLAPALFFFIFKAMI IWICESTTNEAKKIKWTLYDA 327
TcasGr57 NLTDLFLVYGMKSRNIEGVSFGTNLVILCALWITLTLFTLLAYGCAGATSEAEKIAK 316
TcasGr41 YTIFFLLIFGSGSATPENNVSVVYVLLIYILESLLYMVTKLVVVTFKFKIKKIQIFGIMI 306
AgamGr34 IQLYYSYTYLWFTGENGFITWSLMVCLNTISINLGVLLTIVLLCEKISNKTKHANDLLA 349
AgamGr35 IQSYCYLHLTAKGDRGLS IETLVLSGGIILYNVIAIVALPYICEQVESESKLLMSYLSK 372
AgamGr39 VSCFTTIHVVYLAASSYSIVDPIIMSQFLSFFILIMQVMFAGNLLHKKAKQTAILLHK 354
AgamGr40 FSIFGLIHAFSQVEEDES HQVSMNMMVYGCYLSFIIQVVVAGSLVTKCKRVTIVFHKA 327
AaegGr28d FSIFSVIHSNAGQTDDEVTRVTVWNAVMDGFFVYVYTLQLIVAASIVNETCKRSSVMIIKA 333
AgamGr42 FSILTIHMLTNSAPIVLAALALISALTIYTLFLVVLVVKLGSGLKREGKQTAIVHKA 355
AgamGr41 STLFQVFITMIHVLISQLITTFAFIRVMFYHYNETELNDSIYTIGTTSYCCLPITITWI 359
AgamGr43 FGFFIVTKLLFWNYQMLDLILRACRYAFECIPACLLVYYMLIVCASTHSELFKSASLLHK 350
DmelGr33a FGIFFLETKVNFIVGGKSRLLDYMTYLYVWISFTTMMVAYIVLRLCCNANNHKSQSAMIVH 396
AgamGr44 VTQLLYLHYRTRSELSFAALGHETFTCLLCYFEVYCIAEACELVREQSLKTQKLLRLNL 336
AgamGr13 YQFTHFYTSLGNPSPHILEAMGTMMILVYGMYTAQLIAECYAISEKSKQIKSTVHRLSL 338
AgamGr45 GYNTCMMSVRYAEAKVQGDSTEDFLETVYVWVWFVEIFVLVYFSDHTEVEARRTVHLL 368
AgamGr46 RILRICNVCSAKNEVIEEKHSTHKGSLVRCWCDVSYCFQFLHTCMCVCLLSLFC DTP 366
Dmelr93a LMLYQYILHFLNDDEVVVFSIVMAFVKLANLVLLMMCADYTVRQSEVPKPLDIVCSDM 350
AmelGr6 SNLYFIIDWVILTPWTNIAWPLIINMWCWLIGFITQLLALHIACDYTINEIFNRKIPNSR 367
AmelGr10 IYSLKVFKLSDYGKIRESMVLTDCAWNLVLTITVCHMTAHQVDLSLNQTEISPSRRTYG 310
TcasGr28 ANAFITSQSCENATLYSGDEMYFRVAFPSVFTLIDYSLWKACFVEVRR----- 248
TcasGr40 FGSFIFNANSAIEGIIFFNLAKSWPQLIEKWSRVEMALDNWKNKSLKRKFYLTICTIMS 321
AgamGr3 FDLYWVYAMWQKQQRGVELQIFCFVPTPVIIGFLMHAAKKHQLEMDAVQGTVLDMNF-- 319
AgamGr4 CDLYWLYMSMKWFEATEYKVVIVITLLPSTSIIVLLLSAESCGLGVAASLQSALLDIPMG 357
AgamGr6 IDGYWMYASLHYDGNLYKVESFLCGISPVLMMFVLFNTCQKCVDEGEITFYVLSVLRV 351
AgamGr7 CDLYSLYALYLNQLDDIFAYILSIVATFTALGVVLAACENCKNQVGMGQLLYKRLHG- 359
AgamGr47 FGLFTIYNFNSGTWAFRIMAIANGAWIAFYLAAILSVITATTAQTSGRMTGDIVHQII 337
DmelGr8a VDCYFMYYSIYNNVINNDYLLIVPALLEIPAFIYASQSCMVVPRIAHQHLNIVTDSGCC 323
AgamGr5 SNSYVVFWLLNNQRHHAAGIISRLICRIILLGATFYINSCAMKSAQNRHLRHLTMDLGI 369
AgamGr8 TDTYWIHVHGMMSGKVFSDVLECECLSSKFCILMINLHSNERILSEFHRTRVLLHCHILRW 309
DmelGr9a CNVYFMVAYLQVLPATLFLFGQVMFVVCPTLIKIWSICAASHRCVSKSKHLQQQLKDLPG 282
DmelGr59f LVLFLVYQGIENPSMADFTKWCMLLWLAMHVGVKCSILHFNQSIQNEHSTCLTLLSRVS 333
DmelGr77a FMKYSKFI LRKYGRSFP LNYPFAIAFLVGLFTNLLLVLPTYYSERRFNCTREIKGGGLA 383
DmelGr85a VAGYLLVRFVIGNGLQDVELVYLVFSFITCIQPLMLSLLVNSMTSTTGLSLEVTRDILKI 334
TcasGr27 IEQYNVILRYTKIVSDTYQGIILVVQFFCSLVALCLTMYKLSLTEDLYFAIYEMHWYDAS- 290
TcasGr48 YEMYHLAILWSCTSTNCPFLIMLALS YTVIQEVMFLFTILWNCQNTRVASEDFKAIWYSI 308

AgamGr1	DRSFFAIRMYRMPMGFSIQQVLSMMMTWVFLALNDMLLVGACTATEKALQQFEQQQLCEV	322
DmelGr10a	LTNFYTLFHM LAKQSLEEVSYV VVGSVYATGFYIDTYIVALINEHIKLELEAVALTMR	342
DmelGr59e	VELYLIFNFFETPLWEESVLLVYRLLW LAMHGGRIWFILSVNEQILEQKCNLCQLLNE	324
DmelGr10b	IYLYGTFMIQKHDALGLRGRGLKMLLT VVSFLVILWDVVLLQVIC EKLLAEENKICDCPE	310
DmelGr89a	VNIYAFMSYVSLHGVPLTISNNCLVLAI QLYAVILAAHLQVRS AKLRKKCLQLEYVPE	298
DmelGr57a	LYILFGQSVGIGQQNEEENGSCYRMLG YLALVMIPPLYKLLIAPFYCDRTIYEARRCLRL	331
DmelGr47b	VYVICQKLLEREPWDPEYVYMLLHVAI HTYKVVITSTYGYLLLR EKRNCMHLLSQYSRYF	329
DmelGr58a	VNLVYHGVQFGNDTIETSSYTRIVGQW VVISHYWSAVLLMNVVDDVTRRSDLKMGDLLRE	326
DmelGr58b	INILYHAVQYSNSSI KSNGWGILFGNGLI VFNFWGTMALMEMLDSVVTSCNNTGQQLRQL	325
DmelGr98a	ALPYWLYLSRVEHTRVAVQHYVATVEC IKLEIVVPCYLCTRC DAMQRKFLSMFYTVTDD	312
AaegGr93a	FELYMFYCDLSHASLDDDDLHMI AF SFSVAIFS FTEILFI INGTSKFSDKLMQALEQLQR	336
TcasGr19	IYYFYMHLLFCFAFIIFTMHL LFLLCIYYFYCALIILLCIYYFCRAFIIFP-----	309
DmelGr47a	TFGYEIFQMVAAPKSIDL TMSMRV FVIFTYIFDAMNLF LGTDISEL FSTFRADSQRILRE	302
DmelGr58c	LFRLWIYLEFDFKNFHLWKGIYAIIFL THHVEIVMQFSIFEINRCKWLG LLEDVGNLWDI	336

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TcasGr46	EDHDIIDEIEMFSLQIANEQVEFNAAGFFP INYTLVFSVLKQYVMQQQVKNFRHSVRSVF	380
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AgamGr9c	LCTR-----	311
AgamGr9b	LCTR-----	362
AgamGr9d	LCTR-----	318
AgamGr9e	LCTR-----	314
AgamGr9f	LCTR-----	311
AgamGr9g	LCTR-----	314
AgamGr9i	LCTR-----	315
AgamGr9h	LCTR-----	320
AgamGr9j	LCTR-----	351
AgamGr9l	LCTR-----	341
AgamGr9k	LCTR-----	333
AgamGr9m	LCTR-----	336
AgamGr9n	LCTR-----	303
AgamGr10	LCTR-----	303
AgamGr11	QLVR-----	308
DmelGr23aA	LISK-----	300
DmelGr23aB	LISK-----	304
DmelGr39aA	MLTK-----	303
DmelGr39aB	MLTK-----	312
DmelGr39aC	MLTK-----	312
DmelGr39aD	MLTK-----	302
DmelGr98c	QIGC-----	332
DmelGr98d	QMYC-----	330
DmelGr98b	KIRC-----	330
AgamGr51	LNYS-----	343
AgamGr52	LG-----	339
DmelGr94a	VATRRSAVIL-----	335
DmelGr97a	VETRRTGELL-----	356
DmelGr93b	IRR---LSF-----	335
DmelGr93c	MRR---LSL-----	331
DmelGr22d	ILKL-----	323
DmelGr22e	ILKL-----	325
DmelGr22a	ILKL-----	325
DmelGr22b	ILKI-----	322
DmelGr22c	VLKL-----	319
DmelGr22f	VLKL-----	314
DmelGr36a	LEER-----	327
DmelGr36c	LGKR-----	327
DmelGr36b	LEER-----	327
DmelGr59d	LNKR-----	326
DmelGr59a	FAP-----	307
DmelGr59b	SWS-----	308
AgamGr26	LCHFNP-----	356
AgamGr27	LYEIASR-----	340
AgamGr29	LYQLNQP-----	352
AgamGr31	LFQLHSS-----	353
AgamGr30	LLDINCI-----	344
AgamGr32a	LHEFKCS-----	358
TcasGr2	-----	
TcasGr9	-----	
TcasGr7	-----	
TcasGr30	-----	
TcasGr29	-----	
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DmelGr64e	-----	
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AmelGr2	-----	
AgamGr16	G-----	350
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TCasGr6	A-----	329
TcasGr26	A-----	329
TcasGr33	A-----	329
AgamGr23	P-----	413
AaegGr21a	P-----	405
TcasGr10	K-----	359
TcasGr39	K-----	359
AgamGr22	A-----	378
AaegGr21b	A-----	384
DmelGr21a	A-----	385
AgamGr24	D-----	309
AaegGr63a	D-----	374
DmelGr63a	D-----	403
TcasGr3	E-----	365
DmelOr83b	-----	
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AmelOr2	-----	
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TcasGr35	-----	
DmelGr59c	DR-----	331
DmelGr92a	N-----	324
DmelGr28a	HKILN-----	371
DmelGr64b	-----	
TcasGr71	RQVFP-----	293
AgamGr19	-----	
AaegGr64b	-----	
DmelGr93d	-----	
TcasGr34	-----	
TcasGr43	CQTAT-----	299
TcasGr47	-----	
AmelGr3	TFEAN-----	390
AgamGr32b	ISCS-----	360
AgamGr50	GQVYFMVSSATFSR-----	331
TcasGr20	-----	
TcasGr79	-----	
TcasGr15	N-----	327
TcasGr60	-----	
AgamGr38	NSTNN-----	340
TcasGr51	QFTLN-----	714
DmelGr39b	PSIG-----	313
AgamGr28	SHSG-----	320
TcasGr61	P-----	611
TcasGr50	-----	
AgamGr12	NVGS-----	315
AgamGr36	QR-----	336
AgamGr48	NVFPVN-----	341
AgamGr49a	-----	
AgamGr49b	LN-----	341
DmelGr2a	VSVDLR-----	348
DmelGr32a	AKSK-----	395
DmelGr68a	ARIYG-----	322
AmelGr7	FYEP-----	344
AmelGr8	HTFD-----	339
AmelGr9	FSDS-----	331
TcasGr57	ICFYWLN-----	323
TcasGr41	TKACMSASNLIQTPN-----	322
AgamGr34	DLQLR-----	354

AgamGr35	LS-----	374
AgamGr39	-----	
AgamGr40	VCYG-----	331
AaegGr28d	AAYG-----	337
AgamGr42	NQSS-----	359
AgamGr41	AGHIKKR-----	366
AgamGr43	LLQYKSN-----	357
DmelGr33a	EIMQ-----	400
AgamGr44	SP-----	338
AgamGr13	IPGQ-----	342
AgamGr45	RMPN-----	372
AgamGr46	-----	
Dmelr93a	DER-----	353
AmelGr6	LILWAP-----	373
AmelGr10	DIT-----	313
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TcasGr40	-----	
AgamGr3	-----	
AgamGr4	N-----	358
AgamGr6	LP-----	353
AgamGr7	-----	
AgamGr47	RKHQN-----	342
DmelGr8a	SCP-----	326
AgamGr5	QIKC-----	373
AgamGr8	QLR-----	312
DmelGr9a	-----	
DmelGr59f	YAR-----	336
DmelGr77a	FPSR-----	387
DmelGr85a	SHKKS-----	339
TcasGr27	-----	
TcasGr48	LIKK-----	312
AgamGr1	GKMAN-----	327
DmelGr10a	FAEP-----	346
DmelGr59e	VCSS-----	328
DmelGr10b	DVAS-----	314
DmelGr89a	G-----	299
DmelGr57a	VEKLD-----	336
DmelGr47b	SGQD-----	333
DmelGr58a	FS-----	328
DmelGr58b	SDLP-----	329
DmelGr98a	RRSS-----	316
AaegGr93a	IG-----	338
TcasGr19	-----	
DmelGr47a	TS-----	304
DmelGr58c	NYSGRQ-----	342
TcasGr38	-----WCELNFDWSS-----	337
TcasGr46	FLSEIFGLVNLKYRETYFRLSKTKTFCTLVLTALVYCSLAI FVLCELLIEGTT SILINVPS	440
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DmelGr28bD	-----	
DmelGr28bA	-----	
DmelGr28bE	-----	
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AgamGr37d -----
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AgamGr37c -----
AgamGr37e -----
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AgamGr9n -----
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DmelGr22f -----

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TcasGr40 -----
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AgamGr6 -----
AgamGr7 -----
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AgamGr8 -----
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DmelGr28bD	-----	
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DmelGr28bE	-----	
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AgamGr37a	-----	
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AgamGr9b	-----	
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AgamGr9e	-----	
AgamGr9f	-----	

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AgamGr9h -----
AgamGr9j -----
AgamGr9l -----
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DmelGr23aB -----
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DmelGr98b -----
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DmelGr22b -----
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AmelGr2 -----

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DmelGr28bC	-----	
DmelGr28bD	-----	
DmelGr28bA	-----	
DmelGr28bE	-----	
AgamGr25	-----	
AaegGr43a	-----	
DmelGr43a	-----	
AgamGr37b	-----	
AgamGr37d	-----	
AgamGr37a	-----	
AgamGr37c	-----	
AgamGr37e	-----	
AgamGr37f	-----	
AaegGr28c	-----	
AaegGr28b	-----	
AaegGr28e	-----	
TcasGr14	-----	
TcasGr49	-----	
AmelGr4	-----	
AmelGr5	-----	
TcasGr16	-----	
TcasGr22	-----	
TcasGr17	-----	
TcasGr150	-----	
TcasGr32	-----	
TcasGr54	-----	
TcasGr37	-----	
TcasGr53	-----	
TcasGr5	-----	
TcasGr12	-----	
TcasGr13	-----	
TcasGr104	-----	
TcasGr45	-----	
TcasGr98	-----	
TcasGr52	-----	
TcasGr105	-----	
TcasGr4	-----	
TcasGr44	-----	
AgamGr9a	-----	
AgamGr9c	-----	
AgamGr9b	-----	
AgamGr9d	-----	
AgamGr9e	-----	
AgamGr9f	-----	
AgamGr9g	-----	
AgamGr9i	-----	
AgamGr9h	-----	
AgamGr9j	-----	
AgamGr9l	-----	
AgamGr9k	-----	
AgamGr9m	-----	
AgamGr9n	-----	

AgamGr10 -----
AgamGr11 -----
DmelGr23aA -----
DmelGr23aB -----
DmelGr39aA -----
DmelGr39aB -----
DmelGr39aC -----
DmelGr39aD -----
DmelGr98c -----
DmelGr98d -----
DmelGr98b -----
AgamGr51 -----
AgamGr52 -----
DmelGr94a -----
DmelGr97a -----
DmelGr93b -----
DmelGr93c -----
DmelGr22d -----
DmelGr22e -----
DmelGr22a -----
DmelGr22b -----
DmelGr22c -----
DmelGr22f -----
DmelGr36a -----
DmelGr36c -----
DmelGr36b -----
DmelGr59d -----
DmelGr59a -----
DmelGr59b -----
AgamGr26 -----
AgamGr27 -----
AgamGr29 -----
AgamGr31 -----
AgamGr30 -----
AgamGr32a -----
TcasGr2 -----
TcasGr9 -----
TcasGr7 -----
TcasGr30 -----
TcasGr29 -----
AaegGr64f -----
AaegGr64a3 -----
AgamGr14 -----
AgamGr18 -----
AaegGr64d -----
AgamGr17 -----
AaegGr64c -----
DmelGr64c -----
DmelGr64d -----
AgamGr20 -----
AaegGr61a -----
AgamGr21 -----
AaegGr64a -----
DmelGr64a -----
DmelGr61a -----
AgamGr15 -----
AaegGr1 -----
DmelGr5a -----
DmelGr64f -----
DmelGr64e -----
AmelGr1 -----
AmelGr2 -----
AgamGr16 -----
AaegGr64e -----
TCasGr6 -----
TcasGr26 -----
TcasGr33 -----
AgamGr23 -----
AaegGr21a -----
TcasGr10 -----

TcasGr39 -----
AgamGr22 -----
AaegGr21b -----
DmelGr21a -----
AgamGr24 -----
AaegGr63a -----
DmelGr63a -----
TcasGr3 -----
DmelOr83b -----
AgamOr7 -----
HvirOr2 -----
TcasOr16 -----
TcasOr22 -----
AmelOr2 -----
TcasGr31 -----
TcasGr35 -----
DmelGr59c -----
DmelGr92a -----
DmelGr28a -----
DmelGr64b -----
TcasGr71 -----
AgamGr19 -----
AaegGr64b -----
DmelGr93d -----
TcasGr34 -----
TcasGr43 -----
TcasGr47 -----
AmelGr3 -----
AgamGr32b -----
AgamGr50 -----
TcasGr20 -----
TcasGr79 -----
TcasGr15 -----
TcasGr60 -----
AgamGr38 -----
TcasGr51 -----
DmelGr39b -----
AgamGr28 -----
TcasGr61 -----
TcasGr50 -----
AgamGr12 -----
AgamGr36 -----
AgamGr48 -----
AgamGr49a -----
AgamGr49b -----
DmelGr2a -----
DmelGr32a -----
DmelGr68a -----
AmelGr7 -----
AmelGr8 -----
AmelGr9 -----
TcasGr57 -----
TcasGr41 -----
AgamGr34 -----
AgamGr35 -----
AgamGr39 -----
AgamGr40 -----
AaegGr28d -----
AgamGr42 -----
AgamGr41 -----
AgamGr43 -----
DmelGr33a -----
AgamGr44 -----
AgamGr13 -----
AgamGr45 -----
AgamGr46 -----
Dmelr93a -----
AmelGr6 -----
AmelGr10 -----
TcasGr28 -----

TcasGr40	-----	
AgamGr3	-----	
AgamGr4	-----	
AgamGr6	-----	
AgamGr7	-----	
AgamGr47	-----	
DmelGr8a	-----	
AgamGr5	-----	
AgamGr8	-----	
DmelGr9a	-----	
DmelGr59f	-----	
DmelGr77a	-----	
DmelGr85a	-----	
TcasGr27	-----	
TcasGr48	-----	
AgamGr1	-----	
DmelGr10a	-----	
DmelGr59e	-----	
DmelGr10b	-----	
DmelGr89a	-----	
DmelGr57a	-----	
DmelGr47b	-----	
DmelGr58a	-----	
DmelGr58b	-----	
DmelGr98a	-----	
AaegGr93a	-----	
TcasGr19	-----	
DmelGr47a	-----	
DmelGr58c	-----	
TcasGr38	-----QVSKAGELIHQIQ--TEDHDII	357
TcasGr46	IVQSEQIAWLHLLYIFLVGIMYAADVIFYICHVCCSTIHEVSKAGELIHKIE--TNDHEII	678
TcasGr1	-----FYKVKSGELIHKIE--TNEHEII	337
TcasGr123	-----KAGELIHKID--TEDHDIR	330
TcasGr62	-----KAGELIHKID--TEDHDIR	605
TcasGr25	-----AAPAVSKARQFLPALPGYVPVY	229
TcasGr59	-----AAPAVSKARQFLPALPGYVPVY	404
AgamGr2	-----DSQRTGIELHYLANAVDEVHVCY	358
AaegGr66a	-----ESQRTGVFMHHLANMVDETHFY	420
DmelGr66a	-----ASKRTGISLHKCGVVADDNLLY	434
TcasGr11	-----NDTPSILHELNRNNYF--HMDLE	337
TcasGr55	-----NDTPSILHELNRNNYF--HMDLE	337
TcasGr21	-----VAGVTYLVILIQFNNSDFVQR	374
TcasGr56	-----SKKCYK-----	358
AaegGr	-----KQIAVNVHKLINVNN-YDELTA	376
AaegGr28a	-----VMLRI-----	255
AgamGr33	-----DNIGSNVHKLNLNAAAGADSELA	374
DmelGr28bB	-----EKTGGIVHSLLNKTK--SAEVK	369
DmelGr28bC	-----EKTGGIVHSLLNKTK--SAEVK	396
DmelGr28bD	-----EKTGGIVHSLLNKTK--SAEVK	366
DmelGr28bA	-----EKTGGIVHSLLNKTK--SAEVK	378
DmelGr28bE	-----EKTGGIVHSLLNKTK--SAEVK	373
AgamGr25	-----NRTITIINSLRRTCK--DVEMI	397
AaegGr43a	-----RLISLL-----	323
DmelGr43a	-----RKTIQIVCEIERKVH--EPILA	375
AgamGr37b	-----	
AgamGr37d	-----	
AgamGr37a	-----	
AgamGr37c	-----	
AgamGr37e	-----	
AgamGr37f	-----	
AaegGr28c	-----GVLVHKAINCASSA-----VI	507
AaegGr28b	-----AALVHKALRETSNDR-----IR	356
AaegGr28e	-----AALVHKALRETSNDR-----IR	356
TcasGr14	-----ATFVHEIWNKYALKNEVDKRV	325
TcasGr49	-----ATFVHEIWNKYALKNEVDKRV	369
AmelGr4	-----GCIHVHILLNCVIDQ---KVK	350
AmelGr5	-----GCIHVHLLNCTIDR---ETK	349
TcasGr16	-----KKLIVKIKIDIDKE---DER	337

TcasGr22	-----KILLVGLKIDIDQE----	EER	240
TcasGr17	-----KTVLLGVKIDICNE----	EER	324
TcasGr150	-----KTVLLGVKIDICNE----	EER	324
TcasGr32	-----ISYSLE-KLKTG-DEI		305
TcasGr54	-----ISYSLE-KLKTG-DEI		305
TcasGr37	-----AVYSLDLELKHI-ENF		280
TcasGr53	-----AVYSLDLELKHI-ENF		280
TcasGr5	-----LAYKIEAKRRD--NEI		292
TcasGr12	-----VLKKIALRRQTNGDL		264
TcasGr13	-----VLKKIALRRQTNGDL		338
TcasGr104	-----WCYKLQEQFVTNSEVR		326
TcasGr45	-----WCYKLQEQFVTNSEVR		326
TcasGr98	-----LCYKLMKFPERSHEQ		323
TcasGr52	-----MCYKLQGFYPPEAPQR		260
TcasGr105	-----VCYEQDRFSDESKKR		306
TcasGr4	-----		
TcasGr44	-----		
AgamGr9a	-----HFDDYRLQNTRAA		325
AgamGr9c	-----HFDDYRLQNTRAA		324
AgamGr9b	-----HFDDYRLQNTRAA		375
AgamGr9d	-----HFDDYRLQNTRAA		331
AgamGr9e	-----HFDDYRLQNTRAA		327
AgamGr9f	-----HFDDYRLQNTRAA		324
AgamGr9g	-----HFDDYRLQNTRAA		327
AgamGr9i	-----HFDDYRLQNTRAA		328
AgamGr9h	-----HFDDYRLQNTRAA		333
AgamGr9j	-----HFDDYRLQNTRAA		364
AgamGr9l	-----HFDDYRLQNTRAA		354
AgamGr9k	-----HFDDYRLQNTRAA		346
AgamGr9m	-----HFDDYRLQNTRAA		349
AgamGr9n	-----HFDDYRLQNTRAA		316
AgamGr10	-----HFDDYRLQNTRAA		316
AgamGr11	-----RLDDDRNRNSRVA		321
DmelGr23aA	-----LVKP--QGSKLYN		311
DmelGr23aB	-----LVKP--QGSKLYN		315
DmelGr39aA	-----VPRT--GTG--LD		312
DmelGr39aB	-----VPRT--GTG--LD		321
DmelGr39aC	-----VPRT--GTG--LD		321
DmelGr39aD	-----VPRT--GTG--LD		311
DmelGr98c	-----LPTA--EEFQMLK		343
DmelGr98d	-----LSAA--EDYLILK		341
DmelGr98b	-----TSAD--PNFAMLT		341
AgamGr51	-----VSVNQHHHRPGQE		356
AgamGr52	-----AINHRSRGRRME		351
DmelGr94a	-----QEMNLQHADSRYR		348
DmelGr97a	-----QRFDLQHADARFK		369
DmelGr93b	-----ENFYVTDSSQS-YH		347
DmelGr93c	-----ENFPITDHKA-WH		343
DmelGr22d	-----FNDIENMDKDL		335
DmelGr22e	-----FNDIENIDEKLE		337
DmelGr22a	-----FNDMENMDQETE		337
DmelGr22b	-----FSDLEHRDDKLE		334
DmelGr22c	-----FADLEVKDIELE		331
DmelGr22f	-----FTDLEHDDEELE		326
DmelGr36a	-----TLFTSALDVRLE		339
DmelGr36c	-----TIFVG-LDVRLE		338
DmelGr36b	-----TVFASSLDIRLE		339
DmelGr59d	-----TLFQPGLDHRLE		338
DmelGr59a	-----	ESSMS	312
DmelGr59b	-----	EVRWT	313
AgamGr26	-----AALDSALNSAL		367
AgamGr27	-----YEAAGRSNSAL		351
AgamGr29	-----GNDSRSNEITN		363
AgamGr31	-----SSSSRCHEITN		364
AgamGr30	-----WNSELNGMVDY		355
AgamGr32a	-----WSSEQN-MT--		366
TcasGr2	-----	YN	361
TcasGr9	-----	YN	362
TcasGr7	-----	YN	363
TcasGr30	-----		

TcasGr29	-----	YN	363
AaegGr64f	-----	WN	320
AaegGr64a3	-----		
AgamGr14	-----	WN	384
AgamGr18	-----	WG	356
AaegGr64d	-----	WG	388
AgamGr17	-----	WT	345
AaegGr64c	-----	WT	370
DmelGr64c	-----	WC	349
DmelGr64d	-----	WC	358
AgamGr20	-----	YN	376
AaegGr61a	-----	YC	373
AgamGr21	-----	WC	401
AaegGr64a	-----	WS	284
DmelGr64a	-----	WC	395
DmelGr61a	-----	WT	378
AgamGr15	-----	WC	382
AaegGr1	-----	WC	386
DmelGr5a	-----	YH	382
DmelGr64f	-----	WC	407
DmelGr64e	-----	WC	401
AmelGr1	-----	FS	330
AmelGr2	-----	YS	420
AgamGr16	-----	YT	352
AaegGr64e	-----	YS	373
TCasGr6	-----	TR	331
TcasGr26	-----	TR	331
TcasGr33	-----	TR	331
AgamGr23	-----	TQ	415
AaegGr21a	-----	TQ	407
TcasGr10	-----	TR	361
TcasGr39	-----	TR	361
AgamGr22	-----	TQ	380
AaegGr21b	-----	TQ	386
DmelGr21a	-----	TQ	387
AgamGr24	-----	AQ	311
AaegGr63a	-----	AQ	376
DmelGr63a	-----	AQ	405
TcasGr3	-----	AQ	367
DmelOr83b	-----	A	438
AgamOr7	-----	A	430
HvirOr2	-----	A	424
TcasOr16	-----	A	526
TcasOr22	-----	A	565
AmelOr2	-----	A	430
TcasGr31	-----		
TcasGr35	-----		
DmelGr59c	-----	TLFYRELDNRLE	343
DmelGr92a	-----	VGDL SKFQ	332
DmelGr28a	-----	ITDDPELR	379
DmelGr64b	-----	AWS	343
TcasGr71	-----	NEK	296
AgamGr19	-----	WC	338
AaegGr64b	-----	WC	286
DmelGr93d	-----	HWM	324
TcasGr34	-----	AQK	273
TcasGr43	-----	MEEK	303
TcasGr47	-----	DK	272
AmelGr3	-----	IR	392
AgamGr32b	-----	VELN	364
AgamGr50	-----	QARQIIPCLSMYTGRITDVPD	353
TcasGr20	-----	DIK	338
TcasGr79	-----	KK	297
TcasGr15	-----	VEYKNVEFWRNIR	340
TcasGr60	-----	R	290
AgamGr38	-----	AELIEMCAQLCFASDFVFLVFGLISTLCESVK	373
TcasGr51	-----	FRNS	718
DmelGr39b	-----	RETSYK	319
AgamGr28	-----	KAATVGEDQ	329
TcasGr61	-----	SLE	614

TcasGr50	-----	
AgamGr12	-----LNTQRVEARKW	326
AgamGr36	-----VVDSSTK	343
AgamGr48	-----AWLDTRTE	349
AgamGr49a	-----RVE	349
AgamGr49b	-----EFLPTDPNPRVE	353
DmelGr2a	-----NESHN	353
DmelGr32a	-----EYQ	398
DmelGr68a	-----KSKQFQ	328
AmelGr7	-----FATKEFQ	351
AmelGr8	-----DQII	343
AmelGr9	-----TDPMVR	337
TcasGr57	-----EIPTMPVSIKDQTIK	338
TcasGr41	-----ICYKLLSNLGFPKTTNEQLLR	344
AgamGr34	-----GSRYSSEE	363
AgamGr35	-----MKHSQV	380
AgamGr39	-----AAIY	358
AgamGr40	-----YYDMP	337
AaegGr28d	-----RYDRRVV	344
AgamGr42	-----KTPAL	364
AgamGr41	-----NVITFKLVHRIINTNVVEI	386
AgamGr43	-----YFIDDQALFER	368
DmelGr33a	-----KKPAFMLSNDLFY	413
AgamGr44	-----MDHKLLK	344
AgamGr13	-----DRYFH	347
AgamGr45	-----VYGPCQR	379
AgamGr46	-----TPLS	370
Dmelr93a	-----WD	355
AmelGr6	-----FSSNGMQGQYKNFH	387
AmelGr10	-----LLFVQANRVGELIF	327
TcasGr28	-----	
TcasGr40	-----AAAV	325
AgamGr3	-----LDAEMV	325
AgamGr4	-----DSTFR	363
AgamGr6	-----QTTI	357
AgamGr7	-----DEADLLA	366
AgamGr47	-----HFSVDVI	349
DmelGr8a	-----DLS	329
AgamGr5	-----QALF	377
AgamGr8	-----CDQGW	317
DmelGr9a	-----QTPVER	288
DmelGr59f	-----KDIQ	340
DmelGr77a	-----ITVKQLR	394
DmelGr85a	-----VNLE	343
TcasGr27	-----K	291
TcasGr48	-----ADSFCK	318
AgamGr1	-----TQNVECE	334
DmelGr10a	-----REMDERLT	354
DmelGr59e	-----RLQ	331
DmelGr10b	-----SRTTY	319
DmelGr89a	-----LTQE	303
DmelGr57a	-----DWFPPQK	342
DmelGr47b	-----VAR	336
DmelGr58a	-----HLELVKRDFH	338
DmelGr58b	-----KVGPKMQ	336
DmelGr98a	-----QLN	319
AaegGr93a	-----IVCLDSR	345
TcasGr19	-----T	310
DmelGr47a	-----RLD	307
DmelGr58c	-----CIKSSGTTLSRKLKLE	356
TcasGr38	DEIEMFSLQIANEQ--VEFNAAGFFPINYTLVFS-----	389
TcasGr46	DKIEMFSLQILNER--AGFSAAGFFPIDYSLVFS-----	710
TcasGr1	DKIEMFSLQILNER--AEFNAAGFFPIDYTLVFS-----	369
TcasGr123	DEIEMFSLQIANEQ--VEFNAAGFFAINYTLVFS-----	362
TcasGr62	DEIEMFSLQIANEQ--VEFNAAGFFAINYTLVFS-----	637
TcasGr25	IRPGDTPLEDINPD--LAEAFSSYARKNARLSFG-----	261
TcasGr59	IRPGDTPLEDINPD--LAEAFSSYARKNARLSFG-----	436
AgamGr2	EVVNHLSLKLNLHQ--LNFSAAGFFDLDMTTLYA-----	390

AaegGr66a	QIVNHLSLKLLNHQ---LNF SACGFFDLDMTTLYA-----	452
DmelGr66a	EIVNHLSLKLLNHS---VDFSACGFFTLDMETLYG-----	466
TcasGr11	NN-----	339
TcasGr55	NNVQSYSLQLLHQK---VQF SVLGFFVVDYTLTLYS-----	369
TcasGr21	NSTEFDNATESY-----	386
TcasGr56	-----	
AaegGr	KQLTNLSLQMTHRK---VAFTAYGFFKLDFTLLFT-----	408
AaegGr28a	-----	
AgamGr33	GKLMHLSLQMLHRK---VRF SACGLFSLDFSLIFT-----	406
DmelGr28bB	EKLQQFSMQLMHLK---INF TAAGLFNIDRTLYFT-----	401
DmelGr28bC	EKLQQFSMQLMHLK---INF TAAGLFNIDRTLYFT-----	428
DmelGr28bD	EKLQQFSMQLMHLK---INF TAAGLFNIDRTLYFT-----	398
DmelGr28bA	EKLQQFSMQLMHLK---INF TAAGLFNIDRTLYFT-----	410
DmelGr28bE	EKLQQFSMQLMHLK---INF TAAGLFNIDRTLYFT-----	405
AgamGr25	ESINMFWQQLIASN---FSFTACGLCTIDRRIITS-----	429
AaegGr43a	-----	
DmelGr43a	EAVKKFWQQLLVVD---ADFSACGLCRVNRITLTS-----	407
AgamGr37b	-QLNLF SQQLLHRS---PVIT-CGLFVYDWTWYT-----	344
AgamGr37d	-QLNLF SQQLLHRS---PVIT-CGLFVYDWTWYT-----	340
AgamGr37a	-QLNLF SQQLLHRS---PVIT-CGLFVYDWTWYT-----	354
AgamGr37c	-QLNLF SQQLLHRS---PVIT-CGLFVYDWTWYT-----	348
AgamGr37e	-QLNLF SQQLLHRS---PVIT-CGLFVYDWTWYT-----	348
AgamGr37f	-QLNLF SQQLLHRS---PVIT-CGLFVYDWTWYT-----	375
AaegGr28c	NELNIFSQQLLHRS---PVIT-CGLFVYDWTLLYT-----	538
AaegGr28b	DELMLFSSFLAHKK---IVVN-CYIFVCDWTLGMS-----	387
AaegGr28e	DELMLFSSFLAHKK---IVVN-CYIFVCDWTLGMS-----	387
TcasGr14	RHLQLVAIRLLNTK---LQFTAKDFFNLDWTFCHM-----	357
TcasGr49	RHLQLVAIRLLNTK---LQFTAKDFFNLDWTFCHM-----	401
AmelGr4	KELKQFSFQLLHQK---IIFSTNGYFTLDNKFFQS-----	382
AmelGr5	IELEQFSLQLLHQK---VQFTANGYFTLDNTLTFQS-----	381
TcasGr16	NEVISSALKLSQNE---LEITACKFFSIDNALLFSANSTKKLIVKIRIDIDKEDERNEII	394
TcasGr22	NVVVTSVLKLMQNK---LEITACRLFSIDNALLFS-----	272
TcasGr17	NS-----HCLGGT---ITRTMW-----YFQ-----	341
TcasGr150	NSVVASVLQLMENK---IETACRLFNIDNALLFA-----	356
TcasGr32	QDLISTIKDN---F---PRFYAARFFVINRGTILG-----	334
TcasGr54	QDLISTIKDN---F---PRFYAARFFVINRGTILG-----	334
TcasGr37	NDFVTALKDN---V---PVFAAARFYAINRSTIFR-----	309
TcasGr53	NDFVTALKDN---V---PVFAAARFYAINRSTIFR-----	309
TcasGr5	KMFVKIVDAS---C---RNFTAARFFELNRRITLG-----	321
TcasGr12	DELIVTSLSTHY--F---PVFSACDYFTIETKTVDL-----	294
TcasGr13	DELIVTSLSAHY--F---PVFSACDYFTIETKTVDL-----	368
TcasGr104	TELFKLAQHVSANI---VHITAGNYFEINKATLCG-----	358
TcasGr45	TELFKLAQHVSANI---VHITAGNYFEINKATLCG-----	358
TcasGr98	QELYMAAQVIEKSV---ANFTAARFFVDFVCRSTLFG-----	355
TcasGr52	KELLRFASESRGSV---AKFTAADFFEIDRGTFFG-----	292
TcasGr105	RELLRLAQQVNANI---AQITANFFDISRSTFLG-----	338
TcasGr4	-----EVQSRS---NRMTPLKLQPQNF SI-----	309
TcasGr44	-----EVQSRS---NRMTPLKLQPQNF SI-----	313
AgamGr9a	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	357
AgamGr9c	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	356
AgamGr9b	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	407
AgamGr9d	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	363
AgamGr9e	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	359
AgamGr9f	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	356
AgamGr9g	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	359
AgamGr9i	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	360
AgamGr9h	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	365
AgamGr9j	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	396
AgamGr9l	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	386
AgamGr9k	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	378
AgamGr9m	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	381
AgamGr9n	KQIQNFLLKNLHQK---KKFSACGFFDIDNTVIYM-----	348
AgamGr10	KQIQKFLKLNLRQK---KKFSACGFFDIDNTVIYM-----	348
AgamGr11	TQIHRFLLQNLNRK---INF SVCGMFIDIDYAMIHM-----	353
DmelGr23aA	DLVSEFSLQTLHQR---FVVTAKDFFSLNLHLLSS-----	343
DmelGr23aB	DLVSEFSLQTLHQR---FVVTAKDFFSLNLHLLSS-----	347
DmelGr39aA	RMIEKFLKLNLRQK---PILTAYGFFALDKSTLFFK-----	344
DmelGr39aB	RMIEKFLKLNLRQK---PILTAYGFFALDKSTLFFK-----	353
DmelGr39aC	RMIEKFLKLNLRQK---PILTAYGFFALDKSTLFFK-----	353
DmelGr39aD	RMIEKFLKLNLRQK---PILTAYGFFALDKSTLFFK-----	343

DmelGr98c	MGLKEYIILQMQLK---LLFTCGGLFDINIKLFGG-----	375
DmelGr98d	MGLREYSLOMEHLK---LIFTCGGLFDINLKFFGG-----	373
DmelGr98b	RGLREYSLOMEHLK---LRFTCGGLFDINLKYFGG-----	373
AgamGr51	RLIEVLMVDYMQRN---NAINNYGMYAMNRALLFG-----	388
AgamGr52	RMLDFITLDMYQRD---YDVRNYGLYDINRALLFG-----	383
DmelGr94a	QAVHGFTLLVTVTK---YQIKPLGLYELDMRLISN-----	380
DmelGr97a	QVVNAFWLQVVTIN---YKLMPLGLLELNTSLVNK-----	401
DmelGr93b	QKLELFLGRLQHQE---LRVFPGLGLFEVSNELTLF-----	379
DmelGr93c	MKWEMFLSRLNFFE---FRVRPLGLFEVSNEVILL-----	375
DmelGr22d	ISISDFALYCSHRR---FKFLHCGLFHVNRMGFK-----	367
DmelGr22e	RSITDFALFCSHRR---LRFHHCGLFYVNYEMGFR-----	369
DmelGr22a	RRVAEFTLFCSHRR---LKVCHLGLLDINYEMGFR-----	369
DmelGr22b	MSVNEFAWLCSHRK---FRFQLCGLFSMNCRMGFK-----	366
DmelGr22c	RSVNEFALLCGHCQ---FNFHVCGLFTINYKMGFQ-----	363
DmelGr22f	RSLNEFAWLCSTRK---FRFQLCGLFSINHNMGFQ-----	358
DmelGr36a	QSFESIQLQLIRNP---LKIEVLDIFTITRSSAA-----	371
DmelGr36c	EAFENLNLQLIRNP---LKITVVKLYDVRNNTMA-----	370
DmelGr36b	ESFESLQLQLARNP---LKITVVKLYDVRNNTMA-----	371
DmelGr59d	MVFENFALNLVRNP---LKLHMYGLFEFGRGTSFA-----	370
DmelGr59a	NELSSYLIYESSTR---LDLLVCGLYRVNKRKWLQ-----	344
DmelGr59b	KEISSYVIYANSTK---LQLWSCGLFQANRSMWFA-----	345
AgamGr26	AKFSSQLLHVQGPQ-----TACGVINLEMTLIST-----	396
AgamGr27	MKFAGQLLLHLHGKR---HHCKACGLITLDTLISK-----	383
AgamGr29	RFITQTTFLFLEKAH-----EAYGMISIDMTLILS-----	392
AgamGr31	RFISQTTFLFLANGH-----EAYSMSIDMTLILS-----	393
AgamGr30	YFMQVS--NLQDTH-----QACGMIKLDMQLVNP-----	382
AgamGr32a	-----	-----
TcasGr2	LEIQRFIIQIGNSD---IAITGKNFFSITRGLILSFVDYFVFLCSILVNI AFIKLATEW	418
TcasGr9	KEISRLVETL-----KFQSITS-----	379
TcasGr7	LEIQRFIHQIGTLE---VAFTGKNFFSITRGLILSIAG-----	398
TcasGr30	---QRFIHQIGTLE---VAFTGKNFFSITRGLILSIAG-----	363
TcasGr29	LEIQRFIHQIGTLE---VAFTGKNFFSITRGLILSIAG-----	398
AaegGr64f	LDIQRLLDHASLKS---IAFSGKRFFFITRPLILAMAG-----	355
AaegGr64a3	-----	-----
AgamGr14	LDLRRLCDAVATSE---NALSCKRFFVRRPLILA-----	416
AgamGr18	IDLQRLTDEVASGE---NVLGKQFFFLKRQILAMAG-----	391
AaegGr64d	LDLQRLTDDVASGE---NTLSGKGFYFLKRQILAMAG-----	423
AgamGr17	IDVQRFTQELLSGR---NCLSGHGFFFLNRSVILAMAG-----	380
AaegGr64c	TSVQRFTNEILNIE---NALSCHKFFFLKRGILAMAG-----	405
DmelGr64c	VELRRLNEIFLSDH---FALSGKGYFLLTRRLIFAMAA-----	384
DmelGr64d	DELGRLESEMLRNET---FALSGMGYFYVTRRLIFAMAG-----	393
AgamGr20	DELEILRICSSGG---VSI SGMGFFITRIFLT MAG-----	410
AaegGr61a	DELQRVQMYRRG---VSLTGMGVFLVSRRIFLT IAG-----	407
AgamGr21	VELERFSTQLKSEK---VALSGMGFFSLTRQLLFSMAG-----	436
AaegGr64a	VELDRFSSQLKSET---VALSGMGFFHITRQLLFSMAG-----	319
DmelGr64a	VEVERLIFQMTTQT---VALSGKKFYFLTRRLFLGMAG-----	430
DmelGr61a	QEVQRFADQLTSEF---VGLSGYRLFCLTRKSLFGMLA-----	413
AgamGr15	LEAKRFAEEVTTDT---VALTGLKFFSMTRQLVLNVTG-----	417
AaegGr1	VEAKRFAEEVINDT---VALTGMKFFNMTRKLVKVTG-----	421
DmelGr5a	PEVFRFAEELASDQ---VALTGLKFFNVTRKFLFLAMAG-----	417
DmelGr64f	PEVKRFTEEVI SDE---VALTGMKFFHLTRKLVLSVAG-----	442
DmelGr64e	DELKRFSEEVQMDN---VALTGMKFFRLTRGVVISVAG-----	436
AmelGr1	TEVMRFLSQVT TDN---ICLTGMKFFSVTRSLVLT VAG-----	365
AmelGr2	VEVQRLQCQLATDD---IALTGLRFFFSITRNFLAVAG-----	455
AgamGr16	DEVQRFHRQVEHDS---VALNGYGFYFLTRKILKIAA-----	387
AaegGr64e	KEVQRFHQQMENET---VALSGFRFFHLTRKILKISG-----	408
TCasGr6	KEIDIFLVAIQMNP---PKVSLKGYTVVNRELVTASVA-----	366
TcasGr26	KEIDIFLVAIQMNP---PKVSLKGYTVVNRELVTASVA-----	366
TcasGr33	KEIDIFLVAIQMNP---PKVSLKGYTVVNRELVTASVA-----	366
AgamGr23	KEIDLFIQAIEMNP---AIVSLKGYAEVNRELLTSSIA-----	450
AaegGr21a	KEIDLFIQAIEMNP---AIVSLKGYAEVNRELLTASIA-----	442
TcasGr10	QEVHMFMAIEKNP---PIMNLNGYANVNRLKLISSVT-----	396
TcasGr39	QEVHMFMAIEKNP---PIMNLNGYANVNRLKLISSVT-----	396
AgamGr22	KEVEMFLVAIDKNP---PTMNLGDYANINRGLITSNIS-----	415
AaegGr21b	KEVEMFLVAIDKNP---PTMNLGDYANINRGLITSNIS-----	421
DmelGr21a	KEVEMLLVAINKNP---PIMNLGDYANINRELITTNIS-----	422
AgamGr24	TEINMFLRATMNP---SSINLGGFFDVNRTLFKSLLA-----	346
AaegGr63a	TEINMFLRATMNP---SSINLGGFFDVNRTLFKSLLA-----	411
DmelGr63a	TEINMFLRATMNP---STINCGGFFDVNRTLFKGLLT-----	440
TcasGr3	QEINMFLKATEMSP---TDISLVGFFDVNRNLFKSLLA-----	402

DmelOr83b	KTFVQIVCQQCQKA---MSISGAKFFTVSLDLFASVLG-----	473
AgamOr7	KTFVQIVCQQCQKA---MTISGAKFFTVSLDLFASVLG-----	465
HvirOr2	KTFVQIVCQQCQKA---MSISGAKFFTVSLDLFASVLG-----	459
TcasOr16	KTFVQIVCQQCQKA---MSISGAKFFTVSLDLFASVLG-----	561
TcasOr22	KTFVQIVCQQCQKA---MSISGAKFFTVSLDLFASVLG-----	600
AmelOr2	KTFVQIVCQQCQKA---MSISGAKFFTVSLDLFASVLG-----	465
TcasGr31	-KVLPLLSVSSSS---YNCEVLFVSLIDQF-----	250
TcasGr35	DEVQIFIDVVQHNR---PEFKAARFFSIDRSTLFS-----	233
DmelGr59c	AAFENFQLQLASNR---HEFVYMGLFKMERGRLIA-----	375
DmelGr92a	TTLDTLFLHLRLGH---FRVSILGLFDVDTQMQLYQ-----	364
DmelGr28a	DRLFRSLQLSHRK---VLFSAAGLFRDLRDLIFT-----	411
DmelGr64b	IEVQRFSEQLGNDT---TALSGSGFFYLTRSLVLAMG-----	377
TcasGr71	KNISEFINVVLNNY---PDFSAAGFFSINKTTLLQ-----	328
AgamGr19	SELERFYSFIRKSS---IAINAMGLFRLTKKTMLTMLG-----	373
AaegGr64b	TELERYYLQLRAEV---GALSGSRFFYLTHQTFT-----	318
DmelGr93d	KSVEIFVTHLNLSE---FRVNLLGLFNVSNELFLIIVS-----	359
TcasGr34	LRHKFDLKTLLVNF---PKFTAAGFFDHVKKSTIFS-----	305
TcasGr43	QELYEFSNFVSQLH---PKFSAANFFDIERSTILS-----	335
TcasGr47	NKLGDFVALIRDAQ---VKITAADFFILDKSTILK-----	304
AmelGr3	RELEIFSLQLLHRP---LEFSACGLFSLDRNLITS-----	424
AgamGr32b	EAIEHFISQISNLH---DVHQACGMLNLDKMLISN-----	396
AgamGr50	RAIELLTIEYLNDR---YAIRIKGLFTIDNTMLFG-----	385
TcasGr20	EQVEILAVQVSNKK---IKFSSFGMLKISRSLLS-----	370
TcasGr79	CCEKCGLKKIEFCR---PTFSAARFYIDFSNTFLG-----	330
TcasGr15	EDYDRLARLTQFLD---KELSYLILFSIGFNCFWVMKLLYNVLRFG-----	383
TcasGr60	FEITALRLFTIDNK---LLFGVLAYYSTTCDIATILDFWVR-----	328
AgamGr38	LTLRLMFLMQLGHR---SPMITCGLFPFDWTLIFS-----	405
TcasGr51	DELIKFISIAKHNV---RTFSAGGFFDIRKNLIFS-----	750
DmelGr39b	DLLMEFILQVEQNV---LAINAEGFMSTDNSLLMS-----	351
AgamGr28	QMALLRLLTLGRKR---IVPTACGLLKLLESLSLSS-----	361
TcasGr61	EKLQIFALQLTHRA---PTFTALGLFKINGSFAFT-----	646
TcasGr50	--VNKLIFRSNDPK---VTLELCGMISTYLIIMIQ-----	331
AgamGr12	VDRFLLQKLSQTNQ---QRFMAGGLFVLDNKLIVCT-----	358
AgamGr36	RKLIWFSQQLFRR---PKLR-CIFYAYDWKTIYN-----	374
AgamGr48	RSIELFTLAVLTTD---ARIKIGGMYVLNMAFVFS-----	381
AgamGr49a	RCIESFAIELLHED---FKINNCGMYDVDYTLMFS-----	381
AgamGr49b	RCIESFAIELLHED---FKINNCGMYDVDYTLMFS-----	385
DmelGr2a	ALITQFSLQLLHQR---LHFSAAAGFFNVDCITLLYT-----	385
DmelGr32a	NIIDKFLTKSIKQE---VQFTAYGFFAIDNSTLFLK-----	430
DmelGr68a	NLIDKFLTKSIKQD---LQFTAYGFFSIDNSTLFLK-----	360
AmelGr7	AEIRDFTLQLIQNP---VVFAYGFFNLDHDSFIQG-----	383
AmelGr8	TELELFSLEVLQKD---NKFIMFG-LEMDLTLVTD-----	374
AmelGr9	REVHLFSLQIMHRN---NKFTAKTFDMSVLLGQ-----	368
TcasGr57	EELALLAQSTSRST---SKFSAAGFFVDFVTLG-----	370
TcasGr41	KELLLFAEQMGQRQ---VAFKVGGLFNIDYGTLYS-----	376
AgamGr34	VIKLTVPFQAPNKV---FKFSAMGFFQIDCNMLCG-----	395
AgamGr35	AQHSSIWFPNLISS---VRFSAAGFFFTINYNMLSG-----	412
AgamGr39	NDCGSQIIEQLSHG---IPKASCYFYDIDWTFLLS-----	390
AgamGr40	LLQIKFLSQQLRSV---APRVSCLLFDFEWPFLVS-----	369
AaegGr28d	KELGTFYSYQLYHHT---PKVS-CRLFLDWTLLYT-----	375
AgamGr42	VERLVLFSHHLQHQR---RPVSCGLFCFDWTLALS-----	396
AgamGr41	EDLLQQFSEQMNR---SPSVDFRFFDWDWPLLVK-----	418
AgamGr43	SKAIALQLLHRKRF---SLFDGSGFLRDLFTFIFS-----	400
DmelGr33a	NKMKSFLLQFLHWEG---FFQFNGVGLFALDYTFIFS-----	447
AgamGr44	QSIEVFALQTLHQP---IEFTACRMFTLDYTVLFS-----	376
AgamGr13	ATINTFLLSLNHSM---LKINIAGMFTMDFELLTG-----	379
AgamGr45	INFRTVTLALLFST---FIFYSHSNTLFDIFSRTTS-----	412
AgamGr46	DHVRLLSLQLHQR---IEFTASGLFTIDHGLMFN-----	402
DmelGr93a	KSVETFLGQLQTR---LEIKVLGFFHLLNNEFILL-----	387
AmelGr6	TKQDSFRTSLYLLNR---RLRFSAAGGLFDIKLSLLCS-----	421
AmelGr10	SPYSSVSLKRVHLQ---ENIEAAAYFQLRKVHLFT-----	359
TcasGr28	-----	
TcasGr40	EHILSIVNTCSQIPS---EVEDKYTTYFLNTYPHLFN-----	359
AgamGr3	KLRFYFLHQLLRNR---IKLTAKDIFDYDYTLIRT-----	357
AgamGr4	KIIYRFGQLIAQQR---IRLTAHGLFEINYSLLKMFG-----	397
AgamGr6	TLIENFSKQLDNEQ---INFSAANFFDIRLSSLT-----	389
AgamGr7	KMLNFSLLQHTP---MSFSLGGFFDMDFVLLKE-----	398
AgamGr47	EKLSTLSLQVTMRD---MSFSCGLFNFDWNLFSG-----	380
DmelGr8a	LQIQNFSLQLLHQP---IRIDCLGLTILDCLSLTR-----	361
AgamGr5	TRIESFLQQTQFES---IQLTAGDFFDLNFSPLT-----	409

TcasGr12	-----VLGVTVTYLVIIQFDDKIVQV-----	316
TcasGr13	-----VLGVTVTYLVIIQFDDKIVQV-----	390
TcasGr104	-----IFGTTTTYFIVILQFNQSSAK-----	379
TcasGr45	-----IFGTTTTYFIVILQFNQSSAK-----	379
TcasGr98	-----ILATTTTTYLIVTIQFNQGLNK-----	376
TcasGr52	-----ILSTTTSYFIIMIQFNMSL-----	311
TcasGr105	-----ILATITTYFIVIIIEFGF-----	355
TcasGr4	-----	
TcasGr44	-----	
AgamGr9a	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	388
AgamGr9c	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	387
AgamGr9b	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	438
AgamGr9d	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	394
AgamGr9e	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	390
AgamGr9f	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	387
AgamGr9g	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	390
AgamGr9i	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	391
AgamGr9h	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	396
AgamGr9j	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	427
AgamGr9l	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	417
AgamGr9k	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	409
AgamGr9m	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	412
AgamGr9n	-----VFSSIVTYLVILIQFKQLETD-LTQAGDGYNV	379
AgamGr10	-----VFSSIVTYLVILIQFKQLETD-LTQSGDGYNV	379
AgamGr11	-----VLSSIFTYLVILVQFDQLQPERLSYLNTLNT	385
DmelGr23aA	-----MFAAVVTYLVILIQFMFAERS--STRGSG---	370
DmelGr23aB	-----MFAAVVTYLVILIQFMFAERS--STRGSG---	374
DmelGr39aA	-----LFTAIFTYMVILVQFKEMENS--TKSINKF--	372
DmelGr39aB	-----LFTAIFTYMVILVQFKEMENS--TKSINKF--	381
DmelGr39aC	-----LFTAIFTYMVILVQFKEMENS--TKSINKF--	381
DmelGr39aD	-----LFTAIFTYMVILVQFKEMENS--TKSINKF--	371
DmelGr98c	-----MLVTLCGYVIIIVQFKIQDFA--LIGYRQNTS	405
DmelGr98d	-----MVVTLFGYIIILVQFKIQFFA--QSNFMQNIN	403
DmelGr98b	-----LLVTIFGYIIILIQFKVQAIA--ANRYKKVVN	403
AgamGr51	-----MIATMTSYLIILIQFHIQAYE-----	409
AgamGr52	-----TIATVTSYVILVQFHMQQYG-----	404
DmelGr94a	-----VFSAVASFLILVQADLSQRFKMQ-----	404
DmelGr97a	-----VFSASIGSLILIQSDLTRFSLK-----	425
DmelGr93b	-----FLSAMVTYLVFLVQYGMQSQQI-----	401
DmelGr93c	-----FLSSMITYFTYVVQYGIQTNRL-----	397
DmelGr22d	-----MFVASVLYLLVQFDYMNL-----	387
DmelGr22e	-----MAITSFLYLLFLIQFDYWNL-----	389
DmelGr22a	-----MIITNLYVVFLVQFDYMNLFKFTD-----	394
DmelGr22b	-----MIITFLYLVYLVQFDYMNL-----	386
DmelGr22c	-----MIITSFLYLYMIQFDFMNL-----	383
DmelGr22f	-----MIITSFLYLVYLLQFDFMNL-----	378
DmelGr36a	-----MIGSIITNSIFLIQYDMEYF-----	391
DmelGr36c	-----MFGNLITHSIFLIQYDIEHF-----	390
DmelGr36b	-----MCASVIVNSIFLIQFDMEFF-----	391
DmelGr59d	-----VFNSSLTHSLLLQYDVQNF-----	390
DmelGr59a	-----MVGSIIVHSSMLFQFHLVMRGGL-----	367
DmelGr59b	-----MISSVLYYILVLLQFHLVMRK-----	366
AgamGr26	-----MVGALTTYLVILIQFDTAITQGGTADSNPSS	428
AgamGr27	-----IVAGLTTYLMILIQFDSAFTQGSR-----	407
AgamGr29	-----NVGGLTNILVVLVQFADAKPSPN-----	415
AgamGr31	-----IVAGLTNILVVLVQFSDGKPCSN-----	416
AgamGr30	-----VIAVITSILFILMQFSDADRNDIKTVYRLDN	414
AgamGr32a	-----	
TcasGr2	PQ-----LMKAWLKIELLVGNLGMRRNFRKKLDFIFTFI	452
TcasGr9	-----AVVTYELIV-----IQFRKKME-----	396
TcasGr7	-----AIVSYELVL-----MQFNDSLL-----	415
TcasGr30	-----AIVSYELVL-----MQFNDSLL-----	380
TcasGr29	-----AIVSYELVL-----MQFNDSLL-----	415
AaegGr64f	-----TIITYELVL-----LDQVAKEQ-----	372
AaegGr64a3	-----	
AgamGr14	-----	
AgamGr18	-----TLVTYELVL-----LDQVKKIP-----	408
AaegGr64d	-----TLVTYELVL-----MDQVKQAP-----	440
AgamGr17	-----TLITYELVM-----LKEVNPSS-----	397
AaegGr64c	-----TMITYELVM-----LSEVR-HS-----	421

DmelGr64c	-----TLMVYELVL-----INQMAGSE-----	401
DmelGr64d	-----ALMGYELVL-----FRQMGGAV-----	410
AgamGr20	-----SILTYELVL-----MRFHR-----	424
AaegGr61a	-----TIITYELVL-----LSFRKRIM-----	424
AgamGr21	-----TIVTYELVM-----LKFDQ-----	450
AaegGr64a	-----TIVTYELVM-----LKFDK-----	333
DmelGr64a	-----TIVTYELVL-----LQFDE-----	444
DmelGr61a	-----TLVTYELML-----LQIDA-----	427
AgamGr15	-----AIITYELVL-----IQFHKD-E-----	433
AaegGr1	-----SIITYELVL-----IQFHQD-E-----	437
DmelGr5a	-----TVATYELVL-----IQFHEDKK-----	434
DmelGr64f	-----TIVTYELVL-----IQFHEDND-----	459
DmelGr64e	-----TIVTYELIL-----LQFNGEK-----	453
AmelGr1	-----TIVTYELVL-----VQFNTTQQ-----	382
AmelGr2	-----AIITYEVVL-----LQFNKG-----	470
AgamGr16	-----TVVTYELVL-----TQVNEAEA-----	404
AaegGr64e	-----TIVTYELVL-----LQVNDAAE-----	425
TCasGr6	-----TIAIYLIVL-----LQFKISLLNMR---	386
TcasGr26	-----TIAIYLIVL-----LQFKISLLNMR---	386
TcasGr33	-----TIAIYLIVL-----LQFKISLLNMR---	386
AgamGr23	-----TIAIYLIVL-----LQFKLSLISQQ---	470
AaegGr21a	-----TIAIYLVVL-----LQFKLSLISQQ---	462
TcasGr10	-----SIATYLVML-----MQFRLTLMRN---	415
TcasGr39	-----SIATYLVML-----MQFRLTLMRN---	415
AgamGr22	-----FMATYLVVL-----MQFKLTLLRQS---	435
AaegGr21b	-----FMATYLVVL-----MQFKLTLLRQS---	441
DmelGr21a	-----FMATYLVVL-----LQFKITEQRR---	441
AgamGr24	-----TMVTYLVVL-----LQFQISIPDE---	365
AaegGr63a	-----TMVTYLVVL-----LQFQISIPDD---	430
DmelGr63a	-----TMVTYLVVL-----LQFQISIPTDKGDSD	463
TcasGr3	-----TMVTYLVVL-----LQFQISIPEE---	421
DmelOr83b	-----AVVTYFMVL-----VQLK-----	486
AgamOr7	-----AVVTYFMVL-----VQLK-----	478
HvirOr2	-----AVVTYFMVL-----VQLK-----	472
TcasOr16	-----AVVTYFMVL-----VQLK-----	574
TcasOr22	-----AVVTYFMVL-----VQLK-----	613
AmelOr2	-----AMVTYFMVL-----VQLK-----	478
TcasGr31	-----	
TcasGr35	-----VLNSLTFFLLVMIQFKEN-----	251
DmelGr59c	-----MLSSVITHTMVLVQWEIQNDES-----	397
DmelGr92a	-----FLSALLSGLAFIAQYRMQVGN-----	386
DmelGr28a	-----ITGAATCYLIIILIQFRFTHMDDTSSNSTNNL	443
DmelGr64b	-----TTIITYELMISDVINQGSIRQKTQYCREY-	406
TcasGr71	-----IIGNVTTFFIIIIQFNK-----	347
AgamGr19	-----AVITYELVMLHFAQTANQGIVRACSPEQ	402
AaegGr64b	-----IVAVIFTYELVMIKYSRMTAADVGIPENC SAM	350
DmelGr93d	-----AMFCYLVFVTQCVIVYRRRYVI-----	381
TcasGr34	-----ILNTVSTLLIVMVQFDKER-----	324
TcasGr43	-----VLGTACTFLIIIVQFRNS-----	353
TcasGr47	-----VLDTVVAFLMVVAQFQD-----	321
AmelGr3	-----IAGVVTTYLVILIQFNADDTKDDFDIIRNAT	456
AgamGr32b	-----	
AgamGr50	-----IVASTTSYMIILVQYYLQE-----	404
TcasGr20	-----FGGALTTFLVILFQYGGIHGNVY-----	393
TcasGr79	-----LVGAVVTFLIVLLQFQIN-----	348
TcasGr15	-----AESQTINFMSFGFILLRFLSVFESCRTLNNESRKP	419
TcasGr60	-----CVLSLHCAAVGGSANIMSGCSTSTNINTKLFWLY-	364
AgamGr38	-----ILSTAATYIIILLQFESAGSSSG-----	428
TcasGr51	-----LIANVAMYFVIVSQFNQNKQE-----	771
DmelGr39b	-----ILAAKVTYLIVLMQFSSV-----	369
AgamGr28	-----IFVALLSFMIIILIQFDSAKLNKRDRVTAIDQ	393
TcasGr61	-----VVGAAATYITIIYQFQVNKPTCGP-----	670
TcasGr50	-----LDLARTVPKFENKNKETE-----	350
AgamGr12	-----ALTSMITYLIVILIQFRKYDFEDYVVTFRNDSN	390
AgamGr36	-----MFGFVVTYLIIILLQFDKFSDDASKKNFLTS--	404
AgamGr48	-----LATTVNMYLIVLVQFQLNID-----	401
AgamGr49a	-----MIATITSYLIMLVQFQLAEI-----	401
AgamGr49b	-----MIATITSYLIMLVQFQLAEI-----	405
DmelGr2a	-----IVGATTTYLIIILIQFHMSESTIGSDSNGQ---	414
DmelGr32a	-----IFSAVTTYLVILIQFKQLEDKVEDPVPEQT-	461

DmelGr68a	-----IFSAVTTYLVILIQFKQLEDKVEDISQA---	389
AmelGr7	-----VIGTITTYLVVMIQVGDLSNSDKSILS----	410
AmelGr8	-----MTCKITTFLLMLIQFLFVPPC-----	395
AmelGr9	-----ITKGVLIYILILFQFLLNRYLCS-----	391
TcasGr57	-----IFGSVTSYIIISIQFIE-----	387
TcasGr41	-----LFGSTAMNVIILLQFQKQKYN-----	398
AgamGr34	-----MIGAITTYLVIIYIQFYILYADEVKKSSFVSRF	427
AgamGr35	-----LVAGMVTYLIIFIQFNSMVPAGKDDTHHTRKQ	444
AgamGr39	-----MISSFATYLNILVQFDIMQLRASGANNDTLL	422
AgamGr40	-----VAATLVMHVVLVQFDLSIIANKV-----	393
AaegGr28d	-----MAGSFATYLVVLLQFDLANLNGI-----	398
AgamGr42	-----IISALATYSVILIQFELGVPKFFISAILQQNG	428
AgamGr41	-----ACSEAAATYLIIMIQQFETKI-----	437
AgamGr43	-----VFSAAATSYLVLLQFDLSKDLEKSTITA----	428
DmelGr33a	-----TVSAAATSYLVLLQFDMTAILRNEGLMS----	475
AgamGr44	-----IAAAVTNYLIIILIQFEMAIEQ-----	397
AgamGr13	-----MLAAISNFVLLMQFHDYKSKKISYWHGNS	411
AgamGr45	-----IIGATTTYLIILIQFDQSFNGD-----	434
AgamGr46	-----IVGSLATYLLILIQFDIAQNGAKWKTELRAPL	434
DmelGr93a	-----ILSAIISYLFILIQFGITGGFEASEDIKNRFD	419
AmelGr6	-----IAHVMSTYLIILLQFPSS-----	439
AmelGr10	-----VAGLIRVDLPLLLSIFSALTTYLVILT----	386
TcasGr28	-----	
TcasGr40	-----FFEFSVPLAIFAVV-----	373
AgamGr3	-----LVIVILTYVIFIEIAD-----	374
AgamGr4	-----TGITTYMIIFITFSKDIKLEDIDDE----	422
AgamGr6	-----IFGSITSYLVIIYINFI PKTDTFNDYNKEHNLV	421
AgamGr7	-----IAAAITTYMVIIFIQFMPKEDTPTDATTASNST	430
AgamGr47	-----ILSALAMYLVFLIQFDVAPPVGLNSPNLTIPS	412
DmelGr8a	-----MACSVGTYMIYSIQFI PKFSNTYM-----	385
AgamGr5	-----IIFSVGAYISIFIQQAINQIDELKCNDEKQC	441
AgamGr8	-----VLKIVTTYKILFDCYTKAKTSTKPPSAAQNPY	382
DmelGr9a	-----MFFFFILEALVIFLQFVSLVRT-----	341
DmelGr59f	-----LLVASADFFIFLLQYDVTYEALSKSVQGNVTR	404
DmelGr77a	-----IVGAILEYLMILIQFDKVLNK-----	449
DmelGr85a	-----SASLILVHVLYMVQSDYISITN-----	397
TcasGr27	-----IMQKAWSFFTALKNMHDIRNN-----	346
TcasGr48	-----SLLNDILFPVAGFISDFDCDINSIQYFCLMARCL	392
AgamGr1	-----CGVIATYLTVFLQFDNGDSL-----	387
DmelGr10a	-----IAVTAFSYFITLVQFDLYLRKKS-----	408
DmelGr59e	-----FIGVLMAIVIFLIQI GLGNKSLMGVALNRSNW	396
DmelGr10b	-----LISCSLSYGI III IQIGYIPG-----	373
DmelGr89a	-----LVSAMNFIVVILQTSFEHINHGEI-----	362
DmelGr57a	-----LFTSILVNYLLILIQFAMTQKMGEIEQQKIAL	410
DmelGr47b	-----GMANYV I I LVQLLFQQQIKDHQLTSGKD	400
DmelGr58a	-----YFFYVLVQVLVLVQFDLKNKVEKRN-----	395
DmelGr58b	-----YIGSILSNV I I LMQFDLRRQRQP INDRQYL I H	400
DmelGr98a	-----FFFGMISYIVICIQFSINFRAKKMSNEQMSQN	383
AaegGr93a	-----IIAASCSYLILLIQTA-----	395
TcasGr19	-----MIWNSTRRLFVVW-----	355
DmelGr47a	-----LLAKSTLYTICCLQNDYNKLKA-----	361
DmelGr58c	-----MTRSIITNVLVLCQIAYKKYG-----	412
TcasGr38	-----	
TcasGr46	RCKFSEFMTKLEFDVKLQSDRLMIDYKTQKTGSKIHLFVKCVFLMGYQIFDWVQKEQSL	802
TcasGr1	-----	
TcasGr123	-----	
TcasGr62	-----	
TcasGr25	ALTS-----TEHSLSQSQHIQKIPKN-----	314
TcasGr59	ALTS-----TEHSLSQSQHIQKIPKN-----	489
AgamGr2	GSTT---AMAVVEGVVTTALT TYVSN-----	445
AaegGr66a	VTAA---TVAPLLNLSTTALSTYVANP-----	507
DmelGr66a	NDTAGLVGAATDMDNISSTLRDFVTTTTPAV-----	530
TcasGr11	-----	
TcasGr55	C-----	402
TcasGr21	-----	
TcasGr56	-----	
AaegGr	TPANTTSLP-----	449
AaegGr28a	-----	

AgamGr33	G--NETW-----	443
DmelGr28bB	TFNNMTNHTL-----	443
DmelGr28bC	TFNNMTNHTL-----	470
DmelGr28bD	TFNNMTNHTL-----	440
DmelGr28bA	TFNNMTNHTL-----	452
DmelGr28bE	TFNNMTNHTL-----	447
AgamGr25	-----	
AaegGr43a	-----	
DmelGr43a	-----	
AgamGr37b	GST-----	379
AgamGr37d	GST-----	375
AgamGr37a	GST-----	389
AgamGr37c	GST-----	383
AgamGr37e	GST-----	383
AgamGr37f	GST-----	410
AaegGr28c	SGV-----	573
AaegGr28b	TTTVKPKQ-----	427
AaegGr28e	TTTAKPKQ-----	427
TcasGr14	-----	
TcasGr49	-----	
AmelGr4	L-----	415
AmelGr5	R-----	414
TcasGr16	-----	
TcasGr22	-----	
TcasGr17	-----	
TcasGr150	-----	
TcasGr32	IPFYSTLRPINLLVQIILDVILLILNVHTILTITKRNQWCKLLENLKLDRENN-----	420
TcasGr54	-----	
TcasGr37	-----	
TcasGr53	-----	
TcasGr5	-----PVVLFIQVAADTVLFFILNISTIIITARKKQQWNSLIKILKTVSNRNDKGDIF-----	395
TcasGr12	-----	
TcasGr13	-----	
TcasGr104	-----	
TcasGr45	-----	
TcasGr98	-----	
TcasGr52	-----	
TcasGr105	-----	
TcasGr4	-----	
TcasGr44	-----	
AgamGr9a	TSNVSTVQP-----	397
AgamGr9c	TSNVSTVQP-----	396
AgamGr9b	TSNVSTVQP-----	447
AgamGr9d	TSNVSTVQP-----	403
AgamGr9e	TSNVSTVQP-----	399
AgamGr9f	TSNVSTVQP-----	396
AgamGr9g	TSNVSTVQP-----	399
AgamGr9i	TSNVSTVQP-----	400
AgamGr9h	TSNVSTVQP-----	405
AgamGr9j	TSNVSTVQP-----	436
AgamGr9l	TSNVSTVQP-----	426
AgamGr9k	TSNVSTVQP-----	418
AgamGr9m	TSNVSTVQP-----	421
AgamGr9n	TSNVSTVQP-----	388
AgamGr10	TSNVSTVQP-----	388
AgamGr11	TANGSDPNLKVH-----	397
DmelGr23aA	-----	
DmelGr23aB	-----	
DmelGr39aA	-----	
DmelGr39aB	-----	
DmelGr39aC	-----	
DmelGr39aD	-----	
DmelGr98c	DTS-----	408
DmelGr98d	STELKAYTA-----	412
DmelGr98b	-----	
AgamGr51	-----	
AgamGr52	-----	
DmelGr94a	-----	
DmelGr97a	-----	
DmelGr93b	-----	

DmelGr93c	-----	
DmelGr22d	-----	
DmelGr22e	-----	
DmelGr22a	-----	
DmelGr22b	-----	
DmelGr22c	-----	
DmelGr22f	-----	
DmelGr36a	-----	
DmelGr36c	-----	
DmelGr36b	-----	
DmelGr59d	-----	
DmelGr59a	-----	
DmelGr59b	-----	
AgamGr26	SPSLPNDTNTPGNGTTI-----	445
AgamGr27	-----	
AgamGr29	-----	
AgamGr31	-----	
AgamGr30	IYNISVET-----	422
AgamGr32a	-----	
TcasGr2	TLITIGLYFQLCEFSRLNFSVEHLLMELSRAIDSVACSKTVSDGIRHYVNVTFPHLFNG	512
TcasGr9	-----RDEKPYSRNSIC-----	408
TcasGr7	-----ETISEQIDSCPVYL-----	429
TcasGr30	-----ETISEQIDSCPVYL-----	394
TcasGr29	-----ETISEQIDSCPVYL-----	429
AaegGr64f	-----DTTRDCDF-----	380
AaegGr64a3	-----	
AgamGr14	-----	
AgamGr18	-----DTSTDCSYF-----	417
AaegGr64d	-----DPTTDCSFY-----	449
AgamGr17	-----EKSDFCDGVKRLY-----	410
AaegGr64c	-----DNTQFCDGGHRLY-----	434
DmelGr64c	-----VQKSFCEGGVSSKSIFS-----	419
DmelGr64d	-----VQKSICSRGPGSSMSIFFS-----	429
AgamGr20	-----SSKGVGEDLPCGYID-----	439
AaegGr61a	-----DEPDDNNDVSCEPLHLD-----	441
AgamGr21	-----ESESKGNIPLCTKFRRFHVSV-----	472
AaegGr64a	-----ESEKGYIRPCS-----	345
DmelGr64a	-----PNRRKGLQPLCA-----	456
DmelGr61a	-----KSHKG---LRCA-----	436
AgamGr15	-----ASDVLCKLKRMDTL-----	448
AaegGr1	-----TADYDLCTFRRT-----	449
DmelGr5a	-----TWDCSPFNLD-----	444
DmelGr64f	-----LWDCDQSYYS-----	469
DmelGr64e	-----VPGCFEN-----	460
AmelGr1	-----TDASNATIVCEVK-----	395
AmelGr2	-----	
AgamGr16	-----KNGDDNPCTWVAYKTVCQRVYGVSVFSGPDRT-----	435
AaegGr64e	-----KNGDQNPCT-----	434
TCasGr6	-----G-----	387
TcasGr26	-----G-----	387
TcasGr33	-----G-----	387
AgamGr23	-----IPVEI IENVKLLQKQ-----	485
AaegGr21a	-----MPIELME- IKHSHKG-----	476
TcasGr10	-----AQLAARRAIANVSVSSGNTTMS-----	437
TcasGr39	-----AQLAARRAIAN-----	426
AgamGr22	-----AKNAFISALKANLSRIRSLDADKVNT-----	461
AaegGr21b	-----ARKALIPALRANLTKLKEN-----	460
DmelGr21a	-----IGQQQA-----	447
AgamGr24	-----PSAMLHMSNS-SHS-----	378
AaegGr63a	-----SSMLVMHNMGTGSYRE-----	445
DmelGr63a	EGANNITVDFV-----MDSLNDMSLMGASTLSTTTVGTTLPPPIMKLGKRGK-----	512
TcasGr3	-----ASPTNSTTITTTQTPN-----	436
DmelOr83b	-----	
AgamOr7	-----	
HvirOr2	-----	
TcasOr16	-----	
TcasOr22	-----	
AmelOr2	-----	
TcasGr31	-----	
TcasGr35	-----	

DmelGr59c	-----	
DmelGr92a	-----	
DmelGr28a	HSIHLGD-----	450
DmelGr64b	-----	
TcasGr71	-----	
AgamGr19	FLFQPKMQITN-----	414
AaegGr64b	AFSQD-----	355
DmelGr93d	-----	
TcasGr34	-----	
TcasGr43	-----	
TcasGr47	-----	
AmelGr3	QILKNASPLQNFTGLKTIV-----	475
AgamGr32b	-----	
AgamGr50	-----	
TcasGr20	-----	
TcasGr79	-----	
TcasGr15	SFVIQFSHIPVDNIEFAGALVTYELTLFQYHAFYLT-----	455
TcasGr60	-----	
AgamGr38	-----	
TcasGr51	-----	
DmelGr39b	-----	
AgamGr28	LYTPTNS-----	400
TcasGr61	-----	
TcasGr50	-----	
AgamGr12	ISF-----	393
AgamGr36	-----	
AgamGr48	-----	
AgamGr49a	-----	
AgamGr49b	-----	
DmelGr2a	-----	
DmelGr32a	-----	
DmelGr68a	-----	
AmelGr7	-----	
AmelGr8	-----	
AmelGr9	-----	
TcasGr57	-----	
TcasGr41	-----	
AgamGr34	QI-----	429
AgamGr35	HVTEERF-----	451
AgamGr39	SFERS-----	427
AgamGr40	-----	
AaegGr28d	-----	
AgamGr42	DMTTTNSQP-----	437
AgamGr41	-----	
AgamGr43	-----	
DmelGr33a	-----	
AgamGr44	-----	
AgamGr13	SKPLTVRS-----	419
AgamGr45	-----	
AgamGr46	V-----	435
Dmelr93a	-----	
AmelGr6	-----	
AmelGr10	-----	
TcasGr28	-----	
TcasGr40	-----	
AgamGr3	-----	
AgamGr4	-----	
AgamGr6	TT-----	423
AgamGr7	LANSTATATPE-----	441
AgamGr47	IELIDFEV-----	420
DmelGr8a	-----	
AgamGr5	-----	
AgamGr8	RRNHRVKRTLCEVEAEAKSFLTAKKII-----	409
DmelGr9a	-----	
DmelGr59f	YK-----	406
DmelGr77a	-----	
DmelGr85a	-----	
TcasGr27	-----	
TcasGr48	NTLIFYHISTYEYSI-----	408
AgamGr1	-----	

DmelGr10a	-----	
DmelGr59e	VYV-----	399
DmelGr10b	-----	
DmelGr89a	-----	
DmelGr57a	QEWIGF-----	416
DmelGr47b	VDIVGPMGPITHMD-----	414
DmelGr58a	-----	
DmelGr58b	LMKNKTKV-----	408
DmelGr98a	ITSTSAPI-----	391
AaegGr93a	-----	
TcasGr19	-----	
DmelGr47a	-----	
DmelGr58c	-----	
TcasGr38	-----	
TcasGr46	AHSVGVFLTIFNAAHCYLATELVLMMLKNRYIILNGRLIKMETKAQSVALGKICTLHHHLS	862
TcasGr1	-----	
TcasGr123	-----	
TcasGr62	-----	
TcasGr25	-----	
TcasGr59	-----	
AgamGr2	-----	
AaegGr66a	-----	
DmelGr66a	-----	
TcasGr11	-----	
TcasGr55	-----	
TcasGr21	-----	
TcasGr56	-----	
AaegGr	-----	
AaegGr28a	-----	
AgamGr33	-----	
DmelGr28bB	-----	
DmelGr28bC	-----	
DmelGr28bD	-----	
DmelGr28bA	-----	
DmelGr28bE	-----	
AgamGr25	-----	
AaegGr43a	-----	
DmelGr43a	-----	
AgamGr37b	-----	
AgamGr37d	-----	
AgamGr37a	-----	
AgamGr37c	-----	
AgamGr37e	-----	
AgamGr37f	-----	
AaegGr28c	-----	
AaegGr28b	-----	
AaegGr28e	-----	
TcasGr14	-----	
TcasGr49	-----	
AmelGr4	-----	
AmelGr5	-----	
TcasGr16	-----	
TcasGr22	-----	
TcasGr17	-----	
TcasGr150	-----	
TcasGr32	--SSFVVANVLFQLIHVYYTVVFTLLLGVDVFVKEYAFEYIQLYSQFILYFLLFATLKILL	478
TcasGr54	-----	
TcasGr37	-----	
TcasGr53	-----	
TcasGr5	WFSFPLVANLAFVTIVTYETFVWVWQIMGAEFFKLYAVEYFQMYAQFIVG-----	444
TcasGr12	-----	
TcasGr13	-----	
TcasGr104	-----	
TcasGr45	-----	
TcasGr98	-----	
TcasGr52	-----	
TcasGr105	-----	
TcasGr4	-----	

TcasGr44	-----
AgamGr9a	-----
AgamGr9c	-----
AgamGr9b	-----
AgamGr9d	-----
AgamGr9e	-----
AgamGr9f	-----
AgamGr9g	-----
AgamGr9i	-----
AgamGr9h	-----
AgamGr9j	-----
AgamGr9l	-----
AgamGr9k	-----
AgamGr9m	-----
AgamGr9n	-----
AgamGr10	-----
AgamGr11	-----
DmelGr23aA	-----
DmelGr23aB	-----
DmelGr39aA	-----
DmelGr39aB	-----
DmelGr39aC	-----
DmelGr39aD	-----
DmelGr98c	-----
DmelGr98d	-----
DmelGr98b	-----
AgamGr51	-----
AgamGr52	-----
DmelGr94a	-----
DmelGr97a	-----
DmelGr93b	-----
DmelGr93c	-----
DmelGr22d	-----
DmelGr22e	-----
DmelGr22a	-----
DmelGr22b	-----
DmelGr22c	-----
DmelGr22f	-----
DmelGr36a	-----
DmelGr36c	-----
DmelGr36b	-----
DmelGr59d	-----
DmelGr59a	-----
DmelGr59b	-----
AgamGr26	-----
AgamGr27	-----
AgamGr29	-----
AgamGr31	-----
AgamGr30	-----
AgamGr32a	-----
TcasGr2	LV DYSLWKALIFQISNLQTTFGGTFI ILLSMAFATRMKQSR TKIEALVKSHIAGAI 572
TcasGr9	-----
TcasGr7	-----
TcasGr30	-----
TcasGr29	-----
AaegGr64f	-----
AaegGr64a3	-----
AgamGr14	-----
AgamGr18	-----
AaegGr64d	-----
AgamGr17	-----
AaegGr64c	-----
DmelGr64c	-----
DmelGr64d	-----
AgamGr20	-----
AaegGr61a	-----
AgamGr21	-----
AaegGr64a	-----
DmelGr64a	-----
DmelGr61a	-----

AgamGr15 -----
AaegGr1 -----
DmelGr5a -----
DmelGr64f -----
DmelGr64e -----
AmelGr1 -----
AmelGr2 -----
AgamGr16 -----
AaegGr64e -----
TCasGr6 -----
TcasGr26 -----
TcasGr33 -----
AgamGr23 -----
AaegGr21a -----
TcasGr10 -----
TcasGr39 -----
AgamGr22 -----
AaegGr21b -----
DmelGr21a -----
AgamGr24 -----
AaegGr63a -----
DmelGr63a -----
TcasGr3 -----
DmelOr83b -----
AgamOr7 -----
HvirOr2 -----
TcasOr16 -----
TcasOr22 -----
AmelOr2 -----
TcasGr31 -----
TcasGr35 -----
DmelGr59c -----
DmelGr92a -----
DmelGr28a -----
DmelGr64b -----
TcasGr71 -----
AgamGr19 -----
AaegGr64b -----
DmelGr93d -----
TcasGr34 -----
TcasGr43 -----
TcasGr47 -----
AmelGr3 -----
AgamGr32b -----
AgamGr50 -----
TcasGr20 -----
TcasGr79 -----
TcasGr15 -----
TcasGr60 -----
AgamGr38 -----
TcasGr51 -----
DmelGr39b -----
AgamGr28 -----
TcasGr61 -----
TcasGr50 -----
AgamGr12 -----
AgamGr36 -----
AgamGr48 -----
AgamGr49a -----
AgamGr49b -----
DmelGr2a -----
DmelGr32a -----
DmelGr68a -----
AmelGr7 -----
AmelGr8 -----
AmelGr9 -----
TcasGr57 -----
TcasGr41 -----
AgamGr34 -----
AgamGr35 -----

AgamGr39 -----
 AgamGr40 -----
 AaegGr28d -----
 AgamGr42 -----
 AgamGr41 -----
 AgamGr43 -----
 DmelGr33a -----
 AgamGr44 -----
 AgamGr13 -----
 AgamGr45 -----
 AgamGr46 -----
 Dmelr93a -----
 AmelGr6 -----
 AmelGr10 -----
 TcasGr28 -----
 TcasGr40 -----
 AgamGr3 -----
 AgamGr4 -----
 AgamGr6 -----
 AgamGr7 -----
 AgamGr47 -----
 DmelGr8a -----
 AgamGr5 -----
 AgamGr8 -----
 DmelGr9a -----
 DmelGr59f -----
 DmelGr77a -----
 DmelGr85a -----
 TcasGr27 -----
 TcasGr48 -----
 AgamGr1 -----
 DmelGr10a -----
 DmelGr59e -----
 DmelGr10b -----
 DmelGr89a -----
 DmelGr57a -----
 DmelGr47b -----
 DmelGr58a -----
 DmelGr58b -----
 DmelGr98a -----
 AaegGr93a -----
 TcasGr19 -----
 DmelGr47a -----
 DmelGr58c -----

TcasGr38 -----
 TcasGr46 KLIRLFNEIFGHGLLLMFGISFLLVTQTIFALCVVLQLQENDWLQLGYLIFVSTLYTANV 922
 TcasGr1 -----
 TcasGr123 -----
 TcasGr62 -----
 TcasGr25 -----
 TcasGr59 -----
 AgamGr2 -----
 AaegGr66a -----
 DmelGr66a -----
 TcasGr11 -----
 TcasGr55 -----
 TcasGr21 -----
 TcasGr56 -----
 AaegGr -----
 AaegGr28a -----
 AgamGr33 -----
 DmelGr28bB -----
 DmelGr28bC -----
 DmelGr28bD -----
 DmelGr28bA -----
 DmelGr28bE -----
 AgamGr25 -----
 AaegGr43a -----

DmelGr43a	-----	
AgamGr37b	-----	
AgamGr37d	-----	
AgamGr37a	-----	
AgamGr37c	-----	
AgamGr37e	-----	
AgamGr37f	-----	
AaegGr28c	-----	
AaegGr28b	-----	
AaegGr28e	-----	
TcasGr14	-----	
TcasGr49	-----	
AmelGr4	-----	
AmelGr5	-----	
TcasGr16	-----	
TcasGr22	-----	
TcasGr17	-----	
TcasGr150	-----	
TcasGr32	GKYTQLKACLMEEKRPMSLSQVIKAQIYSLRETVDVFNDIFGWPFLLLITFTSLQIMVYL	538
TcasGr54	-----	
TcasGr37	-----	
TcasGr53	-----	
TcasGr5	-----	
TcasGr12	-----	
TcasGr13	-----	
TcasGr104	-----	
TcasGr45	-----	
TcasGr98	-----	
TcasGr52	-----	
TcasGr105	-----	
TcasGr4	-----	
TcasGr44	-----	
AgamGr9a	-----	
AgamGr9c	-----	
AgamGr9b	-----	
AgamGr9d	-----	
AgamGr9e	-----	
AgamGr9f	-----	
AgamGr9g	-----	
AgamGr9i	-----	
AgamGr9h	-----	
AgamGr9j	-----	
AgamGr9l	-----	
AgamGr9k	-----	
AgamGr9m	-----	
AgamGr9n	-----	
AgamGr10	-----	
AgamGr11	-----	
DmelGr23aA	-----	
DmelGr23aB	-----	
DmelGr39aA	-----	
DmelGr39aB	-----	
DmelGr39aC	-----	
DmelGr39aD	-----	
DmelGr98c	-----	
DmelGr98d	-----	
DmelGr98b	-----	
AgamGr51	-----	
AgamGr52	-----	
DmelGr94a	-----	
DmelGr97a	-----	
DmelGr93b	-----	
DmelGr93c	-----	
DmelGr22d	-----	
DmelGr22e	-----	
DmelGr22a	-----	
DmelGr22b	-----	
DmelGr22c	-----	
DmelGr22f	-----	
DmelGr36a	-----	

DmelGr36c	-----	
DmelGr36b	-----	
DmelGr59d	-----	
DmelGr59a	-----	
DmelGr59b	-----	
AgamGr26	-----	
AgamGr27	-----	
AgamGr29	-----	
AgamGr31	-----	
AgamGr30	-----	
AgamGr32a	-----	
TcasGr2	VTYELVVIQFNLRL-----	586
TcasGr9	-----	
TcasGr7	-----	
TcasGr30	-----	
TcasGr29	-----	
AaegGr64f	-----	
AaegGr64a3	-----	
AgamGr14	-----	
AgamGr18	-----	
AaegGr64d	-----	
AgamGr17	-----	
AaegGr64c	-----	
DmelGr64c	-----	
DmelGr64d	-----	
AgamGr20	-----	
AaegGr61a	-----	
AgamGr21	-----	
AaegGr64a	-----	
DmelGr64a	-----	
DmelGr61a	-----	
AgamGr15	-----	
AaegGr1	-----	
DmelGr5a	-----	
DmelGr64f	-----	
DmelGr64e	-----	
AmelGr1	-----	
AmelGr2	-----	
AgamGr16	-----	
AaegGr64e	-----	
TCasGr6	-----	
TcasGr26	-----	
TcasGr33	-----	
AgamGr23	-----	
AaegGr21a	-----	
TcasGr10	-----	
TcasGr39	-----	
AgamGr22	-----	
AaegGr21b	-----	
DmelGr21a	-----	
AgamGr24	-----	
AaegGr63a	-----	
DmelGr63a	-----	
TcasGr3	-----	
DmelOr83b	-----	
AgamOr7	-----	
HvirOr2	-----	
TcasOr16	-----	
TcasOr22	-----	
AmelOr2	-----	
TcasGr31	-----	
TcasGr35	-----	
DmelGr59c	-----	
DmelGr92a	-----	
DmelGr28a	-----	
DmelGr64b	-----	
TcasGr71	-----	
AgamGr19	-----	
AaegGr64b	-----	
DmelGr93d	-----	

TcasGr34 -----
TcasGr43 -----
TcasGr47 -----
AmelGr3 -----
AgamGr32b -----
AgamGr50 -----
TcasGr20 -----
TcasGr79 -----
TcasGr15 -----
TcasGr60 -----
AgamGr38 -----
TcasGr51 -----
DmelGr39b -----
AgamGr28 -----
TcasGr61 -----
TcasGr50 -----
AgamGr12 -----
AgamGr36 -----
AgamGr48 -----
AgamGr49a -----
AgamGr49b -----
DmelGr2a -----
DmelGr32a -----
DmelGr68a -----
AmelGr7 -----
AmelGr8 -----
AmelGr9 -----
TcasGr57 -----
TcasGr41 -----
AgamGr34 -----
AgamGr35 -----
AgamGr39 -----
AgamGr40 -----
AaegGr28d -----
AgamGr42 -----
AgamGr41 -----
AgamGr43 -----
DmelGr33a -----
AgamGr44 -----
AgamGr13 -----
AgamGr45 -----
AgamGr46 -----
Dmelr93a -----
AmelGr6 -----
AmelGr10 -----
TcasGr28 -----
TcasGr40 -----
AgamGr3 -----
AgamGr4 -----
AgamGr6 -----
AgamGr7 -----
AgamGr47 -----
DmelGr8a -----
AgamGr5 -----
AgamGr8 -----
DmelGr9a -----
DmelGr59f -----
DmelGr77a -----
DmelGr85a -----
TcasGr27 -----
TcasGr48 -----
AgamGr1 -----
DmelGr10a -----
DmelGr59e -----
DmelGr10b -----
DmelGr89a -----
DmelGr57a -----
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DmelGr28bD	-----	
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DmelGr28bE	-----	
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DmelGr43a	-----	
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AgamGr37f	-----	
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AaegGr28b	-----	
AaegGr28e	-----	
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AgamGr9b	-----	
AgamGr9d	-----	
AgamGr9e	-----	
AgamGr9f	-----	
AgamGr9g	-----	

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AgamGr9h -----
AgamGr9j -----
AgamGr9l -----
AgamGr9k -----
AgamGr9m -----
AgamGr9n -----
AgamGr10 -----
AgamGr11 -----
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DmelGr39aC -----
DmelGr39aD -----
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DmelGr98d -----
DmelGr98b -----
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DmelGr93b -----
DmelGr93c -----
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DmelGr22e -----
DmelGr22a -----
DmelGr22b -----
DmelGr22c -----
DmelGr22f -----
DmelGr36a -----
DmelGr36c -----
DmelGr36b -----
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DmelGr59b -----
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AaegGr64a -----
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DmelGr64e -----
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AgamGr16 -----

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DmelGr63a -----
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AgamGr44 -----

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 AgamGr45 -----
 AgamGr46 -----
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 DmelGr58b -----
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 AaegGr93a -----
 TcasGr19 -----
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 DmelGr58c -----

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 TcasGr56 -----
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 DmelGr28bC -----
 DmelGr28bD -----
 DmelGr28bA -----
 DmelGr28bE -----
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 DmelGr43a -----
 AgamGr37b -----
 AgamGr37d -----
 AgamGr37a -----
 AgamGr37c -----
 AgamGr37e -----
 AgamGr37f -----
 AaegGr28c -----

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AaegGr28e	-----	
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AgamGr9h	-----	
AgamGr9j	-----	
AgamGr9l	-----	
AgamGr9k	-----	
AgamGr9m	-----	
AgamGr9n	-----	
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AgamGr11	-----	
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DmelGr39aB	-----	
DmelGr39aC	-----	
DmelGr39aD	-----	
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DmelGr98d	-----	
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DmelGr22b	-----	
DmelGr22c	-----	
DmelGr22f	-----	
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DmelGr36b	-----	
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DmelGr59b	-----	
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DmelGr58b -----
DmelGr98a -----
AaegGr93a -----
TcasGr19 -----
DmelGr47a -----
DmelGr58c -----

TcasGr38 -----

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DmelGr28bD	-----	
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DmelGr28bE	-----	
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AgamGr37c	-----	
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AgamGr9e	-----	
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AgamGr9i	-----	
AgamGr9h	-----	
AgamGr9j	-----	
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AgamGr9m	-----	
AgamGr9n	-----	
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DmelGr22b -----
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 DmelGr28bD -----
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 DmelGr28bE -----
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TcasGr29 -----

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DmelGr58b	-----
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TcasGr56 -----
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DmelGr28bC -----
DmelGr28bD -----
DmelGr28bA -----
DmelGr28bE -----
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DmelGr43a -----
AgamGr37b -----
AgamGr37d -----
AgamGr37a -----
AgamGr37c -----
AgamGr37e -----
AgamGr37f -----
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AaegGr28b -----
AaegGr28e -----
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TcasGr13 -----
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TcasGr45 -----
TcasGr98 -----
TcasGr52 -----
TcasGr105 -----
TcasGr4 -----
TcasGr44 -----
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AgamGr9c -----
AgamGr9b -----
AgamGr9d -----
AgamGr9e -----
AgamGr9f -----
AgamGr9g -----
AgamGr9i -----
AgamGr9h -----
AgamGr9j -----
AgamGr9l -----
AgamGr9k -----
AgamGr9m -----
AgamGr9n -----
AgamGr10 -----
AgamGr11 -----
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DmelGr23aB -----
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DmelGr39aB -----
DmelGr39aC -----
DmelGr39aD -----
DmelGr98c -----

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DmelGr98b -----
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DmelGr22e -----
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DmelGr22b -----
DmelGr22c -----
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DmelGr36c -----
DmelGr36b -----
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DmelGr59b -----
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DmelGr64a -----
DmelGr61a -----
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DmelGr63a -----
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DmelOr83b -----

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TcasOr22 -----
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AgamGr13 -----
AgamGr45 -----
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AmelGr10 -----
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TcasGr40 -----
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AgamGr4 -----
AgamGr6 -----
AgamGr7 -----
AgamGr47 -----
DmelGr8a -----
AgamGr5 -----
AgamGr8 -----

DmelGr9a -----
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 DmelGr77a -----
 DmelGr85a -----
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 TcasGr48 -----
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 TcasGr19 -----
 DmelGr47a -----
 DmelGr58c -----

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 TcasGr56 -----
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 DmelGr28bC -----
 DmelGr28bD -----
 DmelGr28bA -----
 DmelGr28bE -----
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 DmelGr43a -----
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 AgamGr37d -----
 AgamGr37a -----
 AgamGr37c -----
 AgamGr37e -----
 AgamGr37f -----
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 AaegGr28b -----
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 TcasGr12 -----

TcasGr13 -----
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TcasGr44 -----
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AgamGr9b -----
AgamGr9d -----
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AgamGr9f -----
AgamGr9g -----
AgamGr9i -----
AgamGr9h -----
AgamGr9j -----
AgamGr9l -----
AgamGr9k -----
AgamGr9m -----
AgamGr9n -----
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DmelGr98b -----
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DmelGr93c -----
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DmelGr22b -----
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DmelGr36c -----
DmelGr36b -----
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DmelGr59a -----
DmelGr59b -----
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AgamGr17 -----
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DmelGr64c -----

DmelGr64d -----
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DmelGr64a -----
DmelGr61a -----
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DmelGr64f -----
DmelGr64e -----
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 TcasGr19 -----
 DmelGr47a -----
 DmelGr58c -----

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 DmelGr66a -----
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 TcasGr56 -----
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DmelGr28bC -----
DmelGr28bD -----
DmelGr28bA -----
DmelGr28bE -----
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DmelGr43a -----
AgamGr37b -----
AgamGr37d -----
AgamGr37a -----
AgamGr37c -----
AgamGr37e -----
AgamGr37f -----
AaegGr28c -----
AaegGr28b -----
AaegGr28e -----
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TcasGr5 -----
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AgamGr9b -----
AgamGr9d -----
AgamGr9e -----
AgamGr9f -----
AgamGr9g -----
AgamGr9i -----
AgamGr9h -----
AgamGr9j -----
AgamGr9l -----
AgamGr9k -----
AgamGr9m -----
AgamGr9n -----
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AgamGr11 -----
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DmelGr39aB -----
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DmelGr39aD -----
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DmelGr98d -----
DmelGr98b -----
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DmelGr93b -----
DmelGr93c -----

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DmelGr22a -----
DmelGr22b -----
DmelGr22c -----
DmelGr22f -----
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DmelGr36b -----
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DmelGr59b -----
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DmelGr64d -----
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DmelGr64a -----
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DmelGr64e -----
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AmelGr2 -----
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DmelGr63a -----
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DmelGr85a -----
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TcasGr21 -----
TcasGr56 -----
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DmelGr28bC -----
DmelGr28bD -----
DmelGr28bA -----
DmelGr28bE -----
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DmelGr43a -----
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AgamGr37d -----
AgamGr37a -----
AgamGr37c -----
AgamGr37e -----
AgamGr37f -----
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AaegGr28b -----
AaegGr28e -----
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AmelGr5 -----
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TcasGr98 -----
TcasGr52 -----
TcasGr105 -----
TcasGr4 -----
TcasGr44 -----

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AgamGr9b -----
AgamGr9d -----
AgamGr9e -----
AgamGr9f -----
AgamGr9g -----
AgamGr9i -----
AgamGr9h -----
AgamGr9j -----
AgamGr9l -----
AgamGr9k -----
AgamGr9m -----
AgamGr9n -----
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DmelGr23aB -----
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DmelGr39aB -----
DmelGr39aC -----
DmelGr39aD -----
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DmelGr98d -----
DmelGr98b -----
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DmelGr22b -----
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DmelGr59b -----
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 DmelGr85a -----
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 DmelGr43a -----

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AgamGr37c -----
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DmelGr98b -----
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DmelGr36c -----

DmelGr36b	-----
DmelGr59d	-----
DmelGr59a	-----
DmelGr59b	-----
AgamGr26	-----
AgamGr27	-----
AgamGr29	-----
AgamGr31	-----
AgamGr30	-----
AgamGr32a	-----
TcasGr2	-----
TcasGr9	-----
TcasGr7	-----
TcasGr30	-----
TcasGr29	-----
AaegGr64f	-----
AaegGr64a3	-----
AgamGr14	-----
AgamGr18	-----
AaegGr64d	-----
AgamGr17	-----
AaegGr64c	-----
DmelGr64c	-----
DmelGr64d	-----
AgamGr20	-----
AaegGr61a	-----
AgamGr21	-----
AaegGr64a	-----
DmelGr64a	-----
DmelGr61a	-----
AgamGr15	-----
AaegGr1	-----
DmelGr5a	-----
DmelGr64f	-----
DmelGr64e	-----
AmelGr1	-----
AmelGr2	-----
AgamGr16	-----
AaegGr64e	-----
TCasGr6	-----
TcasGr26	-----
TcasGr33	-----
AgamGr23	-----
AaegGr21a	-----
TcasGr10	-----
TcasGr39	-----
AgamGr22	-----
AaegGr21b	-----
DmelGr21a	-----
AgamGr24	-----
AaegGr63a	-----
DmelGr63a	-----
TcasGr3	-----
DmelOr83b	-----
AgamOr7	-----
HvirOr2	-----
TcasOr16	-----
TcasOr22	-----
AmelOr2	-----
TcasGr31	-----
TcasGr35	-----
DmelGr59c	-----
DmelGr92a	-----
DmelGr28a	-----
DmelGr64b	-----
TcasGr71	-----
AgamGr19	-----
AaegGr64b	-----
DmelGr93d	-----
TcasGr34	-----

TcasGr43	-----
TcasGr47	-----
AmelGr3	-----
AgamGr32b	-----
AgamGr50	-----
TcasGr20	-----
TcasGr79	-----
TcasGr15	-----
TcasGr60	-----
AgamGr38	-----
TcasGr51	-----
DmelGr39b	-----
AgamGr28	-----
TcasGr61	-----
TcasGr50	-----
AgamGr12	-----
AgamGr36	-----
AgamGr48	-----
AgamGr49a	-----
AgamGr49b	-----
DmelGr2a	-----
DmelGr32a	-----
DmelGr68a	-----
AmelGr7	-----
AmelGr8	-----
AmelGr9	-----
TcasGr57	-----
TcasGr41	-----
AgamGr34	-----
AgamGr35	-----
AgamGr39	-----
AgamGr40	-----
AaegGr28d	-----
AgamGr42	-----
AgamGr41	-----
AgamGr43	-----
DmelGr33a	-----
AgamGr44	-----
AgamGr13	-----
AgamGr45	-----
AgamGr46	-----
Dmelr93a	-----
AmelGr6	-----
AmelGr10	-----
TcasGr28	-----
TcasGr40	-----
AgamGr3	-----
AgamGr4	-----
AgamGr6	-----
AgamGr7	-----
AgamGr47	-----
DmelGr8a	-----
AgamGr5	-----
AgamGr8	-----
DmelGr9a	-----
DmelGr59f	-----
DmelGr77a	-----
DmelGr85a	-----
TcasGr27	-----
TcasGr48	-----
AgamGr1	-----
DmelGr10a	-----
DmelGr59e	-----
DmelGr10b	-----
DmelGr89a	-----
DmelGr57a	-----
DmelGr47b	-----
DmelGr58a	-----
DmelGr58b	-----
DmelGr98a	-----

AaegGr93a
TcasGr19
DmelGr47a
DmelGr58c

D

TcasOr16	-----MMKFKVTGLVADLMPNIRLIQASG	24
AmelOr2	-----MMKFKQQGLIADLMPNINLMKATG	24
AgamOr7	-----MQVQPTKYVGLVADLMPNIRLMQASG	26
AaegOr7	-----MPNIRLMQGGFG	11
DmelOr83b	-----MTTSMQPSKYTGLVADLMPNIRAMKYSG	28
BmorOr2	-----MMTKVKTQGLVTDLMPICIRLLQAAG	25
BmorOr2a	-----MMTKVKTQGLVTDLMPICIRLLQAAG	25
HvirOr2	-----MMTKVKAQGLVSDLMPNIKLMQMAG	25
AgamOr56	-----MDIVSKQGEFPLVKLSTKLLRIIR	24
AgamOr57	-----MDIVSKQGEFPLVKLSTKLLRIIR	24
AgamOr26	-----MDSNSKKDTFPLIQISTKMLQIIR	24
AgamOr27	-----MKPSCKEGVFPLINLSIKLLKIVG	24
HvirOr9	-----MVDQFQKCLKSVNLYLKF IGL--	21
HvirOr7	-----	
DmelOr85b	-----MEKLMKYASFFYTAVG---	16
DmelOr85c	-----MKFMKYAVFFYTSVG---	15
DmelOr85d	-----MLTKKDTQSAKEQEKLKA IPLHSFLKYANVFYLSIG---	36
DmelOr67a	-----MDNVAEMPEEKYVEVDDFLRLAVKFYNTLG---	30
DmelOr67c	-----METAKDNTARTFMELMRVPVQFYRTIG---	27
DmelOr92a	-----MLFRKRKPKSDDEVITFDELTRFPMTFYKTIG---	32
DmelOr69a	-----MQLHDHMKYIDLGCKMACIPR	21
DmelOr69b	-----MQLEDFMRYPDLCVQAAQLPR	21
TcasOr6	-----	
TcasOr11	-----MGK	3
AgamOr41	-----MSEHP IHTFD	10
AgamOr42	-----METHIGKQHSLERFQ	15
AgamOr43	-----MTFTLSHDLYV	11
AgamOr44	-----MTFTLSHDLYV	11
AgamOr66	-----MEASEKFS	8
AgamOr67	-----MEASEKFC	8
AgamOr72	-----MANVEGFR	8
AgamOr73	-----MANVEEFR	8
AgamOr71	-----MANVKDFR	8
AgamOr74	-----MANVEGFR	8
AgamOr70	-----MATIESFR	8
AgamOr69	-----MATVESFR	8
TcasOr9	-----	
TcasOr18	-----MAKLE	5
DmelOr83a	-----MKSTFKEEKIKDDSKRRDLFVVRQTMCI AAMYPPFG	36
DmelOr85e	-----MASLQFHGNVDADIRYDISLDPARES NLFRLLMGLQLANGTKPSP	45
TcasOr24	-----MTEEKQLR ICLSSC	14
TcasOr25	-----MTEEKELRLCLWSC	14
TcasOr19	-----MVLLPT	6
TcasOr22	-----MAKDSSPVLQESI	13
TcasOr23	-----MAKDTSPVLRESI	13
AmelOr168	-----MNFQNLNRLNALA	13
AmelOr170	-----MNFQNLNRLNAFA	13
AmelOr169	-----MKMNFQNLNRLNTFV	15
DmelOr65b	-----MEASHSS IYYWREQM	15
DmelOr65c	-----MESSYSAVYYWREQM	15
DmelOr65a	-----MTELRSERKNGNWDRLF GPF FESWAVFKAPQAKSRHI IAYWTRDQL	46
TcasOr17	-----MSNFSWKA AVETNITTL	17
TcasOr21	-----MEKYDWMQA IKTNILIL	17
TcasOr56	-----MTATKSLKE I PPIYLRVHLTVL	22
TcasOr15	-----MSKNLKE I PPVYLKVHLTVL	20
AgamOr9	-----MVRLF -FSKTRVT -KLFTRKDERPEMFLPSLRMILFIF	36
AgamOr65	-----MVKFFRCCKARVSP ELLSKKNEKPEAF LPSLRMILFIF	38
BmorOr6	-----MTMRTNAKSFLFVPSKVLTLC	21
BmorOr10	-----MMGNSTDLFLDRTKRILNFF	20
AgamOr34	-----MYDPGRFIFPMRFSMWAW	18
AgamOr37	-----MEAEKQDTPTSDDPYRWGDYIRPVRITVWTW	31
DmelOr94a	-----MDKHKDRIESMR LILQVM	18
DmelOr94b	-----MES -TNRLSAIQ TLLVIQ	17
DmelOr71a	-----MDYDRIRPVRFLTGVL	16
DmelOr46a	-----MSKGVEIF YKQKAF LNIL	19
DmelOr46b	-----MVT -EDFYKYQVWFQIL	17
HvirOr8	-----MVFRQIDCFKINMKFL	16
BmorOr8	-----MMTLVYQTDIFKPNVFFW	18

AmelOr68 -----MTLLQPIFNIL 11
AmelOr69 -----MQLLRTIYHLL 11
AmelOr70 -----MQALQWTRFLL 11
AmelOr71 -----MRILRWTFLLF 11
AmelOr72 -----MHLLRWTFKLF 11
DmelOr19a -----MDIS--KVDSTRALVNH 16
DmelOr19b -----MDIS--KVDSTRALVNH 16
DmelOr33a -----MDSR-RKVRSENYKTYW 17
DmelOr33b -----MDLKPRVIRSEDIYRTY 18
DmelOr22a -----MLSKFFPHIKEKPLSERVKS RDAFIYLD 28
DmelOr22b -----MLSQFFPHIKEKPLSERVKS RDAFVYLD 28
DmelOr42b -----MVFELIRPAPLTEQKR SRDGCYLY 25
DmelOr59b -----MAVFKLIKAPLTEKVQSRQGN IYLY 26
DmelOr59c -----MTKFFFKRLQTAPLDQEV SSLDASDYYY 28
DmelOr98a -----MLFNYL RKPNTNLLTSPDSFRYFE 25
DmelOr42a -----MDLRRWFPTLYTQSKD SPVRSR DATLYLL 29
DmelOr85a -----MIFKYIQEPVLGSLFRS RDSL IYLN 25
DmelOr43b -----MFGHFKLVPAPISEPIQSR DS NAYMM 27
AgamOr2 -----MLIEECP IIGVNV 13
AgamOr10 -----MEVLNCP LLSVNV 13
DmelOr30a -----MELKSMDPVEMPIFGSTL 18
DmelOr49b -----MFEDIQLIYMN-- I 12
DmelOr43a -----MTIEDIGLVGINV 13
AgamOr32 -----MSQLNEFPAYQF 12
AgamOr35 -----MSCVEDFLDAQM 12
DmelOr47a -----MDSFLQVQKSTI 12
DmelOr98b -----MLTDKFLRLQSALF 14
DmelOr9a -----MSDKVKGKKQEEKDQSLRV QILVY 24
AgamOr38 -----MIITVAPVTDAR-PQTPED CGMFKFQRKIL 29
AgamOr39 -----MVSFGAAASNPRDAETTPHWD IFLQRKIL 30
DmelOr24a -----MERHYFMVPKFAL 13
DmelOr45b -----MYPRFLSRNYPLAKHLFFV TRYSF 24
AmelOr74 -----MQGEGYTDVSLKVSQFLL 18
AmelOr86 -----MHATPYS DVSIVVSQFLL 18
AmelOr75 -----MRRRGSKD VSI IWT SFLM 18
AmelOr84 -----MRSTRDIS I IWT SFLM 16
AmelOr87 -----MGAKAVAKVVAH SKLVARHSNKDFALSMTAFLM 33
AmelOr76 -----MKSKEVR-DLSITVTA FYM 18
AmelOr85 -----MSSNKVGGDLSITVMTFY M 19
AmelOr88 -----MNGRNVR-NLSITVTA FYM 18
AmelOr91 -----MS--FLES DVS VSLTSIFM 17
AmelOr92 -----MN--FLENDVA VSLTSIFM 17
AmelOr95 -----MKNDDFSINLSSIFI 15
AmelOr93 -----MN--FLES DVSX---IFM 13
AmelOr77 -----MNGLLNGGDASMTMTAAFM 19
AmelOr94 -----MTLK YRGDVSFSLATFFL 18
AmelOr96 -----MNLKYRKDLAFTVASFY L 18
AmelOr79 -----MQAEYRLDISINLSTFFL 18
AmelOr83 -----MQTDNQLDISISLSTFFL 18
AmelOr80 -----MQTESQLDISINLSTFFL 18
AmelOr81 -----MQTESQVDISMNLSTFFL 18
AmelOr82 -----MQTESQVDISMNLSTFFL 18
AmelOr78 -----MQSENQLDVSITLSTFFL 18
AmelOr89 -----MQREVELDVS VNLAAFFL 18
AmelOr90 -----MEKELDISVNLSSFFL 16
AmelOr142 -----MKNRLTPEKAILFTKLSV 18
AmelOr146 -----MFRNATPEKAI AFTQFIV 18
AmelOr148 -----MLKYVTPEKGIYIVWLSV 18
AmelOr158 -----MLKQITPEKSIYI IWLSV 18
AmelOr147 -----MLKQVSPEKGIYI IWLSV 18
AmelOr150 -----MLKQLTPEKAIHITWISV 18
AmelOr151 -----MLKQLTPEKVIYITWVSV 18
AmelOr152 -----MLKQIISEKTIQI IWFSV 18
AmelOr154 -----MLKKVTPENVIYI IRLSV 18
AmelOr155 -----MLKKATPEKIIDIIRFSV 18
AmelOr157 -----MRRARPEKSVYLWVLSV 17
AmelOr156 -----MIEQVMLKRVYITWLSV 18
AmelOr153 -----MVKEMIPEKTIHITWLSV 18
AmelOr144 -----MGMLNMDIRQVLHILELTG 19
AmelOr145 -----MGMLNMNIRQVFYILELTG 19

AmelOr143 -----MNIRQILYILELIG 14
AmelOr1 -----MENTTNYRNIHYKSDAEYTVHVAKTLL 27
AmelOr3 -----MSVKTARNIRDYHNIHYRSDAEYTVRVAKILL 32
AmelOr6 -----METK--EKDLKQAFY-AQPFL 18
AmelOr7 -----METK--EKDLKQAFY-AQPFL 18
AmelOr4 -----METKHTEKDLKQAFY-VQTFLL 20
AmelOr5 -----METKHTEKDLKQAFY-AQSFL 20
AmelOr8 -----MVQIRNAREGINHTFWFAYPLS 22
AmelOr9 -----MARIRNAREGINHTLWFAYPLS 22
AmelOr11 -----MVQIRNAKEGLKHTFWFAYPFS 22
AmelOr12 -----MARIRNAKDGIRHTFWFAYPFS 22
AmelOr10 -----MVQIRNAKEGLRHTFWFAYPFS 22
AmelOr14 -----MSRVGKAENGMRHTVWFAYPLL 22
AmelOr15 -----MSRIGNAEDGMRHTIWFAYMLL 22
AmelOr13 -----MGQPYSCLKLVYPLL 14
AmelOr16 -----MENISGIAKAEEDLKYATRFVKPIL 25
AmelOr17 -----MENISGIAKAEEDLKYATRFVKPIM 25
AmelOr18 -----MNAEKLMI EGKPPNANYKNDLSFNVRNLNVWTL 32
AmelOr19 -----MNMEHFIVEKKSYNASYKNDLFFNVQLNVWTL 32
AmelOr22 -----MEKSKINS-ISCITQTNHDYKRVNLSIQWSRWIL 33
AmelOr24 -----MSYTKTDHDYKRVNLSIQWSRWIL 25
AmelOr20 -----MEKSKDKANQKFYLTDEYQKVNLSIQYNRWLL 34
AmelOr25 -----MEK-----QQYVIAQDDGK-KANLSIQWNRWLL 27
AmelOr29 -----MKN-----QQVVITQDDYKRKTNLSIQWNRWLL 28
AmelOr30 -----MEK-----NRSIGHDDYERNVNSIRWNRFL 28
AmelOr21 -----MSSVKIDQDYKSNVNSIKYSRRIS 25
AmelOr23 -----MSSVKINQDIKNNINFSIKYSRLIL 25
AmelOr35 -----MLVLKDSSSVSYSKDWIYSVQINRWLL 27
AmelOr27 -----MMN-QTAITEEIKTNSDYSLQLNRWFL 26
AmelOr28 -----MSNRSVAIKTDPDTNSDYCLQLNRWFL 27
AmelOr33 -----MMTSKSVPIEQDNHSLSNYSVQLNRWFL 28
AmelOr34 -----MMIDKFVPIEQDNHSLSNHSVQLNRWLL 28
AmelOr32 -----MIDKFASIQQTNNLSNYSIQWNRWFL 27
AmelOr31 -----MTSKSVISEESFDSLCDYSLQLNRWLL 27
AmelOr36 -----MTDDISAIQKKFGSLNEYSIQVNRWLS 27
AmelOr37 -----MMADDIATVQKEFENLNEYSIQFNKWF 28
AmelOr38 -----MMADDIATVQKEFNLNNEYSIQFNKWF 28
AmelOr39 -----MMADDIATVQKEFDNLNEYSIQFNKWF 28
AmelOr47 -----MADDIVAIQKKFGSLNEYSIQWNRWLS 27
AmelOr48 -----MADDIVAVQKKFGSLNEYSIQWNRWLS 27
AmelOr40 -----MADDITAIQKKFGSLNEYSIQWNRWLS 27
AmelOr43 -----MMADDIAAIQKKFGSLNEYSIQWNRWLS 28
AmelOr45 -----MADDIAAIQKKFGSLNEYSIQWNRWLS 27
AmelOr41 -----MADDIVAIQKKFGSLNEYSIQVNRWLS 27
AmelOr42 -----MADDIVAIQKKFGSLNEYSIQVNRWLS 27
AmelOr44 -----MADDIVAIQKKFGSLNEYSIQVNRWLS 27
AmelOr46 -----MSDDLVEVEKKFGSLNEYSIQFNRWIL 27
AmelOr49 -----MADDLAKIEKKFGDLSEYSIQFNRWIL 27
AmelOr50 -----MTNDINVAKQRSDNLSEYSIKLSRWYL 27
AmelOr26 -----MMNQLNEQSVLMPVSYARDYEYSIQVNRWLL 31
AmelOr53 -----MHDRSHDNINGQLKNSHYKSDIHYTLQMCQWLL 33
AmelOr54 -----MHDRSYHDIESQLKNSYKSDIHYTLQMCQWLL 33
AmelOr52 -----MFDRSYN--NSQLKNIHYENDIHYTLQMCQWLL 31
AmelOr51 -----MRSTNNIDNLPLNDRYESDIQYTFQFCHWIL 31
AmelOr55 -----MHFSVRNLIN-KPRNPNEYKDITYVMKHNKWWL 32
AmelOr57 -----MHVSVRDPIN-ELRNPNEYKDIAYVTKHNKWWL 32
AmelOr56 -----MYLSIQNPIN-EPRNPNEYKDIAYVTKYNKWWL 32
AmelOr58 -----MHLFVRDQTN-QPRNLNEYKDIVYVTKHNKWIL 32
AmelOr59 -----MHPITLNE SDCKARNLKYKEDIAYVTKHNKWIL 33
AmelOr60 -----MHLTILNESDYRARNLKYKEDIAYVTKHNSKWIL 33
AmelOr61 -----MHLTTLNKNCKVRNLKYKEDIAYITKHNKWIL 33
AmelOr63 -----MLKKMKTT'SNKDFAYAMT'PLKFLA 24
AmelOr64 -----MKT'TSNKDFAYAMT'PLKFLS 20
AmelOr66 -----MKT'TLNKEFAYAMT'PLKFLS 20
AmelOr65 -----MKT'TSNKDFTYAMT'LLKFLS 20
AmelOr67 -----MKT'TSNKDFTYAMI'PLKFLS 20
AmelOr114 -----M 1
AmelOr115 -----MDFAMGWNRFNL 12
AmelOr118 -----MINRPLEYSL 10
AmelOr164 -----MAIKSINRPEVIEISL 15

AmelOr163 -----MFKTIIITYPVEVCL 14
AmelOr165 -----MLVLNNTLSPSVKFGFL 15
AmelOr166 -----MTSINTISRVSVKYGL 15
AmelOr167 -----MIPIRSISHPIVIGL 15
DmelOr35a -----MVRYVPRFADGQKVKLAWPLAVFR- 24
DmelOr74a -----MSFHRYRPRLPGGELAPMPWPVSLYRV 27
AgamOr3 -----MPSERLRLITSFGTPQDKRTMVLPKLKDDETAVMPFLLQIQ 40
AgamOr5 -----MVLPKLSEPYAVMPLLLRLQ 20
AgamOr13 -----MNFLRQEQPAGMPHISIKLL 20
AgamOr15 -----MNFLRQEQPAGMPHISIKLL 20
AgamOr17 -----MNFLRQEHYPAGMPHISIKLL 20
AgamOr16 -----MRFFLIEKPPGVPHIALKLL 20
AgamOr55 -----MIRFFTIHKPPGVPHLALKLL 21
AgamOr18 -----MTSFKPTDDTDVMPVLVRL 20
AgamOr14 -----MLFQELPNDRAVLPLLLYIQ 20
AgamOr51 -----MLFQALPNDRAVLPLLLYIQ 20
AgamOr12 -----MEKLRPEDPKAVMPYAKRLL 20
AgamOr19 -----MLRLSPEDPKAVMPVVKRLL 20
AgamOr20 -----MLRLSPEDPKAVMPVVKRLL 20
AgamOr21 -----MLRLSPEDPKAVMPFAKRLL 20
AgamOr50 -----MLSLRPEDPKAVMPFAKRLL 20
AgamOr29 -----MKLFQIDDPREVVPICRLL 20
AgamOr53 -----MKLLELDNPRAIAIGCRLL 20
AgamOr30 -----MKFFQIDDTREILPICRLL 20
AgamOr46 -----MVVFEPLDDPLKVLPLPLKLL 21
AgamOr47 -----MVVFDPLDDPLKVLPLPLKLL 21
AgamOr48 -----MVN-----LFARTPADNFRVMPYNLRLF 23
AgamOr49 -----MFRRLTHPTSPKQQHHRDRACDFTVMPHGLWLL 33
AgamOr61 -----MWHHQVQL-WFRLLGRFTTFTDSSDYFGLYKTLA 34
AgamOr62 -----MVRSQPFRLSLVRKYWDKYFTFTDVTVDYFNLLNTFG 36
AgamOr63 -----MYLTQLFASMRTQFLHRIHTYTKHSDFIMQRYFE 35
AgamOr60 -----MIDLVTRIRKLLALERKLANDLDQFVLLHHLT 33
AgamOr75 -----MTVVHRIVSFGYNLLQRHFNVGHPTEQFFLLRCLD 35
AgamOr76 -----MTVVHRIVSFGYNLLQRHFNVGHPTEQFFLLRCLD 35
AgamOr78 -----MTVVHRIVSFGYNLLQRHFNVGHPTEQFFLLRCLD 35
AgamOr77 -----MGTANQPTSICFLRWIGWMD 20
AgamOr79 -----MGTANQPSSICFLRWIGWMD 20
AmelOr99 -----MDIFQKIEKQHNEIYDIPY-YKMMEKYI 27
AmelOr101 -----MDIFQKTKKQHNEIYDIPY-YKMMEKYI 27
AmelOr102 -----MNIFQKTRRQCPDIFDIPY-YKMVEKYF 27
AmelOr103 -----MDIFQKTERQYPEIFDIPY-YKMVEKYF 27
AmelOr104 -----MDVFQKTRNKCINIFDIPY-YKLLLEKYM 27
AmelOr98 -----MDMFQKTGKEYSNIFDIPY-YKVLKKYL 27
AmelOr100 -----
AmelOr97 -----
AmelOr105 -----MSMLQKSNEQEYNAFDIAY-YKTLKLYL 27
AmelOr109 -----MDERAIEDQY-LKINKFFG 18
AmelOr110 -----MDKQTIENQY-LKINKFFG 18
AmelOr111 -----MDKRVIDQY-LKINKFFG 18
AmelOr108 -----MNKQAIEDQY-LRINKFFG 18
AmelOr107 -----MDQQAMEELY-LKDNKFFG 18
AmelOr112 -----MDARTVEKNF-LKVNKIFG 18
AmelOr113 -----MDSDILEKRF-LKITKRFA 18
AmelOr106 -----MDVR-LEERY-LKINKIYS 17
AmelOr122 -----MNMDVFDKQ--YRIYRIIL 17
AmelOr125 -----MNMDVFDKQ--YRIYRIIL 17
AmelOr123 -----MNVFDNQ--YRTYRIIL 15
AmelOr126 -----MNVFDNQ--YRTYRIIL 15
AmelOr127 -----MNVFDNQ--YRTYRIIL 15
AmelOr128 -----MNVFDNQ--YRTYRTVL 15
AmelOr129 -----MNVFDNQ--YRTYRIIL 15
AmelOr133 -----
AmelOr134 -----MDIFDKH--YYSYRTVL 15
AmelOr131 -----MDVFDKY--YHTYRIVL 15
AmelOr132 -----MDVFDKY--YHSYRTVL 15
AmelOr135 -----MDVFDKQ--YHSYRTVM 15
AmelOr136 -----MNVFDKH--YHTYRTLM 15
AmelOr138 -----
AmelOr130 -----MNVFDNQ--YRIYRIIL 15
AmelOr137 -----MDIFDKR--YCTYRTML 15

AmelOr139	-----MDIFDKHQSYHSYRTIM	17
BmorOr20	-----MIFVDDAVIG-----IKDPREYRHLRVLRTSL	27
BmorOr3	-----MIFVDDAVIG-----IKDPREYRHLRVLRTSL	27
BmorOr18	-----MIFVDDAVIG-----IKDPREYRHLRVLRTSL	27
HvirOr6	-----MNLRKFLFENEAVEG-----INSPADYLYTRILRFNL	32
BmorOr23	-----MLLYYPNTQVK-----EKVNNVEEFTYIKFLKSFC	30
BmorOr16	-----MLLYYPNTQVK-----EKVNNVEEFTYIKFLKSFC	30
BmorOr4	-----MLLYYPNTQVK-----EKVNNVEEFTYMKFLKSFC	30
BmorOr5	-----MLLYHPNTQVE-----EKVNNVEEFTYMKFLKSFC	30
BmorOr22	-----MFKI IKNI I VENDALKQVEKPEFQYMKWVQYHL	34
BmorOr17	-----MFKI IKNI I VENDALKQVEKPEFQYMKWVQYHL	34
BmorOr1	-----MLLSFKDDRSR-----PDIQKPQNFQYMKILRFNL	30
BmorOr1a	-----MLLSFKDDRSR-----PDIQKPQNFQYMKILRFNL	30
BmorOr1b	-----MLLSFKDDRSR-----PDIQKPQNFQYMKILRFNL	30
BmorOr19	-----MKEEYYLQHPRT-----QLFYKVLAVHSTIESTI	29
BmorOr15	-----MKEEYYLQHPRT-----QLFYKVLAVHSTIESTI	29
TcasOr5	-----MVWSPKDVYDLTLPILPAWKY	21
TcasOr7	-----MYRLVASFVNVMGAESAQQV	20
HvirOr4	-----MCVYSYILVTVL	12
BmorOr13	MTMSIKPRLQCMVPPSLALALRVSRLAGIAPLKFVAKQSNIMIRLSTSLCVSYLLVTAL	60
DmelOr10a	-----MSEWLRFLKRDQQLDVYFFAVPRLSL	26
DmelOr33c	-----MVIDSLSFYRPFV	14
DmelOr7a	-----MAVSTRVATKQEVPESTRRAFRLNFCNFY	28
DmelOr22c	-----MTDSGQPAIADHFYRIPRISG	21
AgamOr1	-----MKLNLNPRWDAYDRRDSFWLQLLCL	26
AgamOr4	-----MKFELFQKYSSPDTVLSFVLRLL	23
DmelOr47b	-----MNDSGYQSNLSLLRVFLDEFRSVLRQESGLIPRLA	36
AmelOr73	-----MHKLSLSFALL	11
AgamOr68	-----MYTAIEFYNASFNRLKLS	19
DmelOr59a	-----MAEVRVDSLEFFKLSHW	16
DmelOr23a	-----MKLSETLKIDYFRVQLNAW	19
AgamOr31	-----MLAAETVDFFRVQSICL	17
DmelOr2a	-----MEKQEDFKLNTHSAVYYHW	19
AmelOr62	-----MGKRKESIDERIRNFMVQKMVL	22
AmelOr121	-----MHTSESKKYSKDYEWAVRLNRFSL	24
AmelOr140	-----LRGLYSVWGVNYDAVIECMP	20
TcasOr12	-----MAHNLDVDLTFVRFNI	17
AgamOr8	-----MDPPTDELVRFESFIRVPEIFF	22
BmorOr9	-----MDIPKFEELLKQIKMNF	17
AgamOr40	-----MLRPTSEDDQTLINFRLLERVL	23
TcasOr63	-----MGFMIQDYDLRNASLRLKLM	21
TcasOr4	-----MDEEFLIGTFETEKKFL	17
TcasOr13	-----MSAMSTVIVSGEMFDLFSFVLYLS	24
AgamOr24	-----MDLTAGIESFN	11
AgamOr54	-----MYYLEQLRALVRRYLERRSPDPRIQHTFIVQSIN	34
AgamOr23	-----MRWRKDETLHTPQCTV	17
AgamOr64	-----MFHPSRWMAKCRVWYAAATFKFSADADYFFLVQPLC	35
DmelOr82a	-----MGRLFQLQEYCL	12
AmelOr116	-----MTNHLEKQIKLKKINSNKHQLQNNLSII	27
AmelOr160	-----MRRPISSYVELFYDKNVISWSKRL	25
TcasOr10	-----MATFLLYKTEMLDLIK	16
TcasOr26	-----MMESTVTRL	9
AmelOr117	-----MKKPFNKSIDYYILPNKIFC	20
AmelOr120	-----MSNQNTMNIIRNYIFINQLVL	21
BmorOr7	-----MSLSGSSVFRHLFLL	15
AgamOr6	-----MVRLSFEETLRNTNML	17
DmelOr45a	-----MDASYFAVQRRAL	13
DmelOr67d	-----MLKMAKVEPVERYCKVIRMIR	21
DmelOr83c	-----MSTSESPSSRFRELSKYIN	19
AmelOr162	-----MKRLMDIMQEDWKFHARLR	19
HvirOr3	-----	
TcasOr20	-----MMDETYLQFFVKSF	14
AgamOr11	-----MELKEEWILPDVVYANPLKRTLLGL	26
DmelOr56a	-----MFKVKDLLSPTTFEDPIFGTHLRYF	26
AgamOr28	-----MARLVLHEVRYVLMAMLYISRGMATKIQNSPI	32
AgamOr58	-----MSALVHLAKDHIQRIADGGQFVIVNGMD	28
AgamOr59	-----MFSASAEMEWFRQQRHAI CHLREGSD	26
DmelOr1a	-----MSKLEIVFLGNLWTQRFTF	19
DmelOr13a	-----MFYSYPYKALSFPICQVWL	19
AmelOr161	-----MGEFRNEEYDQLIKPIMITG	20

AmelOr141 -----MIDEKTKREFDKTIDLNLFL 21
 AgamOr52 -----SLTPTDAGVQLQTERL 16
 AgamOr36 -----MQTGGVLSRMRRALGRFYVERDFFRPYEILL 31
 AgamOr25 -----MEQEINQIISFLRRPL 16
 AgamOr45 -----MPRATSNSAANLRLVI 17
 TcasOr3 -----MSKSEKIHTLATYFDSNIAFL 21
 DmelOr88a -----MKPTEIKKPYRMEEFRLPQMFQEVA 25
 AgamOr22 -----MFSLGKSHQYLELSYNRI 18
 DmelOr49a -----MEKLRSYEDFIFMANMMF 18
 DmelOr85f -----MEPVQYSYEDFARLPPTTVF 19
 AmelOr119 -----MHTQRDTSEITYSHDTATSRKLFYLL 26
 DmelOr63a -----MYSPEEAAELKRRNYRSIREMIRLS 25
 DmelOr67b -----MQDQLDHLELERIDKLPKLGLLW 22
 BmorOr21 -----MSNYVFKPFHETRYRIITFTM 20
 BmorOr11 -----MSVSNLKFEALFKPTTMSL 19
 BmorOr12 -----MHEFVINVQNETTKLYDQLNII LYIL 26
 AgamOr33 -----MCILAGLLTLAKKWHCVL 19
 HvirOr1 -----MGPTSLKRNMFVWIPVKKN 19
 HvirOr5 -----MSGHRSVTARLAGTIF 16
 TcasOr1 -----MNNSRPANCTHRPKLS 16
 TcasOr2 -----MFKTVTREKVFQKFTSSIRMLLIQ 25

TcasOr16 HFMLNYHADNSGALHTLRL--GYCCMHLVFLVQYGCNFVNLVL-----ERGDVNDLAA 76
 AmelOr2 HFMFNYITDSS-TKHIHKI---YCIVHLVLILMQFGFCGINLMM-----ESEDVDDLTA 74
 AgamOr7 HFLFRYVTGPI---LIRK--VYSWWTLAMVLIQFFAILGNLAT-----NADDVNELTA 74
 AaegOr7 HFLFRYVNGPV---LIRK--LYSWWNLIMILLQYFAIMGNLVM-----NTGDVNELTA 59
 DmelOr83b LFMHNFVTGSSA---FMKK--VYSSVHLVFLMQFTFILVNMA-----NAEEVNELSG 76
 BmorOr2 HFLFNYHADTSGMNMLLRK--IYSSAHAVLIVVHYICMGINMAQ-----YKDEVNELTA 77
 BmorOr2a HFLFNYHADTSGMNMLLRK--IYSSAHAVLIVVHYICMGINMAQ-----YKDEVNELTA 77
 HvirOr2 HFLFNYHSEENAGMSNLLRK--IYASTHAILFIHYACMGINMAK-----YSDEVNELTA 77
 AgamOr56 --FWNDSPGQR-----IPS--LGLLVTAIYPLIWLIPSWLFLVS-----SQDNITRFMK 69
 AgamOr57 --FWNDSPGQR-----IPS--FGLLVTAIYPLIWLIPSWLFLVS-----SQDNITRFMK 69
 AgamOr26 --LWNESSQR-----MST--FGVLLIAVFPIMWLIIPSWLFIVS-----SQDNIKRLMK 69
 AgamOr27 --FWSKTTGQR-----ISV--IGLLAVILYLLAWLIPNWLFIVS-----SQDNITRLIK 69
 HvirOr9 HLESKDTTKTFIERSRSRHR--LYFAHFFSLNLEVVQAQILWVLEA---VITRKSFVEITR 75
 HvirOr7 -MNIKNKIVTPLDTIKYRW--LYTLNFLVVFSAIIGSVYYVILG---IKQGNFIEVTS 53
 DmelOr85b IRPYTNGEESKMKNLIFHI--VFWSNVINLSFVGLFESIYVYSA---FMDN-KFLEAVT 69
 DmelOr85c IEPYTIIDSRKASLWVSHL--LFWANVINLSVIVFGEILYLVA---YSDG-KFIDAVT 68
 DmelOr85d MMAYDHKYSQKWEVLLHW--TFIAQMVNLTNVLISELIYVFLA---IGKGSNFLEATM 90
 DmelOr67a IDPYETG--RKRTIWFQI--YFALNMFNMVFSFYAEVATLVDR---LRDNENFLESCI 81
 DmelOr67c EDIYAHIRSTNPKSLLFKI--YLYAGFINFNLLVIGELVFFYNS---IQDFETIRLAI 81
 DmelOr92a EDLYSDRDPNVIIRYLLRF--YLVGLFNLFNAYVVGIEIAYFIVH---IMSTTTLEATA 86
 DmelOr69a YQWKGRPTERQFYASEQRI--VFLGTCIQIFQITGVLIYWYCNGLRATETGTFVAQLSE 79
 DmelOr69b YTWNGRRSLEVKNLAKRI--IFWLGAVNLVYHNI GCVMYGYFGDGRTKDPIAYLAELAS 79
 TcasOr6 -----MSPHD--SGTFARIRKIFSILVYTSTVVL SMAELFFNYKDLETVIR 44
 TcasOr11 VKFTEPLEFLNVVGLNPEN--CSNFSLFRRVISLGFVFLVITLGLLELLHFEGLTCSR 61
 AgamOr41 RLIKRQRLLLKLGIDSYD--PAFRIHSLTFMLVCLALTFVVISLYDLYFRDDLFNFVY 68
 AgamOr42 AMVAWQNRVLAALFGCYMYL--GKERVSYRIVPICFMACSFVLLSLSYSAVQARGNMGOAVL 73
 AgamOr43 YNLHLIRWFASFVGLDIMA--PNYKPNILTFLAFFGLSISLIGEVYTVWYFVWVPLDKLME 69
 AgamOr44 YNLHLIRWFASFVGLDIMA--PNYKPNILTFLAFFGLSISLIGEVYTVWYFVWVPLDKLME 69
 AgamOr66 QFERYIRTLNCNIGFDVMT--ETWKKSRYTYMSIFLCSQYLILMVYSLIIAS--DTFELFK 65
 AgamOr67 QFERYLRTLCKIIGFDVMT--ETWKKSRYTYMSIFLCSQYLILMVYSLIIAS--DTFELFK 65
 AgamOr72 KLMKSLIVYSKVAGVEIWT--APGKFPASYVVSFHITVYFVSTVWTLRKYIDDP IHMMK 66
 AgamOr73 KLMKSLIVYSKVAGVEMWT--APGKLPASYVVSFHITVYFVSTVWTLRKYIDDP IHMMK 66
 AgamOr71 KLMKSLIVYSKVAGVELWT--APGKFTPASVVSFHITVYFASTVWTLRKYIDDP IIRMMK 66
 AgamOr74 KLMKSLIVYSKVAGVEIWT--APGKFTPASVVSFHITVYFASTVWTLRKYIDDP IHTMK 66
 AgamOr70 KLLKYLIVYSKVPVEMWT--APGKFKPASVVSFHIIVYFVSTVWTLKKSDDP IHMMK 66
 AgamOr69 QLLQPLIFYSKGVGVEIWT--APGKFPASYVLSLHVAIYFSSTVFTLIKYSDDTLHMMK 66
 TcasOr9 -----
 TcasOr18 YLTGATFTLCAVLYPIDS--NPKIKKILYAVWAI-----FFILTFVTGFIQCFVFCVI 58
 DmelOr83a YVYNGS-GVLAVLVRFCDL--TYELFNYSVSVHIAG-----LYICTIYINYGGDLDFV 88
 DmelOr85e RLPKWWPKRLEMIGKVLPK--AYCSMVIFTSLHLGV-----LFTKTTLDVLTGELQAIT 98
 TcasOr24 FFLKWSFMWPTKSEEFRTS--KGLYFRLAFVVIISGLTFTAMIVMHLKKSVEAGDYDISE 72
 TcasOr25 YYLKLSLMWPLKREEFKSS--KGLYLRLLVFVVIISGSTFTAMIFMHLKSLKVGSDYDISE 72
 TcasOr19 DFGRFRHHPHRSAGFDAP-----LEAMEEG-MDISE 37
 TcasOr22 EIMKYLQLWPQNEHTNLRR--RFCFVILLCSPLTLG-----LAAHLIVCIKDNLDVELSA 66
 TcasOr23 EVMKYLQLWPQNEHTNLRR--RYFIVIFLCSPLHLG-----LATHLVVCLKDNLDVDLSA 66
 AmelOr168 NVVSGNFLPMTNINEKSSV--ISKIYFVIVWIIQLM-----YLASCTLGLFNVSWERALK 66
 AmelOr170 NMVSGNFLPMTNINEKLSL--ILKIYFVVAWIIELI-----YVAASFGLGFNVSGEKALK 66

AmelOr169 NAVSGNILPITDMKKRLSI--VLKIYSILVWTIELS-----YLAACILGLFNVSRRERALK 68
 DmelOr65b KAMALFTTTE-----ER--LLPYRSKWHTLVYIQMVIFFASMSFGLTESMGDHWQMG 66
 DmelOr65c KAMFLYTTTSK-----ER--QMPYRSKWHTLVYIQATVCFGLTMCYGVTEISLGDVQMG 66
 DmelOr65a KALGFYMNSE-----QR--RLPRIVAWQYFVSIQLATALASLFGYISESGDKIVNLGR 97
 TcasOr17 KILGLWPKG-----DETYK--LNFYTLAYVFGVIGLLCAHSFVQIFNIYFIVDDLEAFTS 70
 TcasOr21 KIVGLWPD-----SEDYK--FDFYALHASVWLSTLLVASTFFQGINIIFILDDVKALTG 69
 TcasOr56 QILGIDILP-----VESVP--QNLFYTYTALIIIS-TMCLFTIAEFLDMVLNYEDIYRLTF 74
 TcasOr15 QILGIDILP-----NERIP--QTLFYTYSVLLIA-TMVVFTTAECLDLVLNYEDIYKLT 72
 AgamOr9 RMFYAWPDEH-----LEKS--ALWYRAKGVLFVFFIYLSAATQLAYNFTVTSREELFA 89
 AgamOr65 RMFYAWPDEQS----LAPN--ALWYRAKGVLFVFFIYLSAQAQLAYNFTVTSREELFA 92
 BmorOr6 GVWPVEKTSLF----SVIY--RSIMLSSQFCFLVFNGIYIGLWVG-----DLKAVSD 67
 BmorOr10 AMWRSFEKPIP----LKVY--MAFIMTTQYLF LIFEIIYIVNVWG-----DMAEVSE 66
 AgamOr34 KVCGFFNAP-----VPK--SVAYRVYCYAFYSCIMAVYLFVLLLNVPVQPFEQRVFF 69
 AgamOr37 KICGLYNG-----KPQ--TTRYRVYRAVFNIFLMVVYLFVLSLNVFVMQTFEQVLVLY 81
 DmelOr94a QLFGLWPWSLKSEEWTF--GFVKRNYRFLHLPLITFTFIFGLMWLEAFISSNLEQAG-Q 75
 DmelOr94b RWIGLLKWENEGED--GVL--TWLKRIYPPVHLPLTFTYIALMWYEAITSSDFEAG-Q 72
 DmelOr71a KWRRLWPR----KESVSTP--DWTN-WQAYALHVPFTFLFVLLLWLEAIKSRDIQHTA-D 68
 DmelOr46a SLWQPQIERR-----WRI--IHQVNYVHVIVFVWLLFDLLLV--HVMANLSYMSEVVK 68
 DmelOr46b GVWQLPTWA-----ADH--QRRFQSMRFGF ILVILFIMLLLSFEMLNNSQVREILK 68
 HvirOr8 KFLAIWPGK-----DF--TRRYKYTVAFLTAYFIIIFMILFTINLFFLPKQLDIFIE 66
 BmorOr8 KMFGIWADR-----KS--SKTYKYYSFVFLFITLIMYNSLLAINLLYTPKIEILLIR 68
 AmelOr68 TICGCRMPSS----CRTSY--KRMLYILYATFVLLLLYSFCISQFLNVIINVRTADELCN 65
 AmelOr69 TSCACWRPP----FLSPY--KNFAYTYVYCYVILLIYGATFCQFVLLLIIVETEDEFCD 64
 AmelOr70 SVCGCMPPTS----WKSSF--KKSLYNIYTCVIWLLILSLVSTQILDIIINVKNKNEFIE 65
 AmelOr71 ALCGCFPPSS----WTRL--KRYLYKIYAVFSFVALNSFLLSQILDMVYNVKGTDDFSD 65
 AmelOr72 VATGYFLSPK----IKSPR--KRFLYNVYTVVVTFLFLLSFLTLIMQIVFNVRTADELSE 65
 DmelOr19a RIFRIMGIHPPGKRTFWGR--HYTAYSMVWNVTFHICIWVSFSVN---LLQSNLETFC 71
 DmelOr19b RIFRIMGIHPPGKRTFWGR--HYTAYSMVWNVTFHICIWVSFSVN---LLQSNLETFC 71
 DmelOr33a LYWRLLGVEG---DYPFR--RLVDFITITSFIT--ILFPVHLILG---MYKKPQI-QVFR 65
 DmelOr33b LYWHLLGLES---NFFLN--RLDLVTITFVT--IWYPIHLILG---LFMERSLQDVCK 67
 DmelOr22a RVMWSFGW-TEPENKRWIL--PYKLWLA FVNIVMLLILPISISIEYLHRFKTFSAGEFLS 85
 DmelOr22b RVMWSFGW-TVPENKRWDL--HYKLWSTFVTLIFILLPISVSVEYIQRFKTFSAGEFLS 85
 DmelOr42b RAMKFIGW-LPPKQGVLR--VYLTWTLMTFVWCTTYLPLGLFGLSYMTQIKSFSPEFLT 82
 DmelOr59b RAMWLIW-LPPKEGVLRY--VYLFWTCVPAFAGVYFVLPVGFIIISYVQEFKNTFPGEFLT 83
 DmelOr59c RIAFFLW-LTPPKGALLRW--IYSLWTLTMMWLGIVYLPGLSLTYVKHDFRFTPEFLT 85
 DmelOr98a YGMFCMGW-HTP--ATHKI--IYYITSCLIFAWCAVYLPIGIISFKTDINTFTPNELLT 80
 DmelOr42a RCVFLMGV-RKPP-AKFFV--AYVLWSFALNFCSTFYQPIGFLTGYISHLSEFSPEFLT 85
 DmelOr85a RSIDQMGWRLLPRTKPYW--LYYIWTLVIVLVFIFIPYGLIMTGIKEFKNTTTDLFT 83
 DmelOr43b ETLRNSGL---NLKNDFGI--GRKIWRVFSFTYNMVILPVSFPINVIHLAEFPPELLLQ 82
 AgamOr2 RVWLFWSYLRRP-----RLSRFLVGCIPVAVLNVPFQLKLYSSWGDMSIELII 60
 AgamOr10 RVWRFWSFVLVH-----NWRRYIS--IIPVTALNVFMFADLYRAWGNIEEVI 59
 DmelOr30a KLMKFWSYLFVH-----NWRRYVA-MTPYIIINCTQYVDIYLSTESLDFIIR 64
 DmelOr49b KILRFWALLYDK-----NLRRYVC--IGLASFHIFTQIVYMMSTNEGLTG IIR 58
 DmelOr43a RMWRHLAVLYPTPG-----SSWRKFAFVLPVTAMNMQFVYLLRMWGDLPF IIL 62
 AgamOr32 RLIRFCGVVEQPSLKNN-----VRCLFAFILLCSFGPL--HVWYLAKTPVLDLVVTC 63
 AgamOr35 WYLRVYCVFREKSALGG-----IRLSVCLGVLVVFVVL--QSIYIFQH-VHHFAMICD 62
 DmelOr47a ALLGFDLFSENREMWR-----PYRAMN-VFSIAAIFP--FILA AVLHNWKNVLLAD 62
 DmelOr98b RLLGLELLHEQDVGHRY-----PWRISICILSVASFMP--LTIAFGLQNVQVQQLTD 65
 DmelOr9a RCMGIDLWSP-TMANDR-----PWLTFVMTGPFVFLFMV--PMFLAAHEYITQVSLSD 74
 AgamOr38 LIFGCVPPDRLTRRWYV-----KVLIAVNLITLAIICIVGEFRYCLYAIRNGSLIETIE 82
 AgamOr39 LIFGVVPADRLVRPWYV-----KVLIAINLATLAIICMVGFLHGLYAYQEGDLSIESIE 83
 DmelOr24a SLIGFYPEQ--KRTVLV-----KLWSFFNFFILTYGCYAEAYYGIHYIPIN-IATALD 63
 DmelOr45b GLLGLRFGK--EQSWLH-----LLWLVFNFVNLAHCCQAEFVFGWSHLRTS-PVDAMD 74
 AmelOr74 KSAGIWWIGNDAEERQ-----RKFAVFTLAALIYGIYVNAVDIYHNLNLAHCVF 69
 AmelOr86 KLTGVWMTVNDGEKRR-----RRIAMAYTFVIQVYGLYLNIGDIYHSWDDLSHCIF 69
 AmelOr75 KIVGLWLATDRNEQRQ-----RDFALIYTVGTLFISICIAFRDIYYSWGNFSNSVF 69
 AmelOr84 KIVGLWLAADRDEQR-----RDFALIYTVGALFIVCIGFRDIYFTWGNFSDSVY 67
 AmelOr87 KIVGLWLAKNEQEQRK-----RRLTLMYTVIAILFGVWVQFRDFYYSWPNFGNCA 84
 AmelOr76 KIAGFWTSTNYVEERR-----RNVTMSYTLFAILFAATTEARDLYFSWGNFSDSIY 69
 AmelOr85 KIVGFWIASNYVEERR-----RNLTISYTFFAIFFAMATEARDLYFSWGNFGDSIL 70
 AmelOr88 KVAGFWVANNAEKRR-----RNVAMFVTIFFAFMGISIEGRDLYFAWGDFFEDSIF 69
 AmelOr91 KLVGLWMAADQYEORL-----RNISVTYNLVAIFLALYLTQTTDIYYSWGNFSACL 68
 AmelOr92 KFVGIWMX--QYQRM-----RNIMVAYNVIAIFFALWIQTMDMYHSWGNIRACL 66
 AmelOr95 KLMGIWMANDQSEKYV-----RNVITILYSIIALLFGLWLQITDMYYSWGDFFSECF 66
 AmelOr93 KLVGIWMAGNGZEX-----ITLFTAIFSGYNLZ-----MYFILGDFSACLF 55
 AmelOr77 KLVGLWTAKNRREQRA-----RKFALIYTVAAAMLFWLIEFTDFYYSFGDFSTCLF 70
 AmelOr94 RVVGFWLASSRLEEF-----GNATVMYSIITIFSMWVQMRGLYFSWGDFFVCTF 69
 AmelOr96 RVVGFWLTTSRLEEF-----RIGVVGYTILAITFSAWVQIRGLYFNWGDFFSACTY 69
 AmelOr79 KNVGVWMSHDPGEQR-----MRMLLVCTVWMLLLGIVINTRDLYFTMLYNGDILY 69
 AmelOr83 KNVGVWMPDNDSEQR-----MKMLFLYTIWMLFCGTIISTRDLYFTMLYNGDILY 69

AmelOr80 KNVGIWMSDNPNEQRR-----IKMLFLYTIWNLLFGTVVNSRDLYFTLLYDGDILY 69
 AmelOr81 KNVGVWISDNPSEQRW-----RNMLLGYTTWILLSGIINGRDLYFTLLYNGDILY 69
 AmelOr82 KNVGVWMSDNPNEQRQ-----IKMLLINTWILLSGIVINGRDLYFTLLYHGDILY 69
 AmelOr78 RNIGLWMSDDPGEQRR-----MRILLVYTVWILLLGMINGRDLYFTLLYNGDILY 69
 AmelOr89 KNVGLWASNDPGHERR-----RKVILVYTMWCVTLSVVIIRDVYFTWFYNGDILY 69
 AmelOr90 RSIGLWIGDGTNERR-----RKGMLAYTIWCTFFSTIISRDLFTWYNGDILY 67
 AmelOr142 ALTCSWPPSPLATKAQ-----HLFFNALWCIAFLTSMVLFPLLLAAIYVYRKHPIVI 69
 AmelOr146 SLSCCWPLPSTATKLQ-----TRCFKIIRSLFLNLSLLFFPLLYFVYVNRNDNTT 69
 AmelOr148 ALSLCWPLPASSTRKQ-----IVCIKILQIGAIISAFMVLLPLIYAIHLNIHNLIN 69
 AmelOr158 ALSFCWPLHINSTRKQ-----IMYIKILQISAVVNAFMVLLPLIYTIHLNMHNLIN 69
 AmelOr147 ALSLCWPLPINSTRKQ-----IVCMKILQIGAIISAFMILLPLIYTIYLNLDNLNI 69
 AmelOr150 AITFCWPLPANSTKIQ-----VFMFKTLQIISIINAFILLPLLYSVYLHFDDIVI 69
 AmelOr151 ALTLCWPLPANNGKIQ-----VFMFKALQIISIINAFILLPLLYSVYLHFDDVII 69
 AmelOr152 AITFCWPLISLNSSKTQ-----VFIFKILQIISIINVMFLLPLLYSVYLHFNDIII 69
 AmelOr154 AICCCWPRPFNSTKNQ-----IFAFKVLQISTIISAFMVFLPLLYSIYHLNDNIIH 69
 AmelOr155 AICFCWPPYPLNSSRNQ-----IFGFKVLQISTMVSACIMLLPLLYSIYHLNDDVII 69
 AmelOr157 AMTFCWPLPPDTARKR-----IVGMKVLIIISIVNGCAVILPMLYIHLHLDDIIS 68
 AmelOr156 ALFCFCWVPSANTSRNQ-----IIVFRFFQIFTIISCLGSLPMFHSIYHLDDIIV 69
 AmelOr153 AL--CWPLSVNSGKTQ-----VFIFKMLQIISIVSACMLLLSSYSIYFX-HGQCR 66
 AmelOr144 TFFTCTWPINPKDSKKY-----IIIRNILWFTTILNVIPLTISLMLAIFHFRSNIPK 70
 AmelOr145 TFTCAWPINPNSDKTY-----IIIRNILWIFTILNVIPLAISMIFAIFHFRSDIPK 70
 AmelOr143 TFFTCTWPINPNISKRR-----IIFRNIFWIFSILNVILLMTSLMLAVVYFRNDILM 65
 AmelOr1 TLIGIWRPRNTFID-----NVKFYVQIGIVFFLMCFLLPHVIYTYFDCE-NLTKYMK 79
 AmelOr3 TMVGIWRPRNTFSN-----NVKFYVQTTIVFFLMCFLLPHVIYTYFDCE-NLTKYMK 84
 AmelOr6 KIIGAWPILIESSL-SS----KIQKWFIIISFISLQMCIVVPCILVMFLKEK-NGRRKIN 72
 AmelOr7 KIIGAWPIVIESSL-SS----KIRKWFIIISFISLQMCIVVPCILVMFLKEK-NGRRKIN 72
 AmelOr4 KIIGAWPIAIESSL-GS----KIQKWFIIISFYFLQICIVAPCILLDVFLKEK-NGSRRIN 74
 AmelOr5 KIVGVWPIPIGSPL-SS----KIRNWFITFFSLFLQICIVGPCILVMFLKEK-NGKRKIN 74
 AmelOr8 RMLGYWPLNVPSSA-FS----KILNSFTIFFSYLLPLIVLIPGLLYVFLKEK-NGRRKVK 76
 AmelOr9 KMGVCWPLNIPSSA-FS----KIFNAFIIIFISYLLSLIVLVPGLLYFLKEK-NGRRKIK 76
 AmelOr11 RTLGYWPL-VSPSA-FT----KFFNSFTIFTLYFLELIVLIPGLLYV-LQVK-NPRTKIK 74
 AmelOr12 RMLGYWPLSVSSA-FA----KISNYFIIIFLSYLLTLIFMVPGLLYIFLKVK-NGRSRIK 76
 AmelOr10 RMLGHWPLSVSSA-FS----KILNSFIIIFISYLLQMIIVVIPSLLYVILKEK-NPKKKIK 76
 AmelOr14 RILGAWPNRVSSA-LS----KIFNWYLIFTCYTLQILIVLVPGLHVFLEKEK-NGRKKMK 76
 AmelOr15 GKLGAWPNRATSSSFS----RTRNCILIFMCSYVQLIILIPGLLHFFLEKEK-DSRKKVK 77
 AmelOr13 KILGAWP-KSSPSSVLS----TILKCLISICYLIQMLVLPGLIYIFLKEA-NLGGKIK 68
 AmelOr16 ATIGAWPISSTSF-FL----KALQRLGHIFTYFLFFLIMIPTLAYVFLKEK-NSKVRLK 79
 AmelOr17 GMIGAWPISSTSF-LL----KVLQRLRHIFTYFLFFLIMIPTLMYVFLKEK-NNKVRLK 79
 AmelOr18 RTIGTWPRSPDHSWLE----TLEHVCLNLCYELLAFILIPCSIYIILEIK-DFYNQLK 86
 AmelOr19 RTIGTWPKSLDRSWLE----TIEHVCLCFLNYVLLAFILIPGVMYFLEEMK-DFYDQMK 86
 AmelOr22 KPIGLWPNSSSTISTTG----KYLYRLINVICYSLISFLSIPCSLYVILEVE-DIYNRIK 87
 AmelOr24 KPIGLWPNSSSTISTTG----KYLYRLINVICYSLISFLSIPCSLYVILEVE-DIYNRIK 79
 AmelOr20 KPMGLWPNSS---YTSK----DYPYWLINVICYCLISFLFIPCTLYLFLVEIK-DFYKGLK 85
 AmelOr25 TPIGAWPNLRK-SRIG----KCYSLIISICYGLIGFMLVSCSIFLMVEIK-NIYNRIK 80
 AmelOr29 TPIGAWPNLRK-SRIG----KCYSLIISICYGLIGFMLVSCSIFLMVEIN-NIYNKIK 81
 AmelOr30 KSLGTWPNLRE-SRIG----KCYSVLIGIVCYGLISFMLTSSNMFLVVEVK-DTYNRIK 81
 AmelOr21 KMIGLWPIFDKISTIH----KFLRMLYNTICYCLLMFMIVLGMWYIAFEVK-NIYDGLK 79
 AmelOr23 KMIGLWPIFDKSSSTIH----KYLQWLYNVICYSLIMFIIISGWYISLEVE-NIYDRK 79
 AmelOr35 KAIGIWPLSLCVTTTE----KIHVSILTILSIFLIGFLLVPCITLCTLLDKTGDLDTKIK 82
 AmelOr27 KPIGAWPLFSTTKFE----KTVSILNIIICYAIVILCATPSLMQIILAE-SFYLKMK 80
 AmelOr28 KPIGAWPSPSTTKHE----RIISFLLNVSCYSSLLFTLIPCLLHMLLEDE-SFYLKMK 81
 AmelOr33 KSIGTWPLSPSTTKLE----KTISFLLIICCYCFICFTVIPCLLHIIIGDD-SFREKMK 82
 AmelOr34 KSIGAWPSPSTTKLE----KIISFVLIICCYCFICFTVIPCLLHVILEDD-SFHEKMK 82
 AmelOr32 KPIGAWPSPSTTKLE----KIISIVLIICCYSSICFTVIPCLLHVMLEDE-SFRDKMK 81
 AmelOr31 KPIGAWPSSSSSKLE----RIVSFFLIVLCYGFILFTVIPSLFHIVLEDE-NLHMMLK 81
 AmelOr36 KTIGVWPLPSSTSKFE----KITRILILFCWIIAVLDTTSGLLHFLVLEVE-DIISKMK 81
 AmelOr37 KTIGVWPLPSSTSKFE----KIMTRILILFCWIIALFDAISGLLHFLVLEVE-DIISKMK 82
 AmelOr38 KTIGVWPLPSSTSKFE----KIVTRILIIVCSIIITLTVIIPSLMHFILVKE-DIISKMK 82
 AmelOr39 KTIGVWPLPSSTSKLE----KIMTRILILFCWIIITLTVIIPSLMHFILVKE-DIISKMK 82
 AmelOr47 KTIGVWPLPSSSSKLE----KIITKILIFLYWIIIVLFIITSLHFLVLEVE-DIVSKMK 81
 AmelOr48 KMIGVWPLPSSTSKFE----KIMTKILIFFYWIIILLFIILASSLHFLVLEVE-DIVSKMK 81
 AmelOr40 KTIGVWPLPSSTTKFE----KIMTKILIFLCWIIALFVITSSLLHFTLVKE-DIISKMK 81
 AmelOr43 KTIGVWPLPSSTSKLE----KIMTKILIFLCWIIALFVIISSLLYFALVKE-DIISKMK 82
 AmelOr45 KTIGVWPLSSSSSKFE----KIMTKILIFLCCIIALFVIIIPSLHFTLVKE-DIISKMK 81
 AmelOr41 KTIGVWPFSTSTSKFE----KIMTKILIIVCSIIALFVTIPSLMHFILVKE-DIITKMK 81
 AmelOr42 KTIGVWPFSTSTSKFE----KIMTKILIIVCSIIALFVTIPSLMHFILVKE-DIITKMK 81
 AmelOr44 KTIGLWPLTSTSTSKFE----KIMTKILILLCWIIALFVTTLSSLLHFLVLEVE-DIITKMK 81
 AmelOr46 KPIGAWPISLCTTRNE----KIISKILIIVCWSLSLFTLIPGLLHFILEKE-DTYLKK 81
 AmelOr49 KPIGAWPASFYKSRIE----KIVSKILIVICWISSLFTLIPGLVHFFLEKE-DIYVKMK 81
 AmelOr50 KPLGAWPASSSTTKME----RIISQILIVICWIIILFTVIPGILYILFVKQ-DIYVKMK 81

AmelOr26 KPIGAWPNLTKATRTE-----KLLVKKLLNFICHSLIIFTVMPCIMYIFYEDE-SLKTRMK 85
AmelOr53 KPIGVWPLIYNQTSRFE----QLISIIILMGTCFSSLLFIILPSGHHILFVEK-NLHMVKV 88
AmelOr54 KPIGVWPLISNQTNKFE----QLVSIILMITCFSSLLFIILPSGHHYFFVEK-NLNMKVK 88
AmelOr52 KPIGVWPFVYDRTSRFE----QLISIIILMATCFSSLLFIILPSGHHIIFVEK-DMHLKVK 86
AmelOr51 KPLGIYFYFIYNQANKFE----KILSIILILICFFIIQFVIVPFQYIILFYEK-DMNTKIK 86
AmelOr55 ISIGIWPTVLKNIG-----KFLPKIVIGINNLMCFFILIQSALHIILEQK-DTLLRLK 84
AmelOr57 ASIGIWPTVLKNIG-----KILPKIVIGFNNLLCFFTLTQSALHIILEQK-DTLLRLK 84
AmelOr56 TCIGIWPIILKNIN-----KILPKIVIGINNLLCSFILIQSALHIIEEEK-DVLLRLK 84
AmelOr58 NSIGIWPTVLKGID-----EYLPKIAIALSNLVLVSFTVIQCVLHILLEQK-DPILRLK 84
AmelOr59 KSIGIWPSIFKDVS-----KFLPKIMFGLCNFVLLFFAIIPCILYIVIEEN-DTMRFK 85
AmelOr60 KSIGIWPIILKDVA-----KFLPKIVIGISNFVLLFAIIPCILYIIEEK-NNLKIK 85
AmelOr61 KSIGIWPSVLKSVS-----RFLPKIMFGFNNFVLLFSVIPCILYIVYEEK-NIMIKFK 85
AmelOr63 WPVGTWPLQVF-----NTFSIIRATFSTFLLLLMLTILQVELYLDSS-NPEYNLD 73
AmelOr64 WPLGTWPLQVF-----NTFSIIRAMFSTFVLVLLMLAILQVELYLDSS-NAENNL 69
AmelOr66 WPVGTWPFQVY-----DIFSLTRTIFSIISLLLLMIAIVQVELYLDRT-DAENNL 69
AmelOr65 WPVGTWPFQVY-----DTFSLTRTIFSIISLLLLMIIIVQVELYLDRT-NAENNL 69
AmelOr67 WPVGTWPFQVH-----EIFSIRTIIFSISLLLLMVVILQVELYLDRT-NAENNL 69
AmelOr114 KFIGIWPEERKWNQAS-----NYLVLPFIFLMLCFICAPQTNLTIIISNDFNLVNIENLS 55
AmelOr115 TLLGVYPEPRKMSRNSRLM--SSLIFWFTTTLVTFTFICAPQTANLILKSTSLDEVIENLS 70
AmelOr118 RIFGIWPDSPYKPKKI-----ITWIIILPTFLVQYWCYCIHKLKGL-LIDLDDGLS 60
AmelOr164 RLIGAWPNSSCQILKY-----IMWTIVMSIFLIFQYSYCIHKLKATLIDLDDGLS 66
AmelOr163 RLIGWVWVYSSYRIMQR-----IFWTIIMGNSTVFLQWYCYISYFKTADLFDLLDGLS 65
AmelOr165 HFAGIWPGTFFPYLHK-----LGLWAAIAALQSYQYRYIVMHYKSDNLSIIDNLS 66
AmelOr166 YFAASWPGASFSILHK-----FFWTIFCTLHISQYSYLMHYKYDALTEIIDNIS 66
AmelOr167 RLIGIWPKSSYEIIVR-----FMWVIIMMCAQIFQYQYIINHIGFDNLADLIDSVS 66
DmelOr35a LNHFIFWPLDPSTGKWR-----YLDKVLAVAMSLVFMQHNDALRYLRFEASNRNLDAFLT 80
DmelOr74a LNHVAVWPLEAESGRWTV---FLDRLMIFLGFVLFCEHNEVDHFYL--IANRQMDNMLT 81
AgamOr3 TIAGLWGDERSQRY-----RFYLI-FSYFCAMVVLKPVLFQYDP--LEVAVR 83
AgamOr5 RFVGLWGERRRYR-----KFRLA-FLSFCLLVIPKVAFGYDP--LETMVR 63
AgamOr13 QLFGVTGSPERF-----RILPV-MLTYFFFIVVPKCFYGYDP--LEITII 63
AgamOr15 RVFGVTNHSEERF-----RIVPV-MLAYFFFIVVPKCFYGYDP--LEIMII 63
AgamOr17 RVFGVTGGPDVRF-----RILPV-MLTYVFCIVVPKCFYGYPN--QEIAMI 63
AgamOr16 RLVGVSQTQSERY-----RYVPM-FVLFLLTIAIPKIAFGYPN--FETSII 63
AgamOr55 HAVGIANGETFSSH-----RFTAV-YLLFIFIIAIPKLFQYTS--FEASV 64
AgamOr18 RVIGVWDVPPQYRY-----RYAAV-FLSYCFGILIPKLCFQYPT--LEASIR 63
AgamOr14 ERLGFWGDRTRV-----RYPVA-FVAFWITVAIPKLATDYS--VELFIC 63
AgamOr51 ERLGLWG-ESYRA-----RFLFV-VVAFSITVCIKFTTTYTN--LETFC 62
AgamOr12 QLSGFRQDTEQLG-----TRIYLNLFIFVAAILIPKVCFPYDP--TEAMVR 64
AgamOr19 KLSGLTQETTRFG-----AINFLNLFYIAAVLVPKVCFPYPN--TEAMIR 64
AgamOr20 KLSGLTQETTRFG-----AINFLNLFYIAAVLVPKVCFPYPN--TEAMIR 64
AgamOr21 RLSGFRQETQLE-----KQIFNLFVYVAALLIPKVCSPYDP--SEAIR 64
AgamOr50 RLSGFSPTQLE-----RCIYVNLISYITVILVPKVCFPYPN--TEAMIR 64
AgamOr29 KLFGLGRDEKLL-----LYWVQ-CVFYLVFSIIPRVLVQIDD--TIMVLR 63
AgamOr53 KLFGLGRDERFKL-----YWLQ-CVAYLAFSIVPRLLEIED--LEALMR 63
AgamOr30 MLCGCPRSARVNR-----RFWLL-GVFFFVFGQIPRFLIKIDE--PIALVR 63
AgamOr46 ALLGVNKNPSERF-----RLYAI-YIYLWVAMFIPKLCCLGYET--IPQCFR 64
AgamOr47 ALLGVNKNPSERF-----RLYAI-YAYLCIALFIPKLCCLGYET--ILQCFR 64
AgamOr48 AMLGLWGDRRKLY-----RLYAL-LLLAYVAIIFPKPVIRITDRHPFESIVR 68
AgamOr49 EHSGLWGDPRRKR-----SFALM-LLGTVLLLIVPKIVLGTGSDSFDIAR 78
AgamOr61 TISAIHYDAS---CWF-----RAIWIVYRSLPILVNIYSFYKAYRLILFEDNT 81
AgamOr62 TLFALHYHTRQPRWTVK-----KLLWTVYRTRYLLSYLSYCYKVYWLFSHWQYST 86
AgamOr63 KIYAIHYTPHG---WHD-----RILWYLYRALYGLIYLSYIHKTHWVLLHHPQDSF 82
AgamOr60 FLFAIRNDAPRG---VGQ-----FMRWCFHLMAPVFLSSYCYKAYWYMSHSEYSF 81
AgamOr75 VVSPAMLLQRP-----R-----SNLEVALKTLCLSMVAHTIALAYDFSQQT DVR 80
AgamOr76 VVSPAMLLQRP-----R-----SNLEVALKTLCLSMVAHTIALAYDFSQQMDVR 80
AgamOr78 VVSPAMLLQRP-----R-----SNLEVALKTLCLSMVAHSIALAYDFSQQT DVR 80
AgamOr77 TINGIHLHDDSR---LA-----RAFEYTFYALQLVQLLNGYNFAVLCSNDTISLE 67
AgamOr79 TINGIHLHDDSR---LA-----RAFEYTFYALQLVQLLNGYNFAVLCSNDTISLE 67
AmelOr99 RFLGQDPRQKDEFNRNIIV-----FILISIASIVIPTTLELYISLRNKDVGIVIE 77
AmelOr101 RFLGQDPRQKDEFNRNIIV-----FILVISIASILIPTTLELYISLRNKDMDGVIE 77
AmelOr102 QLLGQDPRKNEFRNFIV-----TVVVISISGNIVPTSIELYTSLCDKNMDAVIE 77
AmelOr103 QLLGQDPRKNEFRNFIV-----TVVVISISGNIVPTSIELYTSLCDKNMDAVIE 77
AmelOr104 KFLGQDPRQRDGFNRNIIV-----IVMVASISGILIPTSLELYTSLRDNKMDAVIE 77
AmelOr98 QFLGQDPYQECKYRNIIIT-----IIMLISMIAIFIPTTFEIVYSIHDKNTDVAVME 77
AmelOr100 -----MFE 3
AmelOr97 -----MICSLISFLIPGLSRVYISIVEKLNALME 30
AmelOr105 TICGINPYQNNISISIIII-----IMISVCMFLCPTSIQLWEAISNKDFDNI IQ 77
AmelOr109 QLVGVWVWYQKFFKTCIR-----FITFTIMIFSLATQISRVIIVFYSS--LDVLS 65
AmelOr110 QLVGVWVWYQERFIKTCMR-----FIVSVIMLLDLATQISRVIIVFYSS--FDVFS 65
AmelOr111 QLVGVWVWYQRFIKFCIR-----FITSVIVVLTLLAAQISRVIIVFYSS--IDVLS 65

AmelOr108 QLVGVWPYQERFTKFCIR-----LTIFAI I ILLTTLTQIYQVIVFCT---LDALS N 65
AmelOr107 QLVGVWPDQGKFMKFLMR-----F I I L I V M I I A F I A Q I S R V A V F Y S ---V D V L S D 65
AmelOr112 L I T G W V P Y Q N Y R S K M A E R -----F I S V T V M M S G F V T Q F A Y L V L N P T ---M D K I A T 65
AmelOr113 K L S G I W P D Q N K Y L K Y I S W -----I I I Y V I S I P S I V V Q I A R I V H I S T ---A N V I E 65
AmelOr106 I I V G M W P N Q K R --K T I P R -----I F V E L I A I L A H L T Q G G N M V L F F S ---L T L A M D 62
AmelOr122 K I V G L W P Y D K S I Y V W I Q R -----I C L S M Y F L I G V I F Q I I L L V K S E I --T L R N Y I V 65
AmelOr125 K I V G L W P Y D K S I Y V W I Q R -----I C L S M Y F L I G V I F Q I I V L V K S E I --T L R N Y I V 65
AmelOr123 K I V G L W P Y D N S I Y V R I Q R -----I C V L I Y F L I G I L I Q I F S L V K S E I --S L R N C I V 63
AmelOr126 K I V G L W P Y D N S I Y V R I Q R -----I C V L I Y F L I G V L V Q I F S F V K S E I --S L R N C I V 63
AmelOr127 K I V G L W P Y D N S I Y V R I Q R -----I C V L I Y F L I G I L I Q I F S F V K S E I --S L R N C I V 63
AmelOr128 K I V G L W P Y D N S I Y V R I Q R -----I C V L I Y F L I V V L V Q I F S L V K S E I --S L R N C I V 63
AmelOr129 K I I G L W P Y D N S I Y V W I Y R -----L C L L I Y F L V V V L V Q I F S L A K S E I --S L R N C I V 63
AmelOr133 ----- 63
AmelOr134 K I I G L W P Y N N S I Y V W I Q R -----L W I S A L F L G N I I F Q I V L L L R S K I --T V R N C I L 63
AmelOr131 K I I G L W P Y N N S V Y V W I Q R -----L C I S A L F L G N I I F Q I L S L I R S E I --T L R N C I L 63
AmelOr132 K I I G L W P Y N N S I Y V W I Q R -----L L L L T F L G N I I F Q I M S L L R S E I --T L R N C I L 63
AmelOr135 K I V G L W P Y N N S I Y I W I Q R -----L L L L T F F L G N V I F Q I V S L L K S E I --T L R N C I L 63
AmelOr136 K I V G L W P Y N N S I Y V W I Q R -----L W F L M F F F G N I I F Q I M S L L T S A I --T L Q N C V L 63
AmelOr138 ----- 63
AmelOr130 K I I G L W P Y D N S I Y V W I Q R -----L C L L S Y F F A N I I F Q I V S L L R S E I --T L Q N S I L 63
AmelOr137 K I V G L W P Y N N S I Y V W I Q R -----L W L L I F F L G N I I F Q V V S L S -S E I --T L R N C I L 62
AmelOr139 K I I G L W P Y N N S I Y V Y I Q K -----L Z L L I F F L G Q I I F Q X ----- 50
BmorOr20 R L L G A W P G H Y L G E E T G S ----K Y E C A P M F L L M F I K I A C L Y L T I V Y L R N N A D V L G F F F E L G 82
BmorOr3 R L L G A W P G H Y L G E E T G S ----K Y E C A P M F L L M F I K I A C L Y L T I V Y L R N N A D V L G F F F E L G 82
BmorOr18 R L L G A W P G H Y L G E E T G S ----K Y E C A P M F L L M F I K I A C L Y L T I V Y L R N N A D V L G F F F E L G 82
HvirOr6 D F I R T W P R K E L G E P E N L ----A F T V F M Q Y F Y L I L N I V T V M G S T S Y I V V R G S E L S F I E A G 87
BmorOr23 K I M D F W P --E R E E K N S K ----T R I F R L R Y I L V L Q F C F T L V A G V L Y L T N S V G K Q T F Y D L G 83
BmorOr16 K I M D F W P --E R E E K N S K ----T R I F R L R Y I L V L Q F C F T L V A G V L Y L T N S V G K Q T F Y D L G 83
BmorOr4 K I M D F W P --E R E E K N S K ----T R I F R L R Y I L V L Q F C F T L V A G V L Y L K N S V G K Q T F Y D L G 83
BmorOr5 K I M D F W P --E R E E K N S K ----T R I F R L R Y I L V L Q F C F T L V A G V L Y L K N N V G K K T F Y D L G 83
BmorOr22 K Y I D G W P N M D M N K K N V S ----K I R F H K R H L L V V E Q T I T F L S Q M F Y I V K N Y G K L S F F E I G 89
BmorOr17 K Y I D G W P N M D M N K K N V S ----K I R F H K R H L L V V E Q T I T F L S Q M F Y I V K N Y G K L S F F E I G 89
BmorOr1 K I I C A W P E K Q L N E I R S L ----G H S I H -R V I L P I Q S V V C L A C G I L Y I H F H F N E I P F F I L A 84
BmorOr1a K I I C A W P E K Q L N E I R S L ----G H S I H -R V I L P I Q S V V C L A C G I L Y I H F H F N E I P F F I L A 84
BmorOr1b K I I C A W P E K Q L N E I R S L ----G H S I H -R V I L P I Q S V V C L A C G I L Y I H F H F N E I P F F I L A 84
BmorOr19 D L T --W W G Y T F P K Y V G W ----F Y H L Q C N V V R L F G K C V V S Q I L F I I L N Y Q T I D K S V F I I 82
BmorOr15 D L T --W W G Y T F P K Y V G W ----F Y H L Q C N V V R L F G K C V V S Q I L F I I L N Y Q T I D K S V F I I 82
TcasOr5 F G L P A Y K I I K T P N F K S L T H --N N S K L N Y I M V I I S T T A Y L Y Y F K V G D K N T N S F E K H M T M Y R 79
TcasOr7 K E L G --K I H K D L N K L A M E V --N E T -F G E L M L L R F S G D F I Y I V G L S S N A V L N A E Y E T V L D 75
HvirOr4 V I C T L F G L V A E I N V G V E L S --V R M S S R M S Q V V S T C D V L V V V A T A G A G V Y G A P R R M R N M L K 70
BmorOr13 N V C T L I A V M I D F S V P V K L S --I R M Q T E T K R F V W I A D V V I M G I L S G V G V Y T A P I Q M R R L I A 118
DmelOr10a D I M G Y W P G K T G D T W P W R -----S L I H F A I L A I G V A T E L H A G M C F L D R Q Q I T L A L E 76
DmelOr33c I C M R L L V P T F F K D S S R P -----V Q L Y V V L L H I L V T L W F P L H L L L H L L L L P S T A E F F K 66
DmelOr7a A L G M Q A P D G S R P T S S T W Q --R I Y A C F S V M Y V W Q L L L V P T F F V I S Y R Y M G M E I T Q V L T 86
DmelOr22c L I V G L W P Q R I R G G G R P -----W H A H L L F V F A F A M V V V G A V G E V S Y G C V H L D N L V V A L E 75
AgamOr1 K Y L G L W P P E D T D Q A T R N -----R Y I A Y G W A L R I M F L H L Y A L T Q A L Y F K D V K D I N D I A N 79
AgamOr4 H I V G M N G A G F R S R I R V G G -----I F L F Y L I F L V I P P L T G G Y T D G H Q R V R T S V E F L F 74
DmelOr47b F Y Y V R A F L S L L C Q Y P N K K L --A S L P L Y R W I N L F I M C N V M T I F W T M F V A L P E S K N V I E M G D 94
AmelOr73 T Y G G Y W R P T K W P A S S Y K -----Y H L Y N I Y S A F M I F L L Y F I T F C T C V D S L I S K N L K T M S E 65
AgamOr68 R L I G A G L W E K Q E G I L W G -----R V A S V M Q I V L F L T L H A W T G Y K Y R D A L Q M L E 67
DmelOr59a T A W R Y L G V A H F R V E N W K N -----L Y V F Y S I V S N L L V T L C Y P V H L G I S L F R N R T I T E D I L 70
DmelOr23a R I C G A L D L S E G R -----Y W S W S M L L C I L V Y L P T P M L L R G V Y S F E D P V E N N F 65
AgamOr31 R A I G I A R T D S F R G -----R V L F A V S F F T V L V M M L G T V M F A F K H I D Q I M L L C D 64
DmelOr2a R V W E L T G L M R P P G V S S -----L L Y V V Y S I T V N L V V T V L F P L S L L A R L L F T T N M A G L C E 72
AmelOr62 K I I G I W P T N G E R S F F G -----R W I F A V T T Q I G I I Y I L S L E I Y R H C L D I D D T M D 70
AmelOr121 N V I C L W P V E E Q N M R K Q S -----W T K L H I M T C F M L I T F V C T I P C L C A L K Q C N N L M E V T 77
AmelOr140 P I I S I F Q S A S M Y F N G I F N -----T K K I K N I L L F I K N D H K Y Y I N R P E N I I L Q K Y D L Q 71
TcasOr12 K C I Q F F G Y F S P D F R N N S Q R --K L L F R I Y A A L F V G F A F I L S L L S Q I A N M V D A F G D I E K M T E 75
AgamOr8 A M I G V A R Y G E P K R T L R A Y ---L K H L L F W S S C I N T G F C L V I E H I Y F V K A A G N F T N F L Q L T A 79
BmorOr9 W L M G I P F D N P K I Q I R -----Y Y V L L L P L S L M L I E E I A F F G S R M S S E N F L E L T Q 65
AgamOr40 R L M A V W P T D F N P Y L P Q Y L R --G R F F L S E L F D F G Y Q L F W Y F I C V H I A A F H I M S V L T G D L S Y 81
TcasOr63 L V V G F Y P K R D N K H E I L Y -----W L S A F F N L L I S Y G Q L T T M I I Q M V F D R S D L S K L T E 72
TcasOr4 R Y G S F Y P C G K R I K -----F I F L G L F M F V Y S W T E F L S M I T V L F V E R D N L S K L T S E 65
TcasOr13 R I F C L Q P L W I K T D Y S Y I S K S G P Y M A Y S I L T S L F L I T A S I Y G L T Q V Y S M E A V Y L I R L S S 84
AgamOr24 K S M G V S F F K R K H S F V N -----F F F I F G I S N L V L Y V V S V L I S S Y K S R H D I I K L I Y 60
AgamOr54 R V G G M L G I D I F T P G Y S S T N -----L L L R M V L L N T F T F F W I N L Y S L T T T Y G N L V D F M Y 86
AgamOr23 D L P G D G S H S V R K P L L D R -----D R L G I A D G C C V L L C Y A G N R Y T G E L M K F Y F E H S I T 70
AgamOr64 R S L Q L F G N P V R C L Q E F G T V R ---G L F V Q L C R F L F L L P Y A S F A L K S Y W Q L N H P L D T N N S I L 92
DmelOr82a R A M G H K D M D S T D S T A L S -----L K H I S S L I F V I S A Q Y P L I S Y V A Y N R N D M E K V T A 63
AmelOr116 Y Y I G L W P D R V K Y K Y L Y N -----L Y T I C S L I F L V G I I I V S E I I Y I I I N W G K I B I M M T 78

AmelOr160 GLSGLWPDNRND-----VRFFLYITYVVI FTWLEIVTLVQNIHDLKTLK 70
TcasOr10 KSERFWKLD RFGDLQAKN-----LHSTYPIFQIFFYVYVILFLT CAMFALVNW 65
TcasOr26 KRMYLWPTASVTSR-----KPAFFLITFSCFLLYGSMHLIVNDISMEEVH 55
AmelOr117 SIAGMWPIDEKSSIFSK-----IFAYVRLIFGLIIVNSFFIPQIIIIIVMNWKNIKIAG 74
AmelOr120 KFGVGFYPIN-----ILRYVICISCIMFIVIPQIIIMIIYNWDLNIVME 64
BmorOr7 RCCGFCRLSRSTARRGLS----VAHEVYRALTLTLTVVYLLQECIYAYQERTMDKLSR 71
AgamOr6 LMMGIPPCEEPYPPGVLP S-LKRNAGFIASFLLLAYTTIGELIYLKQMFERDVTFLVTF 76
DmelOr45a EIVGFDPSTPQLSLKHP-----IWAGILILSLISHNWPMVVYALQDLSDLTRLTD 63
DmelOr67d FCVGF CGNDVADPNFR-----MWLTYAVMAAIAFFFACTGYTIYVGVVINGDLTIILQ 75
DmelOr83c SLTNLLGVDFLSPKLFKN-----YRTWTTIFAIANYTGFTVFTILNNGGDWRVGLK 70
AmelOr162 NEYEILCEHYAIARKITTS-----FVAFLLGLTTPFGAMPLLLNIGDALGLCNI SDDR 72
HvirOr3 -----MSGDKVTEERKKLMANYVM 19
TcasOr20 TYLNMLPEKTTFTCTTIQOY-----YVSVIITITTFPILADLVSQFYEESISFTSVNE 66
AgamOr11 RYYGILLGQSQSYKKVH-----CFRGMVFTLSMVLFNCTQYIDLWQVWGSVSDMTA 77
DmelOr56a QWYGYVASKDQNRPLLS-----LIRCTILTASIWLSICALMLARVFRGYENLNDGAT 77
AgamOr28 DLYVYWF LTFPIASLCVP--QIFRVMKMLKQTKQIIHFYLSLQFTYLVVDTKSLIDFIS 90
AgamOr58 RFIGFFAWDVKLNATWLK-----MTLIVFAVGYEITAIAAMALASVKGFPTERSFT 79
AgamOr59 YLRYLRPFQLIAGYPINRPALSKLATVVRLLAYLTYLGTLLHKLISYVLRPEIDINYSF 86
DmelOr1a ARMGLDLQPDKKG NVLRSP-----LLY CIMCLTTSFELCTVCAF MVQNRNQIVLCSE 71
DmelOr13a KLNGSWPLTESRPPWRSQS--LLATAYIVWAWVIVASVGITISYQTAFLNNSDIITTE 78
AmelOr161 KIIISIWPLAENSSRITITFR-----RFHLFCMFFLVIVMSVAVTADVHNIDDLDEATE 74
AmelOr141 KLCGIVPCGDGFARN-----ILAWLAFSCLTIYSISYVHEFITNTNTLTTALE 69
AgamOr52 WLRALF-----LLYQLLLPTQAI IWLWRTWAVAYIEHNKPLAIS 55
AgamOr36 ALPGFHLVVEEERTSSWKR-----ALFLLSRTVQLLQYALWADR FYLALVDPSSPPGKALH 86
AgamOr25 KWLGF DVIDPNWKVTP-----LTMFTIVMFALQHYTTYLYLSTHLD MFD MFE 64
AgamOr45 RISSHMAVLKLNIIDPAWR-----PTLRF GIVLFLTALVPVYIWQGIKVYRTRFETLLE 71
TcasOr3 KLTAFWIYDDETRRKK-----YLQHAYNIFWIFYLFVAYQPAELLYVYYSFNDLSVFLR 76
DmelOr88a QMVHFQWRRNPVDNSMVN-----ASMVPFCLSAFLNVLFFGCNGWDIIGHFWLGH PANQ 79
AgamOr22 YEVFHWFLKISLLRIFDDDFLVAVPPTLTFQFHETELVSLGVI LLHAYCYRNDLDTIIL 78
DmelOr49a KTLGIDL FHTPKPWWRYLL---VRGYFVLC TISNFYEASMTTRIIEWESLAGSPSKIMR 75
DmelOr85f WIMGYDMLGVPKTRSRR-----ILYWIYRFLCLASHGVCVGVMMVFRMVEAKTIDNVSLIM 74
AmelOr119 VVVGQMAHASGHEWMKSIRTLTSIKINYLKYSGLGEIDSSCSRILKYAYFVYKVMMLVS 86
DmelOr63a YTVGFNLLDPSRCGQVLR IWTIVLSVSSLASLYGHWQMLARYI HDIPRIGETAGTALQFL 85
DmelOr67b VEYSAYALGVNIAPKRSS---KYCRLTRILVLI VNL SIIYSLVAFIMENYIMSFETYVE 79
BmorOr21 IAAMIYPNPATEKRRLIYIG-----LMLLSVIPLAFMIVTEMYEFFMASDLNNTIR 71
BmorOr11 HMNRSHPSIKRNKIWLLQ-----FISLMTLTAFCATGLITSLLFHDLKFGK YMEASK 71
BmorOr12 GLQGIWVDEIKLSRRFHV F-----FKVVTFILHIMCGMFAGLQFFAIFTQNSLNSQQKSD 81
AgamOr33 YIDELWECVEQMOTYHEH-----YLLQGEWFVRRMRRLQERMLQDASKLLATLL 70
HvirOr1 KVDVAKPKVKNITTFQDALRATLIIGQVFSLLPFVGVFTNVASNVKFIKTSWKCGY SLLS 79
HvirOr5 YSISILS-----LVLVSKLYYNWRTNIAGVWGKVERSVGVKIP 54
TcasOr1 YLFQMRNV PQS-----YCFVTILFDSVNKLG TQIVNPYSVKQYVMQQQVK 61
TcasOr2 QIFGLITFGCSNRCFFPSK-----IRICWNVLLNCVYLF LFCGFCVYEFASDERIKLVIK 79

TcasOr16 NTITVLFFTHCVTKFVYFAVRSKLFYRTLGIWNQPN SHPLFVESNN-----RYHGI 127
AmelOr2 NTITMLFFTHSVVVKLVYFAVRSKLFYRTLGIWNPN SHPLFAESNA-----RYHQI 125
AgamOr7 NTITTLFFTHSVTKFIYFAVNSENFYRTLAIWNQTNTHPLFAESDA-----RYHSI 125
AaegOr7 NTITTLFFTHSVTKFIYAVANSEHFYRTLGIWNQPN SHSLFAESDA-----RYHSI 110
DmelOr83b NTITTLFFTHCITKFIYLAVNQNFYRTLNIWNQVNT HPLFAESDA-----RYHSI 127
BmorOr2 NTITVLFFAHSI IKLAFFAFNSKSFYRTLAVWNQSN SHPLFTESDA-----RYHQI 128
BmorOr2a NTITVLFFAHSI IKLAFFAFNSKSFYRTLAVWNQSN SHPLFTESDA-----RYHQI 128
HvirOr2 NTITVLFFAHTI IKLAFFALNSKSFYRTLAVWNQSN SHPLFTESDA-----RYHQI 128
AgamOr56 AANEQIVFSLICCKLCFYAIHFRRWEKLYYDLQRSFSTVLNNPN-----113
AgamOr57 AANELIVFSLIFCKLCFYAIHFRRWEKLFYDLQRSFSSVLNNPS-----113
AgamOr26 AINEQIVFCIVFLKFSFYAIHFRRWEQLFYDLQRSFSTVNNPS-----113
AgamOr27 ATNEQILYFIAFFKLYFYVIHYRRWEKLFYDLQIAFSSVMTNPS-----113
HvirOr9 LIPCLILTLISDFKTL SLLYARHNNEFIVTMKSLLLN QKQLEEKE-----TRF-- 124
HvirOr7 VAPCLTFSILSMIKSLYHLMYEEHIEQELIELLELRENNREKCI-----E--- 100
DmelOr85b ALSYIGFVTVGMSKMFFIRWKKTAITELINELKEIYPN-GLIREER-----YN--- 116
DmelOr85c VLSYIGFVIVGMSKMFFIWWKKTDLSDLVKELEHIYPN-GKAE EEM-----YR--- 115
DmelOr85d NLSFIGFVIVGDFKIWNISRQRKRLTQVVSRL EELHPQ-GLAQQEP-----YN--- 137
DmelOr67a LLSYVSFVVMGLSKIGAVM KKKPKMTALVRQLETCPSPSAKVQEE-----YA--- 129
DmelOr67c VAPCIGFSLVADFKAAMIRGKTLIMLLDDLENMHPK-TLAKQME-----YK--- 128
DmelOr92a VAPCIGFSFMADFQFGLTVNRKRLVRLDDLKEIFPL-DLEAQRK-----YN--- 133
DmelOr69a MCSSFCLTFVGF CNVYAI STNRNQIETLLEELHQIYPR---YRKNH-----YR--- 124
DmelOr69b VASMLGFTIVGTLNLWKMLSLKTHFENLLNEFEELFQL---IKHRA-----YR--- 124
TcasOr6 ATESFFTQYGLAWKIAV FVVYKTELAQIIR-LCDNLWPLDEFGTGH-----NFQF- 93
TcasOr11 ASEAMIVQYQLFIKIAVLLKHRKNLVVLMQ-KTRKFWPLDKFGQDA-----KIER- 110
AgamOr41 VLITIFFATIGIGHISVFL LCS-KLLAEELLEQSYR TYRLVVD-DQR-----EQRI- 116
AgamOr42 SIVVLFYIGIVG VTRLA VAISNP-AGCYRSIQIAEEMYQRANGSNPA-----ECNV- 122

AgamOr43 SAAIFGVFIQGLAKFYTALRYRKFEEAMYNRLDLFHYEYRNHE--K-----NNAT- 117
 AgamOr44 SAAVYGVFIQGLAKFYTALRYRKFEEAMYNRLDLFHYEYRNHE--K-----NNAT- 117
 AgamOr66 SLSFLGFFFQCSLKMYYTIQQAPQYAVNFCLKEAIYERHSGKTLA-----KQTT- 115
 AgamOr67 SLSFLGFFFQCSLKIYYTIQQAPQYAVNFCLKEAIYERHSGKTLA-----KQTT- 115
 AgamOr72 VLITMGTAQVLYIKFFVGHKSQAQEIIMLVTALEQQVLKRYQNGSEQ-----EIAV- 116
 AgamOr73 VLITMGTAQVLYIKFFVAHKSQAQEVKLFVLEQEVKRYQNGSEE-----ETAV- 116
 AgamOr71 VLITLGTAVQVLYIKFFVWHSKQEVKLFVLEQEVKRYQNGSEE-----ETAV- 116
 AgamOr74 VLITLGTAVQVLYIKFFVGHKSAREINLFTAKLEQEVKRYQNGSEE-----ETDV- 116
 AgamOr70 VLITLGTAVQVLYIKFFVGHKSKEVIVFSNKIEQEVFEQKNRRTAG-----ETVL- 116
 AgamOr69 ALITLGTAVQVLYIKFFVGHKSKEVIVFSNKIEQEVFEQKNRRTAG-----ETVL- 116
 TcasOr9 -----
 TcasOr18 NPFDLVQEAMIIMSLVIFYKN---WQNMVALVTNINKNFHRATDNVI-----EKIS- 105
 DmelOr83a NCLIQTIIYLTWTIAMKLYFRFRPGLLNTILSNINDEYETR SAVGF-----SFVT- 138
 DmelOr85e DALMTMTIIYFFTYGTIYWC--LRSRRLAYMEHMNREYRHHSLAGV-----TFVS- 147
 TcasOr24 DIAILATNTGYILMMLLYII--RQKDLESLLVDLSSFKKYQKPPKF-----D---- 117
 TcasOr25 DLAILASNIGYVLMMTMYV--RQKDLLELLDLSDFKTYGKPPNF-----D---- 117
 TcasOr19 DLGIFAIIIGLVTTMMVLYV--SQDKVHLLAKLGTHEIFGTPDNF-----D---- 82
 TcasOr22 NIAVLSAVTGLTYMLIVFVW--SQDKLVHLLAKLGTHEIFGTPDNF-----K---- 111
 TcasOr23 NIAVLSAVTGLTYMLIVFVW--SQDKLVHLLAKLGTHEIFGTPDNF-----T---- 111
 AmelOr168 DGTVMNMLLEVIILNVYLH--SRKKLLRELIGKLNQILINDEIF-----RNV-- 113
 AmelOr170 DGTVNIAISFEVIVFNIYLH--SRKKLLHKLIGKLNHLLITDEIF-----RSV-- 113
 AmelOr169 DSTVNIVISLEVFVLIYVYLH--NRENLLRELIGKLNCLLIVDDETL-----RDV-- 115
 DmelOr65b DLAFILGAFFIIFKTYFVWYGDDELQVIVSDDLALHPWAQK-----GPNP 111
 DmelOr65c DIAFIIGFFYIAFKIYFQWYGDDELQVIVSDDLALHPWAQK-----GPGA 111
 DmelOr65a DLVFIITIIIFICFRLVFFAQYAGELDVIIDALEDIYHWSIK-----GPAT 142
 TcasOr17 SIFVTLSCGLTVAKTYLLQNMQLKELFISIN-KDIFQPK---N-----NKQIL 116
 TcasOr21 TAYVLLTEILAVIKTYFVVKNMKMLKHLMQSLNNKLFQPR---S-----HEQIK 116
 TcasOr56 GLCYCVTHVLGTVKMFMLLYLRKKLWGNLTTLE-EGIFKPNPTRGG-----PEELQ 124
 TcasOr15 GLCCCVTHVLGAAKMFMLLYLRKKLWGYFTTLE-NGIFKPNPCRGG-----AEFE 122
 AgamOr9 GMFVLLTQLVMILKMEFFYKRVFKIQQ-LIRRLNGKLYQ-S---R-----NAEED 134
 AgamOr65 GMFVLLTQLVLILKMEFFYKRVFKIQQ-LIRRLNGKRYQQS---G-----NAEED 138
 BmorOr6 ALYMFFTQTTCCSKAIGFYFNFLKIKR-IVASMDVLFVTAM---S-----IEDQA 113
 BmorOr10 ASILLFTQASVCYKMTAFISKTNFVI-LLGLIESEIFSAQ---T-----ELHEK 112
 AgamOr34 IMYIFLTETAMILKTLTIYRHFNIVWS-LYETTLGVSFQPR---D-----EQERE 115
 AgamOr37 IMYIVFTEIVMALKAIIVTYKFDQLCD-LYRQTLGSDFKPL---D-----AEEDQ 127
 DmelOr94a VLYMSITEMALVVKILSIWYRTEAWRLMYELQHAPDYQLH---N-----QEEVD 122
 DmelOr94b VLYMSITELALVTKLLNIWYRREHAASLIHELQHDPAFNLR---N-----SEEEK 119
 DmelOr71a VLLICLTTTALGGKVINIWKYAHVAQGILSEWSTWDLFELR---S-----KQEVD 115
 DmelOr46a AIFILATSAGHTTKLLSIKANNVQMEE-LFRRLDNEEFRPR---G-----ANEEL 114
 DmelOr46b VFFMFATEISCMAKLLHLKLSRKLKLAG-LVDAMLSPEFGVK---S-----EQEMQ 114
 HvirOr8 NMVFYFTDSATLSKVMITIGFMRKKILQ-LFEMLESDFIQPD---N-----AEGLA 112
 BmorOr8 EVIFCFTEITVSTKVLMLFKRNKILD-AFDLLNKNEFRGN---S-----EESSA 114
 AmelOr68 SFYMFIASSLSCCKIVALMNHKAIKI-FRRKLEEEPCPKPT---N-----TKEVT 111
 AmelOr69 NFYLTLAIFISCHKMYSMLVNRENIIL-VNRMLESEPFQPE---T-----EEEMD 110
 AmelOr70 NFYITLVVFTVSTCKMTIILRYRKNILS-LMDDLQHEPFSPM---T-----HEENE 111
 AmelOr71 NFSVTVVFTVSTCKLITILTRRENILL-LCNTLKQEPSPISPI---N-----TEEFE 111
 AmelOr72 NFGITITVFTTICKFINLLFRGIIIS-LLDLLQKEPFLPM---D-----IEEIK 111
 DmelOr19a SLCVTPHPTLYMLKLINVRRMRGQMISSHWLLRLLDKRLGC-----DDERQ 117
 DmelOr19b SLCVTPHPTLYMLKLINVRRMRGEMISSHWLLRLLDKRLGC-----ADERQ 117
 DmelOr33a SLHVTSECLFCSYKFFCFRKLSEIKEIEILFKELDQRALS-----EEERN 111
 DmelOr33b GLPITAACFFASFKFICFRFKLSEIKEIEILFKELDQRALS-----REECE 113
 DmelOr22a SLEIGVNMYSFSSFKCAFTLIGFKKRQEAQVLLDQLDKRCLS-----DKERS 131
 DmelOr22b SIQIGVNMYSFSSFKSYLTMGMGKQRQEAQVLLDQLDKRCLS-----DEERT 131
 DmelOr42b SLQVCINAYGSSVKVAITYSMLWRLIKAKNILDQLDLRCTA-----MEERE 128
 DmelOr59b SLQVCINAYGSSVKSTITYLFLWLRKTEIILLDSLDRKLAN-----DSDRE 129
 DmelOr59c SLQVDINCIGNVIKSCVTYSQWFRFRMNELISSLDKRCVT-----TTQRR 131
 DmelOr98a VMQLFFNSVGMPPFKVLFNLYISGFYKAKKLLSEMDKRCCT-----LKERV 126
 DmelOr42a SLQVAFNAWSCSTKVLIVWALVKRFDEANNLLDEMRRITD-----PGERL 131
 DmelOr85a YVQVPVNTNASIMKGIIVLFMRFRSRAQKMMDAMDIRECTK-----MEEKV 129
 DmelOr43b SLQLCLNTWCFALKFFTLIVYTHRLELANKHFDLQKCYVK-----PAEKR 128
 AgamOr2 NGYFTVLYFNLVLRTSFLVINRRKFETFFEGVAAEYALLEKND--D-----IRP 107
 AgamOr10 NAYFAVLYFNAVLRRTLILVYNRDKYESFLAGAASVYEEIRAIN--D-----DVITK 108
 DmelOr30a NVYLLVFTNTVVRGVLLQDRFYSERFINILKSFYIELLQSD--D-----PIINI 113
 DmelOr49b NSYMLVLWINTVLRAYLLLADHRYLALIQKLEAYYDLLLLLN--D-----SYISE 107
 DmelOr43a NMFFFSIAFNALMRTWLVIKRRQFEFLGQLATLFHSILDST--D-----EWGRG 111
 AgamOr32 EIMLIQLCFVMLLKFNLFITRSGMYNLVEAFKRLKCIDKA-----EFA 108
 AgamOr35 AIPTLVVCMVAISKFYIFVHPAALFALIDSFALQRRASRE-----DLL 107
 DmelOr47a AMVALLITILGLFKFSMILYLRDFKRLIDKFRLLMSNEAEOG-----EEYAE 110
 DmelOr98b SLCSVLVDLALCKIGLFLWLYKDFKFLIGQFYCVLQTEHT-----AVAEM 112
 DmelOr9a TLGSTFASMLTLVKFLFLFCYHRKEFVGLIYHIRAILAKEIEVW-----PDARE 122

AgamOr38 SICPTVARFSGLLRMCWFLRNEHKIKSALNSVVHLIKNEHPR-----ETG 127
 AgamOr39 SICPTVARISGFLRMVFLYLANEEDIHRVLLNNISKTLLQDEHPR-----EHT 128
 Dme1Or24a ALCPVASSILSLVKMVAIWWYQDELRSLEIERVFLTEQQKSK-----RKLK 109
 Dme1Or45b AFCPLACSFTTFLFKLGWMWRRQEVADLMDRIRLLIGEQQEKRE--D-----SRRKV 123
 Ame1Or74 LTCNMMCILLGLFKCFVISFFRIEFSRIVSYAQKHFWR-LDY--D-----YDEKI 116
 Ame1Or86 LTCNTLCIVLTMFKFSILFIRRTFEFKNLILFARKNFWH-LDY--D-----RHETI 116
 Ame1Or75 ICCNILYVAIVLLKISVLYAHREFFNLIAFTQKNFWR--LYD--D-----PQELL 116
 Ame1Or84 ISCNLYLMIIVVLKVGVLVYAHKMEFFDLVTFTRNNFWR--SYP--D-----PEEEL 114
 Ame1Or87 TACNILCLIMVLLKLFVLFVHRKEFIDLLVYTHENFWH--TNY--T-----NNELL 131
 Ame1Or76 VACNIITVSLVLIKLLTSFIYNEELLGIIRYAKTNFWH-SNYD--T-----C-EKS 116
 Ame1Or85 IICNLVTVILVLFKISISLMYRNKLHKIIQYAKTNFWN-LKYD--L-----HDEQI 118
 Ame1Or88 AGCNVITIVLVLKIFVLYINNEELLNVVNYAKTNFWRESNYE--P-----H-EKK 117
 Ame1Or91 SVSNTLSLILPLLKIFILLSNKEDFFRLIVYMQRNFLQ-GNYD--D-----H-ERK 115
 Ame1Or92 STSNTLSLILPLLKIFILLCHKQDFRLLVLYMKRNFLX--NYD--D-----H-ERK 112
 Ame1Or95 SMCNMLSIAAPLLKLITLVVHREDFFYLLILYLRQKFLH-GDYN--D-----Y-ERN 113
 Ame1Or93 FISIISSIMLLKIIILFSHREDFHLLILYMKRNFLX--NYD--D-----H-ERK 101
 Ame1Or77 NTCNIITVITMPLLKIFVIVLNKDDFFHLIFYTEKHFKYK-DNYD--E-----H-EQR 117
 Ame1Or94 IVCNSLGLVMDLLKILVVFVHKKKFLGLIAYMQKNFWH-LDYD--Q-----R-ENS 116
 Ame1Or96 IACDGLGLVMDFFKIFSLFIYEKKFLGLMVYMQKNFWH-YNYD--E-----K-EDL 116
 Ame1Or79 VVTNNITLIIISLVKICNIIIIYKGFNLIVDMQENFWN-VDY--D-----YHEKE 116
 Ame1Or83 AMTNTITTIMALIKICIIILTYKGFNLIVYMQQNFWN-VDY--D-----CQEKE 116
 Ame1Or80 VTTNNITMIMGVVKICIIILYKGFNLIVYMQQNFWN-VNY--D-----HREKQ 116
 Ame1Or81 ATTNNTITMIMGVVKICIIILYKGFNLIVYMQQNFWN-LNY--D-----HCEKR 116
 Ame1Or82 SITNNITMIMALIKISIIIIYKGFNLIVYMQQNFWN-VNY--D-----YREKE 116
 Ame1Or78 ALTNNVTMVMGLIKIYIIILYKGFNLIVHMQQNFWN-VNY--D-----YHEKE 116
 Ame1Or89 VVTNALSMMMITVKVCVIVVHKEEFINLIVYMQENFWN-DNYH--D-----LRERE 117
 Ame1Or90 ALTNYMSVMMILLKICVIVVHKEEFINLILYMQRYFWN-VNY--D-----SREKE 114
 Ame1Or142 LGKTVSLTAAVAQVTIKMIIICRLQQKRFQMLYSEMENFCKQAT--N-----EEKII 118
 Ame1Or146 FCKAMSLSLAVVQVPLSSFCITQYDRFQRLIKEMKFCENAN--S-----YERQV 118
 Ame1Or148 LFKCICLLICVFNIIQTIICFIKYDVALQRVVEEMMTCVKEEQ--L-----Y--KV 116
 Ame1Or158 LFKCICLLICIFKHIIQTVICFIKYDVALQRVVEEMMTCVKEEQ--L-----Y--DI 116
 Ame1Or147 FFKSICLLMGVQHVIVQTTICFIKYDSLQRVVEEMMTCVKEEQ--L-----N--EI 116
 Ame1Or150 VFKSIALCVGLSQMIIQTAICFVYNTLQRVIEEMITYVKEAQ--Q-----YERKI 118
 Ame1Or151 VSKCVAVSIQLTQVITQTIICFAKYDSLQHVIEEMIIICIKAAQ--Q-----YEEKI 118
 Ame1Or152 VKSIALSVGLIQVIVQTTICFIKYDSLQHVIEEMIIYVKEAQ--Q-----YEKKI 118
 Ame1Or154 VFKCICLSIGITQLIVQTLICFIKHNLSQRVVEEMVNCVKQAAQ--Q-----SEIEI 118
 Ame1Or155 ISKICISIGVTQLIVQTLICFIKHNLSQRVVEEMMCKVKEAQ--Q-----NEIEI 118
 Ame1Or157 LFKCICVALCLVQYVAQTIVCLVKYDTLQRVVEEMGLIEERR--M-----Y--EI 115
 Ame1Or156 VAKSISIMVVLIIQLIVQTTICAIKHDTLQHIIEEMITYMKEAK--Q-----YEKKI 118
 Ame1Or153 IFKNYHRFIDVAQNIQTVICFY-----IKEMKICIKETQ--E-----YEIEI 108
 Ame1Or144 SMKTASEMAALLEVVLDLVLCKWNNSELQVLIIEVKSFLMAS--E-----YEIKI 119
 Ame1Or145 SMKTASEMAALLEVALDLALFKWNNSELQVLIIEVKSFLMAS--E-----YEIKI 119
 Ame1Or143 SLKTASEMAALLEVVLDLILCKWNNSELQVLIIEVKSFLMAS--E-----YEIKI 114
 Ame1Or1 VIAAQIFSLLAIIKFWTIIINREIRFWLMEMEIQYRDVECE-----EDRL 125
 Ame1Or3 VIAAQVFSLLAIIKIWTILINRNEIRFCLMEMEVQYRDVECE-----EDRL 130
 Ame1Or6 LFMLLTNIINQVFKYVITLNRANELRIAIHEIKKDWTATPE-----DRF 117
 Ame1Or7 LFMLLTNIINQVFKYVITLNRANELRIAIHEIKKDWTATPE-----DRF 117
 Ame1Or4 LFMLLISTLNQVFKYVITLNRANELRIAIHEIKKDWTATPE-----DRF 119
 Ame1Or5 LFKLLTNTLNQVFKYIITLNRANELAIAMNEIKNDWTATSE-----DRW 119
 Ame1Or8 MLMPHINSIAQMTKYTIILRRTKELGKLLDEIKKDWSATQE-----NRR 121
 Ame1Or9 MLMPLMSTIAQMTKYTIILRRMKEFKNLLDEIKKDWSATQE-----NRR 121
 Ame1Or11 LLMPHLNSIAQMAKYTIILQRAKEFSKLLDEIKKDWSATQE-----NRR 119
 Ame1Or12 LLMSHINGIVQMAKYTIILRRKTKELGKLLDEIKKDWSATQE-----NRR 121
 Ame1Or10 LLMPHLNSIVQMIKYTIILRRQMKLIDKLLDEIKKDWSATQE-----NRR 121
 Ame1Or14 MMIPQVNGYLQCKYSLVLRWTKLRLVLLNEMKEDWLNTEE-----DQL 121
 Ame1Or15 ILIPLINGYLQCRYSLVLRWTKLRLVLLNEMKEDWLNTEE-----DRL 122
 Ame1Or13 MFVPHMNGITQVSKYTIILRRQIKEFNIIILKEVQRDYSLATDK-----NMW 113
 Ame1Or16 LMGPINCSMQFFKYTIILWRRKEIQEGLHAIRHDWIQATEE-----ERL 124
 Ame1Or17 LMPPIINCSIQCFKYTIILWRRKEIQEGLYAIKHDWIKATEE-----ERL 124
 Ame1Or18 LGSALSFFLMAVMKYCVFIIREDDIRKCVELIENDWKNVRYQ-----EDRK 132
 Ame1Or19 LGSALSFFLMAVMKMCVFIIREDDIRKCVELIENDWKNVRYQ-----EDRK 132
 Ame1Or22 LFGPLSFCVMAFLKYHLLILHKDNISECIKRIEWDWKNITYS-----KDIE 133
 Ame1Or24 LFGPLSFCVMAFLKYHLLILHKDNISECIKRIEWDWKNITYS-----KDRE 125
 Ame1Or20 QFGPLIFCMMAFVYKYYLIFHKTDIRECVERIKWDRNITYA-----KDRE 131
 Ame1Or25 MIGPLSFFLMTFMKYLLLLHENDIREGIECIWDWKNMKHQ-----EDRN 126
 Ame1Or29 MVGPLSFFVMTIMKYFLLFHENDIREGIERIEWDWKNVKHQ-----EDRN 127
 Ame1Or30 MIGPLSFFAMTLIKYFLLFHEENIRKGIHEIWDWKNVKHE-----EDKR 127
 Ame1Or21 FVSLMSFCMLSITKYHLINIHKDDVRECVKRIEWDWKNISYS-----EDRE 125
 Ame1Or23 FVSLMSFCMLSITKYHLINIHKDDVRECVKRIEWDWKNISYS-----EDRE 125
 Ame1Or35 MIGPFSFCIMAAIKYVLLSRGSHIGKCIEDIRVDWFRVSSHN--C-----LEDRK 131

AmelOr27 TLGPVSHWFVSTVNYTALLMKSKDIRYCFEHMEADWQTIKRM-----EDQQ 126
 AmelOr28 VLGLSLAHWFVGTMYNTTLLLRGKEIRLCVEHIRTWQTVTRE-----EDQQ 127
 AmelOr33 VLGLPLSHWFIGGINYTTLLLRKKEIRYCIKHVQRDWRIVTRM-----EDQQ 128
 AmelOr34 VLGLPLSHWLVGGINYTTLLLRNKEIRYCIEHMQRDWEIVTKT-----EDQQ 128
 AmelOr32 VLGLPLSHWFIGAINYTTLLLRKKEIRYCIEHMQRDWRIVTRT-----EDQQ 127
 AmelOr31 VFGPLSHWFIGGINYTTLLLRQKKEIQYCVHEMQTDWKIVNRA-----KDQQ 127
 AmelOr36 SLAPISYILGGGLNYAVLLLRKNDIRYCIDRIEADWKVITRM-----ADRQ 127
 AmelOr37 SLAPISYIFGGGLNYAVLLLRKDDILYCIHEMETDWKITITRM-----TDRQ 128
 AmelOr38 SLGPISYCFGGGLNYAVLLLRKNDIRYCIDHIETDWKVITRM-----TDRQ 128
 AmelOr39 SLAPISYCFGGGLNYAVLLLRKSDILYCIHEMEVDWKAITKT-----ADRQ 128
 AmelOr47 SLGPISYCFGGGLNYAVLLLRKNDIRYCIDHIETDWKVITRM-----GDRQ 127
 AmelOr48 TLGPISYCFGGGFNYAVLLLRKNDIRYCIHEIETDWKIKRM-----EDQQ 127
 AmelOr40 TLGPISYCFGGGLNYAVLLLRKDDIRYCIDHIETDWKAITRT-----GDRQ 127
 AmelOr43 TLGPISYCFGGGLNYAVLLLRKNDIRYCIDHIETDWKAITRT-----GDRQ 128
 AmelOr45 TLGPICYCFGGGLNYAIIILLRKNDIRYCIHEMKADWKAITRT-----DDQQ 127
 AmelOr41 MTGPIIYICIGGGLNYAIIILFLRDDIRYCIHEIETDWKITITRT-----GDRQ 127
 AmelOr42 MTGPIIYICIGGGLNYAIIILFLRDDIRYCIHEIETDWKITITRT-----GDRQ 127
 AmelOr44 MIGPISYCFGGGLNYAVLLLRKNDIRYCIDHIETDWNAITRT-----QDRQ 127
 AmelOr46 TIGPLSHWVIGGFNYAVLLLRKNDILHCIEHIRVDWNIITKK-----QDQQ 127
 AmelOr49 ILGLPLTHWLVGGFNAYAVLLLRKDDIYYCIKQICADWNIITKK-----QDQQ 127
 AmelOr50 IFGPLSHWCIDGFNYAIIILLRKNDILHCIEHLRADWKLITRT-----QDQQ 127
 AmelOr26 AIGPTSHWLMGELNYCCLLMRAKEIVYCIHEIKYDWKTVRRA-----RDRE 131
 AmelOr53 AFGPAGFCLSSSTIKYCYLGLKGSFIERCIEHMRKDWMMVQDP-----NHRT 134
 AmelOr54 ALGPVSVFVSSSTIKYCYLGLKGSFIERCIEHMRKDWMMVQDP-----NHRT 134
 AmelOr52 LLGPVGFCLSSSTIKYCYLGVKGVFFEQCIKHVKNDWKMVQDP-----SYRI 132
 AmelOr51 FLGLPLTFCLSLFKYSYLGKSSSELGHCIEKHVEKDWKMLQNE-----DHRV 132
 AmelOr55 FFGLIFFSFMMLKMYWALTRKPEIEHCIEQVQSDWKQVKME-----NDRE 130
 AmelOr57 FLGLIFFSFMMLKMYWALTRKPEIEHCIEQVQSDWKQVEIE-----NDRE 130
 AmelOr56 ILGLIFFSFIISLMKYWALTIHKPEIKYCIHQVQSDWKQVEME-----NDRE 130
 AmelOr58 ILGLIFFSFIISLMKYWALTRKPKIKLCIEQIQHDWKQVEFE-----RDRK 130
 AmelOr59 LFGLLSFCLVALIKYWTLLYRSTGLVFNFTSAVKNCVEQIWIWDEQVELY-----EDRE 131
 AmelOr60 LFGLLMFCSIALMKHWALAYRKPPIKNCIEQIQNDWEQVKLY-----EDRE 131
 AmelOr61 LVGLLSFSLIALIKYWTLLYRKPRIKDCIEQIQNDWEQVELH-----EDRK 131
 AmelOr63 ALILINAGLAVTKVICFHVRSGLVSNFTSAVKDYKELNSE-----ENRV 119
 AmelOr64 ALVILINGGILAVAKVMCFHIRPLGLISNFTSAVKDYNELNSE-----ENRV 115
 AmelOr66 ALLLINCILAVAKVMCFRIRPVLVSNFSSAIKDYNELNSE-----ENRV 115
 AmelOr65 ALLLINCILAVGKVMCFRIRPVLVSNFSTGLVFNFTSAVKDYNESNDE-----ENRM 115
 AmelOr67 ALLLINCILAVAKVMCFRIRPVLVSNFSSAIKDYNELNSE-----ENRV 115
 AmelOr114 MG--NITITLSLLKTIAFWINGKPLKSLNLCMANDWIKVTSKT--E-----QE 99
 AmelOr115 I---NIPIVFALIKQIVLRYKALTELLGEMLADWSGPIGDQ--D-----RE 113
 AmelOr118 L---TNSNTLVFIKLIVIFWFKRTFYEILMSMKEDLNNNKHSA--T-----ENKR 105
 AmelOr164 I---TCSNTLLLLKFI I IWFHFRVLFESLII IAEDWDNCKFEW--N-----ME 109
 AmelOr163 L---TNSNTVTFFKLIIILWFNYRTIHNLTIVFEDWNNRALTD--K-----K-KQ 109
 AmelOr165 I---AMPFSLVFIKLVITWLNRYGVFNCDILSTMEKDCQKYAVID-----INN 109
 AmelOr166 I---CLPHSLVCIKLFTAWTQNTLIRNILLSMEEECQKYAIMD-----TDN 109
 AmelOr167 T---TLPYSLLCFKLISFWTKREIFENILIGMYHDWTNAFATD--F-----IVED 111
 DmelOr35a GMPTYLILVEAQFRSLHILLHFELKQKFLIFYANIYIDPRK-----EPEM 126
 DmelOr74a GLPTYLILVEMQIRCFQLAWHKDRFRALLQRFYAEIYVSEEM-----EPHL 127
 AgamOr3 GTAELMFESNAFFGMLMFSFQRDNYERLVHQLQDLAALVL-QDLP-----E-LGE 132
 AgamOr5 GTAELIFEWNVLFGLMLFSLKLDYDLYRYKDISKIAFRKDVPS-----Q-MGD 113
 AgamOr13 GTAELIFQSNFSCGMFWLFLNRHKLAQFITQVTRFSLTVFRE-SPP-----A-VVQ 112
 AgamOr15 GTAELIFQNSFSCGMFLLFLNRHKLAEFIQHARSFSQTVICA-SPP-----A-VVR 112
 AgamOr17 GIAELFFLTNSFSCGMFLLFLNRHKLAEFIRHVTRFSLTVLQE-SPP-----A-VVQ 112
 AgamOr16 GLAELFFQTNRFVGVLLLVLYSDSIFELVRQSEFFAKKVLSE-TSP-----VAE 111
 AgamOr55 GLAELFFQLNFTGLLLVLVSSKQLQCLVRVGGQTIADDEVFQC-AQT-----D-MRQ 113
 AgamOr18 GYTELILETNVVFAGMLQLYLCYNHFVPLVDELRAFAAIVFQDNQPM-----L-LRT 113
 AgamOr14 SMAELAFVGNVFCGMALWSVYNSFRQFIEQVIRLTKYLYRDHHL-----QTVRE 114
 AgamOr51 SMAELVFIGNVFVGAMLLWTEYDAFRQFIEQVNSLTKHFYREDP-----LKE 109
 AgamOr12 GLSELIFFTNI FVGLFCFIAQHRPYRELLNAIESFVNIVYRTSSQOPE-----SLSER 117
 AgamOr19 GLSELIFFTNVYVGGFFCFISQHRHYRDLLNAIDSFVDVYPTAAHPSD-----SPSEQ 117
 AgamOr20 GLSELIFFTNVYVGGFFCFISQHRHYRDLLNAIDSFVDVYPTAAHPSD-----SPSEQ 117
 AgamOr21 GLSELIFFTNVYVGGYCFVQHRHYRDLLDEIQSFVNIVYPTSSQP-E-----SPSER 116
 AgamOr50 GLGELIYFTNVYVGGFFCFVQHRHYRDLLDEIQSFVNIVYPTSSQP-E-----SLSER 116
 AgamOr29 LGSELAFVSYLYCQILGLYFRHSYLYRLVLDLQTCINKQYSESID-----Q 109
 AgamOr53 LIAELVFVYVYLCQIMALYCRRLYRLVDMQLQCIDIPYSEQIE-----S 109
 AgamOr30 VGAEIVYSTYMFLQIALYARRSDLYRLIDTLQKCVENPYDDVR-----A 109
 AgamOr46 SIAEGMFSFNTTTFIMLPLKMDNFEGLLQNLQRFTQIVTVEEDY-----K 110
 AgamOr47 SIAEGMFSFNTTTFIMLPLKMDNLEDLLKNLKRFTIEIVIFNEDY-----E 110
 AgamOr48 SVSELIFAALCYLTI I I LAIKSEPFRAVIRKMEQALELFRDKQDQ-----CSQ 116
 AgamOr49 STAEIFFCYNNYLMMAIFAIRRPQFPEQLIGTVQLLFDKERKFTTD-----SSR 127

AgamOr61 SAASVIASVWGFTTEGLTRICLIELRYGTLASIMSFLNERS-YRQQD-----S 127
 AgamOr62 AAANLLGALGLCSGALLRLLLEIQNYPTVHRLQQFLNDRY-YLRED-----P 132
 AgamOr63 STANILGVMWFFSVVILRVAILEWYPLMLRMQTFLLNNHTSYQRTD-----P 129
 AgamOr60 ALFNVVGTIWMAGAFVRRLLFDR--GLLTRLLEQFLNDRS-FREDE-----P 125
 AgamOr75 LAMDMLCMLSFLVSIILRGTCMRQYLAHINALDRLERRPT-FRIGT-----P 126
 AgamOr76 LALDMLCMLSFLVSIILRSTCMRQYLSHIDALDRLERRPT-FRVGT-----P 126
 AgamOr78 LAMDMLCMLSFLVSIILRGTCMRQYLAHIDALDRLERWPT-FRVGT-----P 126
 AgamOr77 TFAEQFNQFGGILLTLRSVIAIVGSFPRKDTAEFINACK-FHHLN-----E 113
 AgamOr79 TFAEQFNQFGGILLTLRSVIAIVGSFPRKDTAEFINAYK-FHHLN-----E 113
 AmelOr99 CIPHFIASSISAVKLLNLHFNQRQYNILFHFVTKKQQLKSTYELNAL-----DETIM 130
 AmelOr101 CIPHFIASSISAVKLLNLHFNQRQYNILFHFVTKKQQLKSTYELNAL-----DETIM 130
 AmelOr102 GLPHFIAATISAVKILNVFYFRENFDKLFQFVTNEWNKLLNNELHIL-----DKTII 130
 AmelOr103 GLPHFIAATISAVKILNIYFYFRENFDKLFQFVASEWDKLLNNELHIL-----DNTII 130
 AmelOr104 CLPHLIAAATSVMKLLNIHFNRENFKKLFELTKWEKFEELNNQFHVLF-----EEITI 130
 AmelOr98 CLPNLCASLSSVVKILNVHFNRENFNKLLFVVKWEDELKLN-ELHIL-----EEITI 129
 AmelOr100 CLPSLGVCIAMFVKLQNIYNNSENFKLLFTFVAKQWYQLKLNNEIRIL-----EEIIM 56
 AmelOr97 IPIVFIATISCAIKLLNHRINKNFDFLMSKEWEMKNDNRNQCIL-----DEFTK 83
 AmelOr105 NIPQVITVIASMIKILNIYFNQFNKLFYSLAQDWKLLKESKEELIML-----DKFTQ 130
 AmelOr109 QLPYINAGIVTLFKQYNYILNEDKLRRELLHDIVSDRLIERSKEELEIL-----EMYSR 118
 AmelOr110 QIPYLNAAIICLFKEYNYVLNENKLRRELLNDIISDRLIRRSKKEELEIL-----ELYSR 118
 AmelOr111 QLPYLDVGFVLLFKQYNYILNEDKLRRELLNEIISDRLIKRSKEELEIL-----EIYK 118
 AmelOr108 QLPYLNALFILLFKQYNYILNEDKLRRELLNDIIFDRLMVRSSKKEELEIL-----NMYSR 118
 AmelOr107 QIPYIDLGFALMLKQYNYILNEKLRRELLHNIISDRLVKSKEEEEIF-----EYFK 118
 AmelOr112 NLPYSIASFGTFVKMGNYFLDETKLTTILNHLIFEDWATIKSKEEYEIF-----YKYSR 118
 AmelOr113 QSGIATAIFLSLLKEANYILNATKVKSLFNDMYMDWRMDRPKKEFEIM-----STYAQ 118
 AmelOr106 QIPFLIAAAILLMIKYNNFIINEQKFKELFVSIINDWQKKKTHEEEMIL-----EKYAD 115
 AmelOr122 TLSAIFPLLLFFIRYIYYITMFPYVEILFDNIRTEENLLQDTTEIQIQ-----TKYLD 118
 AmelOr125 TLSAIFPLLLFFIRYIYYITMFPYAKLLFDDIRTEEYLLLEDETEIQIQ-----TRYLD 118
 AmelOr123 TFSMTFPVFLCLRYIYCLTLFSYAKVLFDDICIEHLLQDTTEIQIQ-----TKYLD 116
 AmelOr126 TFSMTFPVFLCLRYIYCLTLFSYAKVLFDDICIEHLLQDTTEIQIQ-----TKYLD 116
 AmelOr127 TFSMTFPVFLCLRYIYCLTLFSYAKVLFDDICIEHLLQDTTEIQIQ-----TKYLD 116
 AmelOr128 TFSMTFPVFLCLRYIYCLTLFSYAEALLFDNVHTEHLLLEDTEIQIQ-----TKYLD 116
 AmelOr129 TLSTTFPTLLYCLRYIYCLTLFSYTELLFDNIRTEEHILQDMTEIQIQ-----TKYLD 116
 AmelOr133 -----MEENIIQDSIEAQIR-----TKYIS 20
 AmelOr134 ILSTTCPLIIISLRYICFILFFPMIKYLFHHMRMEENIIQDSIEAQIR-----MKYIG 116
 AmelOr131 ILSTTCPLIILLRYISFIIFFPMVKLLFHHICVEENAVQDLIEIQIR-----MKYIG 116
 AmelOr132 ILSTTCPLIIISLRYICFILFFPMIKYLFHHMRMEENIVQDSIETRIR-----TKCIN 116
 AmelOr135 ILSITCPFIIIVSLRYVCFIVFPPTIKLLFHHMRVEENIVQDLIEIQIR-----TKYIN 116
 AmelOr136 IFSTTCPLIIVLFRYIGLILFFPTIKLLFHHMCMEEAMIQDSIEAQIR-----RKYID 116
 AmelOr138 -----MRMERNMIQDSTEIKIR-----KKYIN 22
 AmelOr130 ILSITCPLVLLRYIGSIACFPPTIKIVFKHIRTEENIVQDSIESQIR-----MKLID 116
 AmelOr137 ILSLIFPLTIIIVRYVSCVIFFSMIKLLFHHMRMGNNIIQDSTEIKIR-----KKYIN 115
 AmelOr139 -----
 BmorOr20 HVYLTIFMFTVTLSRGFSLTWPNPNYHKVVKKFIEMHLLYFK---DNS-----EYAMK 132
 BmorOr3 HVYLTIFMFTVTLSRGFSLTWPNPNYHKVVKKFIEMHLLYFK---DNS-----EYAMK 132
 BmorOr18 HVYLTIFMFTVTLSRGFSLTWPNPNYHKVVKKFIEMHLLYFK---DNS-----EYAMK 132
 HvirOr6 LMYLIFLIGIVDTLTVVCLTFSEKFRVLAKDFLTKTHLFYK---DRS-----KHAME 137
 BmorOr23 HTIITVLMNVVSLRSLILR-CFKKYDVVGQQFINKIHLYHYR---NDS-----EYAMK 132
 BmorOr16 HTIITVLMNVVSLRSLILR-CFKKYDVVGQQFINKIHLYHYR---NDS-----EYAMK 132
 BmorOr4 HTIITVLMNVVS-SRLILR-CFKKYDVVGQQFINKIHLYHYR---NDS-----EYAMK 131
 BmorOr5 HTIITVLMNVVSVSRLILR-CFKKYDVVGQQFINKIHLYHYR---NDS-----EYSMK 132
 BmorOr22 HSYITALMTIVIFSRSVVT-ALGRYRKIARYFVSSLHLYHYK---DIS-----EYALQ 138
 BmorOr17 HSYITALMTIVIFSRSVVT-ALGRYRKIARYFVSSLHLYHYK---DIS-----EYALQ 138
 BmorOr1 STFITVMMNLVTCRSRTALVMLFERYLVLTGRFITVMHLFNFQ---KNS-----DYAYK 134
 BmorOr1a STFITVMMNLVTCRSRTALVMLFERYLVLTGRFITVMHLFNFQ---KNS-----DYAYK 134
 BmorOr1b STFITVMMNLATCSRTALVMLFERYLVLTGRFITVMHLFNFQ---KNS-----DYAYK 134
 BmorOr19 AITITPLGALVGIIKAESAK--AECYVNLKMFMDKVHIHSIYRKNENN-----EFVKK 133
 BmorOr15 AITITPLGALVGIIKAESAK--AECYVNLKMFMDKVHIHSIYRKNENN-----EFVKK 133
 TcasOr5 LVASFVNYMG---AVIFCHKHKNKFLSNIEKCALLQQLRN-----K 117
 TcasOr7 FVWTFVYVWVWIPMALGFIALTVWYFEDILHHDARINENLTLN-----IE 120
 HvirOr4 FMENIASVDTSIGGQYSRVTERKLCGIIILAILIFS-VLIADDFTFYAL-----QAKKL 122
 BmorOr13 YLHRIHKINSDLGTYSSSLTDKMLHRLTIGMLLITSVIIVTDFTFVY-----LADLN 171
 DmelOr10a TLCPGTSAVTLKMLFLRFRQDLSIMWNLRLGLLFDPNWER-----PEQRD 124
 DmelOr33c NLTMSLTVCACSLKHVAHLYHLPQIVEIESLIEQLDTFIASEQ-----EHRY 113
 DmelOr7a SAQVAIDAVILPAKIVALAWNPLLRRAEHHLAALDARCREQ-----EEFQ 132
 DmelOr22c AFCPGTTKAVCVLKLWVFFRSNRRWAELVQRLRAILWESRRQE-----AQR 121
 AgamOr1 ALFVLMTQVTLIYKLEKFNYNIARIQACLRKLNCTLYHPKQR-----EEFS 125
 AgamOr4 NCNIYGGSMFFAYDVATFQAFIQELKSLSVLCSHSYRLKYKLTRFN-----RRAD 124
 DmelOr47b DLVWISGMALVFTKIFYMHLRCDEIDELISDFEYNNRELPHN-----IDE 140
 AmelOr73 KFSLCISVFGVSLKVANLFLQRGKIINIMNSLTKENSIPRDE-----QEE 110

AgamOr68 TQSLICTGAALMIKYFTMIRNPAPVRELSGNIETQMYTKYQEMS-----PEYP 115
 DmelOr59a NLTTTFATCTACSVKCLLYAYNIKDVLEMERLLRLLDERVGP-----EQRS 116
 DmelOr23a SLSLTVTSTLSNLMKFCMYAQLTSMKMEVQSLIGQLDARVSGESQSE-----RHRN 115
 AgamOr31 CLGPTFTAYLGLVRQYNLLHRKSELWSIVDEFAALKHSLQSS-----EIR 109
 DmelOr2a NLTITITDIVANLKFANVVMVRKQLHEIRSLRLLMDARARLVGD-----PEEIS 121
 AmelOr62 AFVMDLSAVISLAKLFI LRNSKHAWVLINSVVEDWSAVHDSRHEYIM-----TEYLK 123
 AmelOr121 NLAYSIPLIITTIKFI VSSKKKVL SLIVNMVAKDWAKLKT DH-----EKD 123
 AmelOr140 GKKITFYIYLYVYTTLFVYLLLP TIPLI IDFITSSNHSQKR N----- 113
 TcasOr12 ASFLLFTNLVQCCKIYTFANHGKVKVNLVYSMNRSDFKPNNLA-----QYW 121
 AgamOr8 LAPCMGFTALS FVKIMTIKLTETKLT DMLHRDLALFPSTVALQ-----QRY 125
 BmorOr9 LAPCICIGVLSVLKILALTA KRQKIYELTQNL ECLHKIILNDTR-----KTE 112
 AgamOr40 DELFLTLITTSIYSILVPLSLYLRLYESNIRQLYEF SQRHFRK-----RSAAG 129
 TcasOr63 SLLYFFTHFTFLCKLLNFQYYSKDLIEIENFLTDPIFYGYSF-----EQLD 118
 TcasOr4 TLLFCMTQAAF LFKLVNFLYHNKTM LRIESILKNPILNCLDQ-----FEKN 111
 TcasOr13 NTDRFVTFSDVVVLPICIIIGVPIASHNIEKTIKYFSFLRQFD-----CCL 130
 AgamOr24 CIATFGFCCQAIMKIYSFII TRQRVVDLYEINHRYYQHMMGQS-----IAVKR 108
 AgamOr54 SFETLLYVGIACIKMYVFIKNRKLILQMHQY MIDFFDHFHGD R-----EQDE 133
 AgamOr23 HHGPSAQGLAKIEAFTCEPELN DLHLYNVARFKAPPRFPEVDEA----- 113
 AgamOr64 TYGSFVIYMLWAILI WVLNHYEHMCELRLFFKNPTYQE QSD-----WAHR 138
 DmelOr82a CLSVVFTNMLTVIKISTFLANR KDFWEMIHFRKMEHQSSHIPRYR-----EGLD 113
 AmelOr116 GLTILMNSTYA AKVIYIICRYERIKNLVDITNSEIFNRDNDK-----YKH 124
 AmelOr160 NITLSFPTLIVLKA VMFRMMHLVLP LLLTVVKRDVNEGLYRS-----AEERR 118
 TcasOr10 IFDTGKPI SLCYGESEGLETPWVEFYIVLQSV EVTIIFLGITG----- 108
 TcasOr26 VIETTAGQFVLYLTLFTLTYRKGILEIYADLSNF TKFGKPYN-----FDK 101
 AmelOr117 IGCVLTTITQVLFKMIYLIARREKTYSLYKIRNLWNSSNDSK-----ER 119
 AmelOr120 TGSTLLTILLAALKSIVWIFNRK KLEFFIEFMLTDYWKI IETN-----VFE 110
 BmorOr7 VMFLLLCHITSVAKQLV FYLDADRIDCL IATLDDPSYNEMSH-----QR 115
 AgamOr6 QAPCIGYCTIGV LKMVILARGRNTIAELVGLFR AKWTS AIVTG-----AHWA 123
 DmelOr45a NFVAVFMQGSQSTFKFLVMMAKR RRIGSLIHR LHLKNQAASATP-----NHLE 110
 DmelOr67d ALAMVGSVAVQGLTKLLV TANNASHMRE VQNTYEDIYREYGSKG-----DEYAK 123
 DmelOr83c ASLMTGGLFHGLGKFLTCL LKHQDMRRLVLYSQSIYDEYETR GD-----SYHRT 119
 AmelOr162 PLAFRVEYFVDVDKYYYLLLVHSSIGTLGYTVIVLAIN SIIIVYVLHE-----CGLCE 125
 HvirOr3 FITGMTAAVIGAFSLLALLEGTMSVEAWLP FDP----- 52
 TcasOr20 NFVALSALFAVIYVSVCF INRKHKIRALIADLALFET FSSKA----- 108
 AgamOr11 NAATTLFSTTIFRIIFFYFHRARFTSIIKAAHDGIERILKDG---W-----TDEQS 126
 DmelOr56a SYATAVQYFAVSIAMFNAYQRDKVISLLRVAHSDIQNL MHEAD-----NREME 126
 AgamOr28 VLVPI TEILLTNGKMI ICNVKRGKI INLINQVQVAWDEGAKSEHLEIQ-----TLITT 143
 AgamOr58 MSFVTMTGAMCIVIWLSLAAFRDLTGTVKFLQHRQCTIHRQS----- 122
 AgamOr59 VSGGITVLVAVLLMLIFTVHYDAFQQ LGTFLNDRAFARDHP-----LATG 132
 DmelOr1a ALMHGLQMVSSLLKMAIFLAKSHDLVDLIQQIQSPFTEEDLVG-----T 115
 DmelOr13a NCCTTFMGV LNFVRLIHLRLNQRKFRQLIENFSYEWIPNSS-----KN 122
 AmelOr161 CALICTAFYLCVVRLLVYSFHQKDMLYV VNTMKEDWLS SSSDQD-----RL 119
 AmelOr141 SVAMIISIVG GHARYTILLWFRDICTQMLNVCEIFWSNLKPH-----EKK 114
 AgamOr52 LLCGQFALTSIVARYMLLLRSYAQLQPIQRHLNEQRFLRGHPR-----AHA 101
 AgamOr36 YGNTFGVLTMM LARMLVVRWYLP HVRQLMEYLRQRGR IEPAP----- 129
 AgamOr25 CFSTSAVALEIAIRMGLLVHQR ELRNETIEIIRQQQKV TARFH----- 107
 AgamOr45 VLSVAGCGWQMF FRMYFYLFQQDR CRQIVQEV RDQRTVY GADR-----NPRME 119
 TcasOr3 ALRDIGNHVS LAYKAFNYFIMRRDILKLMETLQHGNHYH YEDCGDFQPK-----LIVDE 129
 DmelOr88a NPPVLSIT IYFSIRGLM LYLKRKEIVEFVNDLDRECP RDLVSQ LDMQM-----DETYR 132
 AgamOr22 SVSFAVS AFELMLKINGMVYRRKQIAAMLRTVLSDRSSLNGP-----IEAV 124
 DmelOr49a QGLHFFYMLSSQLKFI TFMINRKRLLQLSHRLKELYPHKEQNQ-----RKYEV 123
 DmelOr85f RYATLVTYI INSDTKFATV LQSAIQSLNSKLAELYPKTT LDR-----IYHRV 122
 AmelOr119 MCILAITVFAD IYTNMDNLSITTDG CIFAGIFVVI FKAMNLQ-----IQLES 134
 DmelOr63a TSI AKMWFYFLFAHRQIYELLRKARCHELLQKCELFERMSDLPVIKEIR-----QQVES 138
 DmelOr67b AVLLTFQLSVGVV KMFHFQNKVESC SQLVFSTETGEV LKSLGLFQLDLPRK KELLSSVSL 139
 BmorOr21 HSTVIGPF IGGFVKVALMYKRRQAN ELVSEINRDHLAYNGLKG-----EDREI 120
 BmorOr11 NGTIAMLSFTTTFKY SLLLYLQKSLNRLIAKIDMDYEIAKGLP-----PQEKA 119
 BmorOr12 VIVIGISNPMAYIFCIN FIRNRNEIKDLFYHLAVVLKIYYND-----VE 125
 AgamOr33 ASCLMVNVR IYGILVQEFTIFEDGLRLIFYSTQC SLGTLFQRR-----NA 115
 HvirOr1 LIGQMFMVAVLCVNKLAKSNVSLNGTSPVIFVYTTCVTMMLFFQVARRWPALVQHISKAED 139
 HvirOr5 VDRTLKCRMTFVAGLMTFFSIFEHAMSILSSVGLDCPPSLILKR----- 98
 TcasOr1 NFRHSVRSVFFLSEIFGLVNLKYRETYFRLSKTKT FCTLVTA----- 103
 TcasOr2 AIIIMILSGC IIFTEGIWICSLIHRKKIVKFLDGIMAFDIQLK-----QV 124

 TcasOr16 ALKKMRLLYIIIIWTSFSAIAWGTITFVGDSVHN IKDPENENLTIT EP-----IPRLLV 182
 AmelOr2 AVKKM RILLLAVIGTTVLSAISWTTITF IGDSVKKVIDPVTNETTYVE-----IPRLMV 179
 AgamOr7 ALAKMRKLLVLMATTVLSVVAWVITFFGGSVKTVLDKATNETYTVD-----IPRLPI 179
 AaegOr7 ALAKMRKLLVMVMTTVLSVVAWITITFFGDSVKNVFDKETNETYTVE-----IPRLPI 164
 DmelOr83b ALAKMRKLLFVLVMLTTVASATAWTTITFFGDSVKMVDHETNSSIPVE-----IPRLPI 181

BmorOr2 SLSKMRLLYFICGMTVFSVISWVTLTFFGESVRMIASKETNETLTEP-----APRLPL 182
BmorOr2a SLSKMRLLYFICGMTVFSVISWVTLTFFGESVRMIASKETNETLTEP-----APRLPL 182
HvirOr2 ALTKMRLLYFICGMTVLSVISWVTLTFFGESVRMITNKETNETLTEV-----VPRLPL 182
AgamOr56 --LEIQTILGHVTKSTHKLTKYYCSTVSNCAAYGLFP-----ML 151
AgamOr57 --LEIQTILGHVTKSTHNLTKYYCSTVSNCAAYGLFP-----ML 151
AgamOr26 --LEIQTILGHVTKSTHKLTKYYCSIVSNCAAYGLFP-----ML 151
AgamOr27 --PEIQGILGHVTKSTHNLTKYYSVVNFNCAAYGVFR-----ML 151
HvirOr9 ----REDLIDKHVLMMLTSSITKKISYILIGMGLLMFALAP-----AF 160
HvirOr7 ----KEEIIASETGFLNKVINLVLYVLNCSMIVVDMTP-----MI 136
DmelOr85b -----LPMYLGTCRSRISLIYSLLYSVLIWTFNLFC-----VM 148
DmelOr85c -----LDRYLRSCRSRISITYALLYSVLIWTFNLFS-----IM 147
DmelOr85d -----IGHHLSGYSRYSKFFYFGMHMVLWITYNLYW-----AV 169
DmelOr67a -----VKSWLKRCHIYTKGFGGLFMIMYFAHALIP-----LF 161
DmelOr67c -----LPDFEKTMRKVINIFTFLCLAYTTFFSFYP-----AI 160
DmelOr92a -----VSFYRKHMMNRVMTLFTILCMYTTSSFSFYP-----AI 165
DmelOr69a -----CQHYFDMAMTIMRIEFLFYMILYVYNSAP-----LW 156
DmelOr69b -----IHYYQEKYTRHINTFIFHTSAVVYNSLP-----IL 156
TcasOr6 -----LHKFLRRFFLLYTGNLALCTQFAVTAFFDD-----QFKSV 129
TcasOr11 -----PHKLLKAFFFAKYLIMILMALQYILRKFSVK-----NGKPL 146
AgamOr41 -----LQWYTRLFQRAVDGYTLVFIGTVAAGLL-----PL 147
AgamOr42 -----LAKYTDLFCKSVQLYTVCVLSVVVLTLM-----PF 153
AgamOr43 -----LLLLMNRICLLRKLITSQFSISILTLMT-----PV 148
AgamOr44 -----LLLLMNRICLLRKFITLQIIGCILVLSLN-----PV 148
AgamOr66 -----VARIIDLLVLVTKAISVLYTSSLFIFSLY-----PA 146
AgamOr67 -----ITRIIDLLVMTKAISVLYTSSLFIFSLY-----PA 146
AgamOr72 -----LRRTGRILWIVYRMSASYIFAAVAFGLY-----PA 147
AgamOr73 -----LRRTGRILWIVHRLMSASYIFVAVAFGLY-----PA 147
AgamOr71 -----LRHTGRILWIVYRIMSASYIFAAVAFGVY-----PA 147
AgamOr74 -----LRHTGRILWLVYRMSASYIFLAVAFGMY-----PA 147
AgamOr70 -----LKQTYILWFFFRFVTTLATIVLAFGLY-----PL 147
AgamOr69 -----LQRTGRILWFIFRFMRTSVSSAAFGLY-----PV 147
TcasOr9 -----MEKSSKLSDKFVYWFNCIASSLMPMIAS-----LLGG 34
TcasOr18 -----MDQASELSDKLAYVWVSSLAVGSVVPVLA-----IATG 139
DmelOr83a -----MAGSYRMSKLLWIKTYVYCCYIGTIFWLALP-----IAYR 172
DmelOr85e -----SHAAFRMSRNFVWVWMSCLLGVISWGVSP-----LMLG 181
TcasOr24 -----EVNRKLEWCTRMVFGYCVFSGSVFYNLVK-----ILAI 149
TcasOr25 -----KVRKRMMDLYAHLIFFYSMFGSFVYNDK-----IILI 149
TcasOr19 -----KVNKRLDFLVKVFVSYAIFGAVVYNLMR-----IIEI 114
TcasOr22 -----KRSRRLDFYAKLYSYCYFGIVYISLLQ-----IIEI 143
TcasOr23 -----KRSRRLNFYAKLYSYCYFGIVYISLVQ-----IIEI 143
AmelOr168 -----TISTTKMLEKPSRIYIIVNVISIIWISSP-----LIKL 147
AmelOr170 -----IIDTVKPLEMPLKIYVIASVASLMIWILSP-----LIKL 147
AmelOr169 -----TIGTVKPLEKPLRVYIIASVGLMIWASLP-----LAKI 149
DmelOr65b VEYQTGKRWFVMAFFLATSWSFFLICILLLLITSP-----MWHVHQQNLPHFA 159
DmelOr65c VDYRTAKRWYFTLAFFLASSWLVLFCIFILLITSP-----LWVHQQILPLHA 159
DmelOr65a KEVQETKRLHFLFMALIIWFSFLILFMLIKISTP-----FWIESQTLPHFV 190
TcasOr17 LVEPSIKFWRQFYLIIFRVLCYCTFFWSSYPILDKW-----TKDHRLPFL 161
TcasOr21 LIQPSLKFWKLLYNLHSLVGGATLFWILFPIVDK-----KEKRLPFL 159
TcasOr56 IVNDAITMCNRQGYVFTLVFLIIGARLLYASLANWPKHNYFDGNVTVIIVNTKEMPYT 184
TcasOr15 IVTSAINMCKRQGYVFTLVGVGTGGQLYAALANLPYDKHNYFDGNVTVVVNTKOMPYA 182
AgamOr9 IPLASARKKSTIFWVLYFMFSDGLVTEWLVISLLL-----TTLIVP 175
AgamOr65 MPLVSARKKSTIFWVLYFMFVGLATEWLVISLSL-----TTLIVP 179
BmorOr6 TIFSHSR-TVKNLYKGVLTGFTLVQWTVLSLIG-----SERTLPFNE 156
BmorOr10 ILILKAR-KIKRLCMFFLVNAVTTCSLWAVIPLLDI-----SSKMLPF-K 155
AgamOr34 LQQRRLAVFNRWYAYIFVSH-MAAFGTGS---HLL-----SAEYRMPFF 156
AgamOr37 LHRKGVASINRYLYPLVTN-LAVASSCL---YLL-----QDDYRLPYF 168
DmelOr94a FWRREQRFKWFYIYILISLGVVYSGTG---VLF-----LEGYELPFA 164
DmelOr94b FWQONQRNFKRIFYWYIWGSLFVAVMGYIS---VFF-----QEDYELPFG 161
DmelOr71a MWRFEHRRFNRFVFMFYCLCSAGVIPPVIVIQ---PLF-----DIPNRLPFW 157
DmelOr46a IFAAACERSRKLDFYGLSFAALSMILIP---QFA-----LDWVSHLPLK 156
DmelOr46b MLELDRVAVRMRNSYGIMSLGAASLILIV---PCF-----DNFGELPLA 156
HvirOr8 VIEKAKKFNKLYWNIILAVSFACASNLFPPPIAHF-----ILGTLELVP 157
BmorOr8 IIQKNNAYKTYWKLAYILSNFAYSSQVLGPLIVKLV-----IWKTKLELP 159
AmelOr68 IQKSFDKNIGSITIYYTVMVEFTVFCMIVSS-LVTD-----FRNQRLAYE 155
AmelOr69 MRDKCDKQARLNAIYYAILVELSVMSLSFGG-LLK-----AESKLPYR 153
AmelOr70 IRTKFNKMNERTSICYTILVLVSATWIFVRS-FFTD-----FKKRKLTFR 155
AmelOr71 IFLKFEKLTWNTLGYFILLMSSSLCILMGS-LLAN-----FKIRKLAFR 155
AmelOr72 IHTKYNKLEKVSIFYTTLQNVSLVALIGAT-LITD-----FKKKKLTFE 155
DmelOr19a IIMAG-IERAEFIFRTIFRGLACTVVLGIIYISASS-----EPTLMYP 159
DmelOr19b IIMAG-IERAEFIFRTIFRGLACTVVLGIIYISASS-----EPTLMYP 159

Dme1Or33a YFNQNP SRVARMLSKSYLVAAISAIITATVAGLFST-----GRNLMYL 154
Dme1Or33b FFNQNTREANFIWKSFIVAYGLSNISAIASVLFGG-----GHKLLYP 156
Dme1Or22a TVHRYVAMGNFFDILYHIYSTFVVMNFYPFLERR-----HAWRMYP 174
Dme1Or22b IVHRHVALGNFCYIFYHIAYTSFLISNLSFIMKRI-----HAWRMYP 174
Dme1Or42b KIHLVVARSNHAFLIFFTVYCYGAGSTYLSVLSGR-----PPWQLYN 171
Dme1Or59b RIHNMVARCNYAFLIYSFIYCYGAGSTFLSYALSGR-----PPWSVYN 172
Dme1Or59c IFHKMVARVNLIVILFLSTYLGFCLTLFTSVFAGK-----APWQLYN 174
Dme1Or98a EVHQGVVRCNKAYLIYQFIYTAYTISTFLSAALSGK-----LPWRIYN 169
Dme1Or42a QIHRAVLSNRIFFFFMAVVMYATNTFLSAIFIGR-----PPYQNY 174
Dme1Or85a QVHRAAALCNRVVVIYHCIYFGYLSMALTGALVIGK-----TPFCLYN 172
Dme1Or43b KVRDMVATITRLYLTFVVVYVLYATSTLLDGLLHHR-----VPYNTYY 171
AgamOr2 VLERYTRRGRMLSISNLWLGAFISACFVTYPLFVPGR-----GLPYGVT 151
AgamOr10 LVSTYTKRARFLSISNLALGAFISGCFVVYPLFTGQR-----GLPYGMF 152
Dme1Or30a LVKETTRLSVLISRINLLMGCCCTCIGFVYTPIFGSR-----VLPYGM 157
Dme1Or49b ILDQVNKVGKLMARGNLFGLMSTMGFLYPLSSSER-----VLPFGSK 151
Dme1Or43a ILRRAEREARNLAILNLSASFLLDIVGALVSPLFREER-----AHPFGLA 155
AgamOr32 RFVKCSELHAKLLRAYVIGTSIVLLLYELNAIVASIT-----LSLQON- 151
AgamOr35 LFRRS GAFHAKLTKIYMTSALIVGWFIYLSAIVSGIS-----RSLAEG- 150
Dme1Or47a ILNAANKQDQRMCTLFRTCFLLAWALNSVLPVLRMGL-----SYWLAG- 153
Dme1Or98b IVTRESRRQFISAMYAYCFITAGLSACLMSPLSMLI-----SYHEQV- 155
Dme1Or9a IIEVENQSDQMLSLTYTRCFGLAGIFAALKPFVGIIL-----SSIRGD- 165
AgamOr38 YTNRITARDQITTKVLFHSSFITAILYGIIPYFMAY-----NWFQGGY 171
AgamOr39 ITKQLTTLGQQFTFYLFLLMFFAACLYGVTPEFIMIY-----NRVQGGY 172
Dme1Or24a YKKRFYTLATQLTFLLLCCGFCSTSTYSVRHLIDNIL-----RWTGK- 152
Dme1Or45b AQRSYYLMVTRCGMLVFTLGSITTGAFVLRSLWEMWV-----RRHQ--- 164
AmelOr74 LFGECQKFCRLWIIVSMISQS-SLAFYIITPIYENI-----GKNKSER 159
AmelOr86 LFTKCRKFCFLWTLTVFSFTA-SLTFYIITPICANI-----GKNKSER 159
AmelOr75 IITGCKKLCNFSIVLIIFCAQG-TCAGYMTPLIENI-----GKNESDR 159
AmelOr84 ILAECKRICTIFVVVISFCAQG-TCTGYMITPIIANV-----GRNESDR 157
AmelOr87 LLQNCKRISMLCITLINCAQG-TIVSYVLTPIVENI-----GRNHSDR 174
AmelOr76 IMNKCQRTCNLYLVFVFTFFAQG-TVLGFILRPILVNR-----GKNESDR 159
AmelOr85 IINTCKRYSTFFVCIFFTSQ- TVFSFVIRSLKENI-----GKNETER 161
AmelOr88 IIDDYRRLCSFLVCSFTFFAQG-TVVCVFITPVFVNN-----GKNESDR 160
AmelOr91 IVFGCKRKCTFFICFFTFFTA-TIVSYIAGPIIGNI-----GKNESDR 158
AmelOr92 IVIGCNQKCTFFICFFTFLLIA-TTASYMVIPLVNI-----GKNESDR 155
AmelOr95 IVLNCKRKCTFFCSSLTFTTLA-TVVSVINPLVANI-----GRNESDR 156
AmelOr93 MIG-CNZKCTSSSVSRFSRWRPLLLTSSVRLLVKNI-----GKNESDR 144
AmelOr77 IFTNCRQCIIFVCFLTFSTKG-TLVCYIVSPLVENI-----GKNQSER 160
AmelOr94 I IADARQLCVYFVCFVFSFQS-TVFSYMFMPMISNI-----GKNESDR 159
AmelOr96 IVKDKRITAYFVCILTFSSLS-SIFTYMFRLPLTNI-----GRNETDR 159
AmelOr79 ILDDCKKICIFFISSVTTIGIC-AIISYLMTPFVAQS-----GSNESER 159
AmelOr83 ILDDCRKTCIFFISSVTTIGMC-TVMSYLTTPVITQS-----GSNESER 159
AmelOr80 ILDDCRKTCIFFVSCVTIMAIC-AMICYIMIPFIAQS-----GKNESER 159
AmelOr81 ILDDCRKTCIFFVSSVTMAIC-AMICYLMIPFIVQS-----GKNESER 159
AmelOr82 ILNDCRKTCTIFFVSLTMMVIC-AMISYLIIPFIAK-----GNNESER 158
AmelOr78 ILDDCRKTCIFFVSSLTTIGIC-AMLSYLMTPFAIRS-----GNNESER 159
AmelOr89 ILENCKRTCAFFVSLVTAIGIC-AILSYLATPLIVQT-----ASNNSER 160
AmelOr90 ILNGCKKTCAFFVSTVTFIGIC-AILSYLTTPFTARI-----GNNESER 157
AmelOr142 LQRYVDRYKYFHSFYILWSFLT-----TIFVIC-----GPLYTVQ 153
AmelOr146 FQGYAKSYATFYGVSAIWFYWC-----ALIVVV-----GTLFISD 153
AmelOr148 LCIYVKKCNIFYGGTIVLTYGA-----ATVFVL-----GPTFLPI 151
AmelOr158 LCMYVKKCNIFYGGTIVLIYGT-----ATVFVL-----GPIFLPI 151
AmelOr147 MCAYVAKCNIFYGGTIVLIYTT-----ATVFIL-----GPTFLPI 151
AmelOr150 FHKYIKKCYTFYGCIIICMYLT-----GLAFII-----GPAFSPA 153
AmelOr151 FHKYIEKCYTFYACSITCMYLT-----ATAFII-----GPAFSPA 153
AmelOr152 FHKYIEKCHIFYGCSIACIYLT-----ATVFVI-----GPVFSSA 153
AmelOr154 FYKYIEKCHIFYGSSIAFSYLA-----ATAFML-----GPAILPI 153
AmelOr155 FSKYIEKCHIFYGSSIIFSYLT-----STAFML-----GPIILPI 153
AmelOr157 LRAYASKCNTLYGASIASIYVC-----GTSFIF-----APLFLPN 150
AmelOr156 IQKYVSKCYILYGSIIISYLT-----TIFIL-----GPIFLPI 153
AmelOr153 FQKYIAKFKTVWGCNITCMYLT-----ALAFII-----GSVFIST 143
AmelOr144 LQGYINRYKFFSTVSMGYILP-----ASSFIL-----MPLFSAQ 154
AmelOr145 LQGYINRYKFFSTVSMGYILP-----ASSFIL-----TPLLSDK 154
AmelOr143 LQGYVNRYKFFSTVSMGYIST-----AISFSL-----MPLFSAQ 149
AmelOr1 VMMNTAKIGRFFITIVYLSLSYTGALPYHIILPLIS-----ERIVKED 167
AmelOr3 VMMNTAKIGRIFTIVYLFYGGALPYHVILPLIS-----ERIVKAD 172
AmelOr6 IFVTNSRIGQRIMLIIAIVITYSSGLGYRMVLP LLK-----GKIVLAN 159
AmelOr7 IFVTNSRIGQRIMLIIAIVIMYSSGLGYRMVLP LLK-----GKIVLPN 159
AmelOr4 IFVMNSRIGQRIMLIMAFIMYISGLGYRMVLP LLK-----GKIVLPN 161
AmelOr5 IFTANSKMGQKVMLIVAVTVYSSGLGYRMVLP LLK-----GKIVLPN 161

AmelOr8 IFSERASIEHKLTMIVAITTYGGGFLYRAILPLSK-----GRIVLPN 163
AmelOr9 IFSAKASIEHKLTTVIAITTYGGGIFYRMILPLSK-----GRIVLPN 163
AmelOr11 IFSERASIEHKLTTVIVVTMYGGGFFYRTILPLSK-----GKILLPN 161
AmelOr12 IFSTRASIEHKLTMVVVVTMYGGGFFYRAILPLSK-----GKIVLSN 163
AmelOr10 IFSRTASVEHKLTSIIAITTYSGGFFYRMILPFSK-----NKIVS-N 162
AmelOr14 IFRAKASFGHRVMSMIAIVTYSAGLGVRTILPLSK-----GRILLPN 163
AmelOr15 IFRRKASIGHRLMSVVAIIMYSAGLGVRTIPLSK-----GRILLPD 164
AmelOr13 IF'TTRAYIGHKMMIAIAIAMYSSGVGYRMILPFLK-----GRILLPD 155
AmelOr16 IFRSKMKIGRRVVLIAAFTMYGGGLCYRTILPLLK-----GTVITAD 166
AmelOr17 IFRSKAKIGRRVVLVVAFTMYGGGLCYRMILPLLK-----GTIVTAN 166
AmelOr18 IMLENASFSRRLIVICGTFMYGGVIFYIYIALPLTRA-----KIVEEGG 175
AmelOr19 IMLENASFSRRLIVICGAFMYGGVVIFYIYIALPFTRA-----KVVEEGG 175
AmelOr22 IMITNANFGRRLVICTFFMYSGFAFYIYIAVPI SVG-----KILAEDD 176
AmelOr24 IMITNANFGRRLVVICTFFMYSGFAFYIYIAVPI SVG-----KIPAEDD 168
AmelOr20 IMIMYANFGRKLV MVCTFFMYSGFAFYIYIAVPI SVG-----RVKT--D 172
AmelOr25 IMIEYANYGRKLVLICTFFMYSAFAFYIYLVLPFSVG-----KIED--G 167
AmelOr29 IMITYANYGRKLAFICFFMFLCAFIFYFLIQPFGGG-----KIVD--G 168
AmelOr30 IMIEYANYGRKLALISIFFVFLCAFVIFYVPI SVG-----KIRD--E 168
AmelOr21 IMLMNAFGRRLIIVTTTTVYSGVFFFYIYIAIPMKIG-----KIPAPDA 168
AmelOr23 IMLMNAFGRRLIIVTTTTVYSGVFFFYIYIAVPMKIG-----KIPAPDA 168
AmelOr35 IMMENARIGRSLAIFCAGFMYSGGFFYTTVMPLCT-----KRTEIID 173
AmelOr27 TMLKNAKFGRYVAASCAIFMQGGILCFCFVTILTTE-----TIQVONE 169
AmelOr28 VMLKNAKFGRYVAASVSAAILQSGVNCXCMTISRTE-----LIQIGNE 170
AmelOr33 VMIKHAKIGRYISMMCAAFMQGGVLSYCAVTAFASTQ-----TIEIGNE 171
AmelOr34 VMIKHAKIGRYITMFCAAFMQGGVLSYCAVTAFASTQ-----TIEIGNE 171
AmelOr32 IMMKHAKIGRYIAVFSAAF MQGGVLSNCAVTAFASTQ-----TIEIGNV 170
AmelOr31 VMMKYAKIGRYIAALCAIFMQTGVLTICYVTAFASTR-----LIEIGNE 170
AmelOr36 VMLKNAKIGRIISCCIVGFMQLGTFCTILGVFKR-----TIKIGND 170
AmelOr37 IMLKNAKIGRIISCCILAFMQVSAVCFCTVLGVFKR-----TIKIGNE 171
AmelOr38 VMLKNAKIGRIISCCIVGFLQIGTFCTILGVFKR-----TIKIGNN 171
AmelOr39 IMFKNAKIGRIISCCIAAFVQISAVCFCTVLGVFKR-----TIKIGNE 171
AmelOr47 VMLKNAKIGRIISCCIVCFMQIGTLCTILGVFKR-----TIKIGND 170
AmelOr48 VMLKSAKIGRIISGCIAGFMHIGTFCTIVLGVFKR-----TIKIGND 170
AmelOr40 VMFKNAKIGRIISGCIASFVQVSTICFGIVFGVFKQ-----KIKIGNE 170
AmelOr43 VMFKNAKIGRIISGCVAGFLQLSTISFCTVFGVFKR-----RIKIGNE 171
AmelOr45 IMLKNAKIGRIISCCFAAFMQFSTVIFCAVFGVFKR-----TIKISNE 170
AmelOr41 VMFKNAKIGRIISGCIQSFLQFSTISYCTVFGVFKQ-----TIKIGNE 170
AmelOr42 VMFKNAKIGRIISGCIQSFLQFSTISYCTVFGVFKQ-----TIKIGNE 170
AmelOr44 VMLKNAKIGRIISGCIAGFMQLDSICFCTVLGVFKQ-----TIKVGNE 170
AmelOr46 VMLKYAKIGRYIAAFCTAFLQGGVLTCTIALGAFKT-----TIKNGNE 170
AmelOr49 VMLKNAKIGRYVAVFCTVFLQGGVFTCTLALGAFKK-----TIKVDNE 170
AmelOr50 VMLRNAKMGRYIAAFCAIFMQVIIFFTCFILGIFKR-----SIHIDNK 170
AmelOr26 LMIKNAKLRGFIACIAALCMHSGIMS YTVTITGFKKI-----TFQIGND 174
AmelOr53 IMLKYATISRKLITMCAVFLYTGGM SYHTIMQFLS-----KGKNK-D 175
AmelOr54 IMLKYATISRRLITICAVFLYSGGMSYHTVMQFLS-----KGKN--- 173
AmelOr52 IMLKYATISRKLIIMCAVFLYTGGM SYHTVMQFLS-----KEKD--N 172
AmelOr51 IMSRYVIMGRNLITLCAAFMYTGGLSYHTIMPLLS-----KRKV--E 172
AmelOr55 LMLKYGIIGRNLTIYSILFMYISGIMYISFMQYAM-----RLQINND 172
AmelOr57 LMLKYGIIGRNLTIYSILFMYLSGIIYVSI MQYAM-----GSQINEH 172
AmelOr56 LMLKYGILGRNLTIYSILFMYMSITYSIMSIQYAM-----GLQFNEH 172
AmelOr58 LMLKYGIIGRNLSMYSIVFMYSGGIIYHTVMHYKL-----GSYVDEY 172
AmelOr59 MMLKYGQMGRNLMIIICAMFYTGGTIFHTILQYKV-----GTFIDEY 173
AmelOr60 MMLKYGQVGRNLTIIICAVFMYTGGIYHTILQYEI-----GTFIDEY 173
AmelOr61 VMLKYGQIGRNLTIIICAVFIYTGGSIFHTILQYKI-----GTFIDEH 173
AmelOr63 IVRRHAYMGR AACISLIFCSYVGTFLMIVP IVAGDK-----EEVINVT 163
AmelOr64 IVRRHAYMGRVACASLIFCSYVGTFLMIVPMLAGDE-----EEVINVT 159
AmelOr66 IVRRHAYMGRVACASLIFCSYAGSTFLMIVPMLAGDE-----EEVINVT 159
AmelOr65 IMRRHAYMGRVACTSLISCSYVCTFLFITV PMLAGDE-----IQVINAT 159
AmelOr67 IMRRHAYMSRVACASLISCSFIASSTFLMIVPMLTGDK-----KDIINVT 159
AmelOr114 TMARIASITRNTIIKSTVMCHTVVAFYVFLRYISMKY-----NENK--- 140
AmelOr115 TMLRNARLSRAISIVCSTLTLYFMLLAFVSLQVWSNAE-----NASSETDL 157
AmelOr118 IIMDKSMLSSRISNFLISYFAITFFLYS-----GVAL-----VIFDED- 143
AmelOr164 IMMQKAILSRYIAKMLLIIFICSIFMYAVSTFFGPDI-----GASHSD- 152
AmelOr163 LMVDNTRLSRISNFLFGIYSVTCILYS-----ASIAL-----ISDDIDN 149
AmelOr165 LISKTGQISFYTTTIVMSSYLVSAAFYITGTLAF-----QRTNS 148
AmelOr166 LISKTAYLSYRLTSTIICTCVASTVCIYAGIFSH-----QEVNV 148
AmelOr167 MIKKT-ELAYCSNLILSIYIAVFLYVGVFLELSD-----HDQENRS 154
DmelOr35a FRKVDGKMIINRLVSAMYGAVISLYLIAPVFSIINQS-----KDFLYSM 170
DmelOr74a FASIQRQMLATRVNSTVYLLALLNFFLVPTNVIYHR-----REMLYKQ 171
AgamOr3 YLISVNRVDRFSKIYCCCHFMSATFFWFMPVWTTYSA-----YFA-----VRNSTEP 180

AgamOr5 YLVRINHRIDRFSKIYCCSHLCLAIIFYWVAPSSSTYLA-----YLG-----ARNRSVP 161
 AgamOr13 HLTTQHDFIHKITRIYCIIVVMFAAHFYVLTPLLSTFYA-----FYG-----TVRNDNVT 161
 AgamOr15 HLTTQHDMIHKITRIFCIIVVMFAAHFYVLTPLLSTLYT-----FYG-----TVRNKNAT 161
 AgamOr17 HLTTQHDFIHKITRMYCIIVVMFAAHFYVLTPLLSTLYA-----FYG-----TVRNENAT 161
 AgamOr16 YLTKMDTQVTKITKLYLTALLVPAFYSYSPIVATLWK-----YYN-----TYEN-DTV 159
 AgamOr55 LLTSHHKRMHTWTRYCYLVILYTVSIFATAPICATFWS-----YVR-----AAHR-NTT 161
 AgamOr18 NLTDLNLRIHKYTLCYCLYMCCVCTVYCVAPLGSNIAG-----YTAAMADTASNSSTT 166
 AgamOr14 QLLQFNHRIHRYTNRYCFSMMLIVFYLVAPVITSFGV-----YFQSVWQSHHDTNDT 167
 AgamOr51 HVLQFNLYLHRYTNRYCFSMMLIMFYLAAPVITSFVV-----YFQSLWKSZYHLANGT 162
 AgamOr12 TLIKLNVKINQISVVYCYVVAFAFTYWIAPCLITYLS-----IHKEQDIAGNGTMNA 170
 AgamOr19 ILIKFNVKIQKLSVVFWCWYIAVTATFYWLAPCLMTYRS-----IYMASVSVENGSVQS 170
 AgamOr20 ILIKFNVKIQKLSVVFWCWYIAVTATFYWLAPCLMTYRS-----IYMASVSVENGSVQS 170
 AgamOr21 TLIKLNVKINKISVLYCWYLAAGLIYWSTPCLMTYHS-----VLKAKAEYGPN--HP 167
 AgamOr50 TLIKLNVKINILSVLYCRYIVVAAFYIYWMVPCVVYYS-----IHKAEVSMGNESIQS 169
 AgamOr29 FVIKSNTKINKLSVTCKYFTIAYVLYCAMPPIASTVV-----YVRNQR-NKTAPEEE 161
 AgamOr53 FLIRSNVKINQSSAAYARFFMVCVYVLYCTMSPLASGFV-----YIRNQR-NATGVQED 161
 AgamOr30 FILITRDTINKSSVMYSKCFVAVCIYSIIMPFMATSAV-----VVRNRR-NQTGEREE 161
 AgamOr46 QILISLNTTIHKFTKFFYIFTNGVVSITGSTIAGMLY-----TYYTKD-SEYSAAFP 162
 AgamOr47 QILIRLNTAIHKFTKFFYIFTNGIVFAMTSSTIAGMFY-----TYYAKD-SEYSAAFP 162
 AgamOr48 LIIEVNANIHRFSLGYAKLNLLYVLLFNVIPIINYPR-----YFLQWRMPEDNRTVE 169
 AgamOr49 YVVYVNRQIMRYSRLYIIVQVYFLIFNLLPAIVTYS-----YFASS---GDGEPVE 177
 AgamOr61 LVRQQRATLFGENNRIQLILVATMLMEAIWFMTTQLFS-----RDAFMLQVNGHVVD 180
 AgamOr62 WARTERSKLYRHNNRFLVLSAISVLESCLFLARLLLT-----RPEFMLQYGGAVLGG 185
 AgamOr63 WAVGRRARFYRRTNRVILTMVGINLAETVCFATNVMK-----LDEFMLQFRGAIVGG 182
 AgamOr60 LVRAARQHVQVQNNRYLFAVCLTLVLEASIFSGTNLML-----QPEFMMLYQGHAVGG 178
 AgamOr75 YADESRRNVALQNSRYLGVALVFHSLTVTVYVIQNMVR-----ENSFVKIITSFPIDL 179
 AgamOr76 YADESRRNVALQNSRYLGVALVMHSLTVTMVIQNMVR-----ENSFVKIITSFPIDL 179
 AgamOr78 YADESRRNVALQNSRYLGVALVMHLLTVTVYVIQNMVR-----ENSFVKIITSFPIDL 179
 AgamOr77 RAEEIRAGSIHNAGRFLSTLLAVQIVTLIFWFVLTTELQ-----AHRQDVLLPIFIYLP 166
 AgamOr79 RAEEIRAGSIHNAGRFLSTLLAVQIVTLIFWFVLTTELQ-----AHRQDVLLPIFIYLP 166
 Ame1Or99 QGKKMAQLYRNTLFSFLILFLLVPLVSPILDIVHPLN-----QTRSR 172
 Ame1Or101 QGKRMAKLYRNTLFSFLILFLLVPLVSPILDIVHPLN-----QTRSR 172
 Ame1Or102 RGNRTAHLYSALLIALVLFLLIPLISPMLDVFLPLN-----ETRPR 172
 Ame1Or103 QGNKMAQLYRSALLTALILFLLIPLLSPIILDIVLPLN-----ETRPR 172
 Ame1Or104 KGSKMAQLYRNTLLSFMVFLVPLVPLIFPFLDIVHPLN-----ETRPR 172
 Ame1Or98 QGSKIAHLRNTLLSFLILFLLVPMYFPILDMIDALN-----QTRSR 171
 Ame1Or100 QGNKMAQIYKNTLLLSMTIFFVPLIFPILDIVYPLN-----ETRPR 98
 Ame1Or97 QGNKFAEIKNVLLSALLLFLLLPLFSPFLDIVFPLN-----ETRQQ 125
 Ame1Or105 YGSKLALLYRRTLLTFLVIFLFLPLCNPILDVILPLN-----ETRSR 172
 Ame1Or109 RTTALCALYKVMVYSCAFMFLVIPTIPPILNIVAPLN-----VSRSR 160
 Ame1Or110 KATTLCILYKVMVYSCAFMFLVIPTIPPILNIVAPLN-----VSRSR 160
 Ame1Or111 RARVLSTVYEVSIFFCGFMFLIPIPIPLNIISPLN-----ESRGR 160
 Ame1Or108 RATTLCIFYEVIVIFSAIMFIMPTIPPILNIIMPLN-----ESRDR 160
 Ame1Or107 RAMFFCSFYEVSIYSCGFMSPLIFMPLINVMIMPLN-----ESRSR 160
 Ame1Or112 RGLFITISYFLHIGVTETFMLILPMVPPILDIVPLN-----VSRKR 160
 Ame1Or113 RGSFLAMFYFINAYCCSLLFLQVPWTARLLYMIKSON-----TSPPM 160
 Ame1Or106 KSLFFILIVVNAVYFCTVFLFLLPLTPILLDIFLPLN-----ESRPR 157
 Ame1Or122 ISSHIIYIFCCMTFAFIVAIIIFLVNPVILDLRNLN-----ESRIF 160
 Ame1Or125 ISSHIIYIFCCMTFAFIAAAIIFLVNLIILDLRNSLN-----EFR-F 159
 Ame1Or123 ISSHIIYIFCWLSFICVASTWIFILNPVILDVIMPLN-----KFR-L 157
 Ame1Or126 ISSHIIYIFCWLSFICAAASCILILNPVILDVIMPLN-----KFR-L 157
 Ame1Or127 ISSHIIYIFCWLSFICAAASCIFIVNPVILDVIMPLN-----KFR-L 157
 Ame1Or128 ISSHIIIDIFCWMSFICVASTCIFMLNPVILDVIMPLN-----KFR-L 157
 Ame1Or129 ISSHIIIDIFCWLSFICVAATWIFILNPVTLDVIMPLN-----KSR-I 157
 Ame1Or133 DSRHMIEILWMAATITLYSILGLCPPII--FIILLN-----ESPIR 60
 Ame1Or134 DSRHMIEIFLWMAANITLYSILGLYLI--FIMPLN-----ESPIR 156
 Ame1Or131 NSRHMIEILLRVTFILTFLSIFLLYFVTMDFIMPLN-----EFHRH 158
 Ame1Or132 DSCHMIDIFLWMIYAIFAFCIILLCPILDFIMPLN-----ESRIY 158
 Ame1Or135 DSCHIIIDIFFWVACTNITLSSISLLYFITLNFIMPLN-----EFR-- 156
 Ame1Or136 DSCYMIDIFFWMTYVGIACSILLCPITLDFIMPLN-----ESRTR 158
 Ame1Or138 DSCHMINIFFZIIYGIAVLSIIFILYPMTLDFIMPLN-----KTRIH 64
 Ame1Or130 DSHHIIINIFFWMTYTTIVIFIIYVSYPIILDFIMPLN-----ESRTH 158
 Ame1Or137 DSCHMMNIFFWIIYGIAALSIIIFILYPMTLDFIMPLN-----RTRIR 157
 Ame1Or139 -----DAVIAFFSISLLYPIILDFINSLN-----ESRTR 79
 BmorOr20 THRRVHKISHFYTVFLKQVMIAGLTLFNVIIPMYNNYRQG-----NYASDRPA 179
 BmorOr3 THRRVHKISHFYTVFLKQVMIAGLTLFNVIIPMYNNYRQG-----NYASDRPA 179
 BmorOr18 THRRVHKISHFYTVFLKQVMIAGLTLFNVIIPMYNNYRQG-----NYASDRPA 179
 HvirOr6 IHKKIHLISHLFSLWILFQMLSGLSLNFNIIPMYSNLAAG-----KYRKGGLQ 184
 BmorOr23 IHTVVHKISHNMTYIFSFICIIFGTVTFNLTPIFNINIGSD-----AYKNRPD 179
 BmorOr16 IHTVVHKISHNMTYIFSFICIIFGTVTFNLTPIFNINIGSD-----AYKNRPD 179

BmorOr4 IHTVVHKISHNMTYIFSFCIIFGTVTFNLTPIFNINIGSG-----AYKNRPD 178
 BmorOr5 TYKAVHKISNMTYIFSFSIFVCVVTFNLPVFNINIGSG-----AYKNRPD 179
 BmorOr22 THLLVHRLSHYYTVYLISLVVTGMLLFNITPLYNNISSG-----VFNSPRPE 185
 BmorOr17 THLLVHRLSHYYTVYLISLVVTGMLLFNITPLYNNISSG-----VFNSPRPE 185
 BmorOr1 LCTFVNRMESHFYTLVLFVFSMFGLGFLNLLPLYNNYVSG-----AFSDPYGP 181
 BmorOr1a LCTFVNRMESHFYTLVLFVFSMFGLGFLNLLPLYNNYVSG-----AFSDPYGP 181
 BmorOr1b LCTFVNRMESHFYTLVLFVFSMFGLGFLNLLPLYNNYVSG-----AFSDPYGP 181
 BmorOr19 KVIQIERVSRFTAYFLVILIAINCLSWMLKPTLHNIK-----HFEEIMNK 178
 BmorOr15 KVIQIERVSRFTAYFLVILIAINCLSWMLKPTLHNIK-----HFEEIMNK 178
 TcasOr5 LGKKEHSFNKMAKILLTIY-TTKLSSMIVTVNDIVK----- 153
 TcasOr7 ATKQDYIFRYCFYTGTFVYFYGSDFTILVLI TPVEKLYG----- 158
 HvirOr4 DREWVVVTNYLGFYLLWFVVLILELQFAFTALSVRAR-----FSAVND 165
 BmorOr13 HRQLLIAIMYWCYYCSYFIAHLLMQFVLI AALALSS-----LKL VNN 214
 DmelOr10a IRLKHSAMAARINFWPLSAGFFTCTTYNLPILIAMILY-----LQNR YEDF 171
 DmelOr33c YRDHVHCHARRFTRCLYISFGMIYALFLFGVQVISG-----NW 153
 DmelOr7a LILDVAVRFCNYLVWFYQICYAIYSSSTFVCAFLLGQP-----PYA 172
 DmelOr22c MLVGLATTANRLSLLLSSTGATNAFTLQPLIMGLYR-----WIVQLPGQT 168
 AgamOr1 PVLQSMGCVFWMIFLWFVAIFTIIMVWMSPAFDNER-----RL 164
 AgamOr4 IIAKVQTTTCMGAVTLFYWIAPISICAHYYRSTNSTEP-----VRFVQH 168
 DmelOr47b EVLQWQRLCYVIESGLYINCFCLVNFSAIIFLQPLL-----EGKLPFH 185
 AmelOr73 IIQRRNDNYARKVTIYCEILNESAVFFATVGGYKRFIN-----TR 150
 AgamOr68 VVLKYGRVLYIAGHIMIGGYFGSLFI IWINPLIMYFKE-----GRVMLLF 160
 DmelOr59a IYGOVVRQLRNVLYVFIGIYMPCALFAELSFLEKEER-----GL 155
 DmelOr23a MTEHLLRMSKLFQITYAVVFI IAAVFPVFETELSLPMP----- 153
 AgamOr31 IVQKYNRIDRFLAWAYLITAMSTGVLFVGVVALVLFSL-----EKSDW 152
 DmelOr2a ALRKEVNIAQGTFRTFASIFVFGTTLSCVRVVRPDR-----EL 160
 AmelOr62 KGRIVSLMILYLGYSAGFSFVKALPFGDILPFQMFQNS-----RNSMNP 169
 AmelOr121 IMIRRARIARIINIFGYILICILIWLLMILPRFGITIR-----YVTNETDA 169
 AmelOr140 FLFELDYGMDKQYFYIHSYIGTAIVANLIASCD----- 150
 TcasOr12 IIVNEIKTSKII SKLFLACTLTCVSWAISPLLDKGRS-----DELRL 164
 AgamOr8 GVYQYNRESQVVMKSFSLYMLLIMFNLPLVSMVAG-----YVSDGTW 170
 BmorOr9 LVRKNLVLIKFITKYFFVLNAVLIFVYNFSSPVI IAYN-----YIVSNEV 157
 AgamOr40 VHYISISSYRFTNKYQFWWIASCLLGTMHWAVYPILS-----QER 170
 TcasOr63 IIAKIRSCAFISNAFRICCTFTCSFYCLVPFIDESR-----KKIL 159
 TcasOr4 IIEKYMIRVKYLARLFRILCILTVSFYGLFPFIDEDPD-----HML 152
 TcasOr13 QKQPPKTWKSFFVPIITIVFTATILLFDVAMWLTLIAR-----NQSIF 173
 AgamOr24 VLCDNASLIYIVIKVTVLAYLLLVITAMSIPGLSSIF-----LADR 149
 AgamOr54 LLVRTLNNTTLLSSLFAVCS SAPGLLFVG----- 163
 AgamOr23 -LFHTATMCMVFI RIFAVAFSIVAIAIYSYAILMPLIEH-----EL 153
 AgamOr64 IRAGNYRRWNWMLMFYLFNVINVSIFTLTNAHNRQFH-----FQTRGE 182
 DmelOr82a YVAEANKLASFLGRAYCVSCGLTGLYFMLGPIVKIGVCR-----WHGTTCDK 160
 AmelOr116 IISYYNWQGI FHHIAYQGFASICIFSYSCIPLQSAFSG-----KSKQL 167
 AmelOr160 TVVWYNVAATLFTSSALSILFVPTLFYAKPIIGCLLS-----KYNNTL 163
 TcasOr10 ---YDMVFLYYAGSVCIQFQMLKMAFAERKMNE----- 138
 TcasOr26 RNKQLNQWSRWFVSVVLYFFVISVFAWPGIFTQSCEDLN-----VALNK 144
 AmelOr117 PYEEFAYWARIFSIIIFYSSCMNVFTFSIAAAIDYFKFEYN-----ANNTEN 166
 AmelOr120 YLQEYAIYAKNITKGYFFSMCNALLFFFSLPIIETLTK-----NENLN 153
 BmorOr7 LLVDASRWASRFVWAYSGCAVVTCTLWIVFPIIYHVQG-----QTV 156
 AgamOr6 VCEDTMRPAIRVTSVTALANVVMGIAFTILPIAEMIYT-----HHYTGRWNR 170
 DmelOr45a KIERENQLDRYVARFRNAAAYGVI CASAIAPMLLGLWG-----YVETGVF 155
 DmelOr67d CLEKRIRITWTLIGFMLVYIILLGLVITFPIFYLLILH-----QKVLVM 168
 DmelOr83c LNSNIDRLGIMKII RNNGYVFAFCLMELLPLAMLMDG-----TRVTAM 163
 AmelOr162 ILRESNMICKIFLKDSLDIYTLDKIMNQFIIVQGETR-----KLCGN 168
 HvirOr3 -----
 TcasOr20 VITETDKSVKFYTKLFIYGVIGNLCYGLLPILGYKKCHE-----SKSVHMT 155
 AgamOr11 IVGSNRYLKR LAVVFWSCALVTANMCMCVSLVQYLTYE-----EGPPDG 171
 DmelOr56a LLVATQAYTRTITLLIWI PSVIAGLMAYSDCIYRSLFLP-----KSVFNVP 172
 AgamOr28 TAKKSKIFVIIYTTSFLLICVEYSSMPLFKLIYHSAVYG-----KQSNY 187
 AgamOr58 -AARKALMDRVNRYLWLFYLNIAQVFFWINLLRNCSP-----LAVF 163
 AgamOr59 IRDRWYRWSNGLILGPQCCIVLILLQTWISRQHLKHT-----MLVVR 175
 DmelOr1a EWRSONQRGQLMAAIYFMM CAGTSVFSLLMPVALTMLK-----YHSTGE 159
 DmelOr13a NVAAECCRMMVTFSIMTSLACLII MCVLPLVEIFFG-----PAFDAQ 166
 AmelOr161 IYAEKTMFAFRLAKYFITTVAITIVMFSVPLEIYVIG-----NSDK 162
 AmelOr141 IVQSYTRKTTRLTRWYLASCVLTI AFYAFVLFVGLSDFDQ-----SKDFEHMRN 162
 AgamOr52 LRQQAFRTNNVLM LALMVYGVLFVVEASGLHWQEIFR-----MPDY 144
 AgamOr36 ---DTHRLSYRRIVNIAITFQLIGLADRLVAGFSQTYR-----QELY 168
 AgamOr25 -----KLISVTLHALAACYMSTMMFELIPIVSPNPR-----KSNL 142
 AgamOr45 KLFRAGTKRMLLAYRVIHLMYGTSYFFQLGPLIMPDP-----HKCNLPL 163
 TcasOr3 EKKEALKWTKYFLNFCNAICLSMFANGVFTFIFLSDKQ-----YVERNQR 175
 DmelOr88a NFWQRYRFIRIYSHLGGPMFCVVP LALFLLTHEGKDTP-----VAQHE 175

AgamOr22 ICGKYQLARKLLLVTTLSYLTGAMLLIYPVVS GG-----LADR 164
 DmelOr49a NKYYLSCSTRNVLYVYVFMVVMMALEPLVQSCIMYLIG-----FGKA 165
 DmelOr85f NDHYWTKSFVYLVIIYIGSSIMVIGPIITSI IAYFTHN-----VFY 165
 AmelOr119 VKKIIDKYHTRNKVMFFGFCVIGACLG FALLCFTPMEN-----GLPIRA 178
 DmelOr63a TMNRYWASTRRQILIIYLYSCICITTYNFINSFVINLYRYFTK-----PKGSYDI 187
 DmelOr67b ILLNNWMIIDRQVMFFFKIVCMPVLYYCVRPYFYIFDCYIK-----DKDTC EM 188
 BmorOr21 AASSIRNCQIYCELGWTLIVMSCGLSFPVIAILLNIHS-----FTFKFDST 166
 BmorOr11 TVLNYAKKGVIVSKFWLFTAFAITFCFLKAFIIMGYR-----FFIKN 162
 BmorOr12 IEKSMVNKIKSYLSTYVFASTITILVSNGIIAFFQTINS-----DEPFLGI 170
 AgamOr33 YPACHLSLQHGHHAWLRVCRVLSGLSDRLRTVQH GADR-----153
 HvirOr1 MDPNFDCSLTRKCNITCAVLLILALLEHILSLLSAFAG-----ASACYTG 184
 HvirOr5 -----YVLVSHGFIFMGQDYSEWFAMPLVIIS-----125
 TcasOr1 -----LVYCSLAIFVLCELLIEGTTTILINVPS-----131
 TcasOr2 VNYKKKKFQRMVVARYVYYATIFTITITATSSFVTIHN-----161

 TcasOr16 KAWYPWDAMSGMPYYITLVFQIYYVFFSLAHANLLDSLFC SWLIFACEQLQHLKEIMKPL 242
 AmelOr2 RSWYPYDP SHGMAHILTLIFQFYWLIFCMADANLLDVLFC SWLLFACEQIQHLKNIMKPL 239
 AgamOr7 KSWYPWNAMSGPAYIFSFYIYQIYFLLFSMVQSNLADVMFCSWLLLACEQLQHLKGIMRSL 239
 AaegOr7 KAWYPWDAMSGVPY-FSFYIYQAYFLLFSMCQANLADVMFCSWLLFTCEQLQHLKGIMRPL 223
 DmelOr83b KSFYPNWASHGMFYMISFAFQIYYVLFSMIHSNLC DVMFCSWLI FACEQLQHLKGIMKPL 241
 BmorOr2 KAWYPFKTMSGGGYVFAFYIYQIYFLLFSMALANLLDVI FCSWLI FACEQLQHLKAIMKPL 242
 BmorOr2a KAWYPFKTMSGGGYVFAFYIYQIYFLLFSMALANLLDVI FCSWLI FACEQLQHLKAIMKPL 242
 HvirOr2 KAWYPFNAMSGTMYIVAFAFQYVWLLFSMAIANLMDVMFCSWLI FACEQLQHLKAIMKPL 242
 AgamOr56 FIVVKYAVTGSYDVPLSTPIEAKYFIPGLRTN-----FWVWLPVDLTLNAILELHG FAL 205
 AgamOr57 FIVVKYAVTGSYDVPLSTPIEANYFIPGLRTN-----FWVWLPVNITLSAMLELHG FAL 205
 AgamOr26 FIVVKYAVTGSYDVPLSTPIEGKYSIPGFRTN-----FWVWLPFNLAQNVVLQCHSFAV 205
 AgamOr27 FIVVKYAVTGSYDVPLSTPIEAKYFIPGLHTN-----FWVWLPVTLGLNVLLEWHSLAL 205
 HvirOr9 I IIPHYFKT--NEVKLEMPFIAYYFNEFDS-RIYPWVYLHQVWTACVAMIMVYGPDCFF 217
 HvirOr7 MIAVKYYKT--NEFEMLLPYLDVFSFIPYEL-KYWPFAYIHQIWSECVLLDMAAADYLF 193
 DmelOr85b EYWVYDKWLNIRVVGKQLPYLYMYPKWKHQDN-WSYYP LLSQNFAGYTSAAQIISTDVLL 207
 DmelOr85c QFLVYEKLLKIRVVGQTLPLYMYPWNWHEN-WTY YVLLFCQNFAGHTSASGQISTDLLL 206
 DmelOr85d YYLVCDFWLGMRFERMLPYCWPVWDWSTG-YSY YFMYISQNI GGQACLSGQLAADMLM 228
 DmelOr67a IYFIQRVLLHYPDAKQIMPFYQLEPWEFRDS-WLFYPSYFHQSSAGYTATCGS IAGDLMI 220
 DmelOr67c KASVKFNFLGYDTFDRNFGFLIWFPPDATRNNLIYWIMYWDIAHGAYLAGIAFLCADLLL 220
 DmelOr92a KSTIKYYLMGSEIFERNYGFHILFPYDAETDLTVYWF SYWGLAH CAYVAGVSVCVDLLL 225
 DmelOr69a VLLWEHLHEE-YDLSFKTQTNFWFPKWHG SALGFGMAVLSITVGSFVGVGFSIVTQNL I 215
 DmelOr69b LMIREHFSNS-QQLGYRIQSNWYWPVQVQGSIPGFFAAVACQIFSCQTNMCMVMFIQFLI 215
 TcasOr6 MYYYGEKESRSQIYDNFVFTLQVIYLYVGC FVVAGFDCFFFYLLGHAVTELKMLTISFSC 189
 TcasOr11 AIAFGESKGLSPKVDHLYFVLHSTSTFVVLHAVTGFDRLFFFLIGHVLTTELKLVKKS YRL 206
 AgamOr41 AIYLLSGDRVLPYGVVLPFVDPDSLGVYELNYIYQVSCI IWTPPGLVASVCMFLGLVLNI 207
 AgamOr42 ALYLLRGERYLPGLIVLPFTAETDDFGFWCTLVVQLAYMYTGPFGIIPSONIYFAFV FNI 213
 AgamOr43 AQYILKGERFLVYTIILPFTDPEITSHYLLNLVQY YLLIVGLAGFSAENVLILFVTSV 208
 AgamOr44 IQYIIKRERVLVYAILLPFTDPEITSHYLLNLVQY YLLIVGLAGFSAENVLILFVTSV 208
 AgamOr66 YMYFVVHVKVPIFPLYIPGINIYSAYGYGITNSFHMLIAVYGLFGALTSDIVFIMFVVHF 206
 AgamOr67 YMYFVVHVKVPIFPLYIPGINIYSAYGYGITNSLHMVIAVYGLL GALTSDIAFIMFVVHF 206
 AgamOr72 FYYFATGVVPLFLYELPFFDLSSSLGYAVT MCFQINLLAIGVLGAILSDVFVFMYAMYA 207
 AgamOr73 FYYFATGKVMPLFLYELPFFNVSSSLGYAVT MCFQINLLAIGVLGAILSDVFVFMYAMYA 207
 AgamOr71 FYYFVTGVVMPFLVYELPFCDLSSSLGYAVT MCFQINLLVIGVLGAILSDVFVFMYAIYA 207
 AgamOr74 FYCFATGKVMPLFLYELPFCDWSSSLGYAVTICFQINLLAIGVLGAILSDVFVFMYAMYA 207
 AgamOr70 FAYNVNGVVMPLFLYELPYDWTSTTIGYVNM MFQVNLVIGTIGAMLDFLYFMYAMYT 207
 AgamOr69 IAYYTTGELMPLFMIELPYGWTTTIGLAMNMFQANILVIGTMGAIMSDFLFFMYAMYA 207
 TcasOr9 NKNLPMVVWYPYDPNKTPYFHLTYIWEIFCISNLGLIYAVLDLVFPCIAIVLGGQFKILA 94
 TcasOr18 NLEMPMPAWFPYDYNKSPVEITYLWQVFLITLAI IYGASDMFFPCITIIIGQQFKILA 199
 DmelOr83a DRSLPLACWYFPDYTPQGVYEVVFLQAMGQIQVAASFASSGLHMLCVLISGQYDVL F 232
 DmelOr85e IRMLPLQCWYFPDALGPGTYTAVYATQLFGQIMVGMTFGFGGSLFVTLSSLLQLGQFDVLY 241
 TcasOr24 PSCKKS----RRINEVCGVAIPYVWFDTENWSIKLPLILHTFLV IIVDKVTLVLSLQV 205
 TcasOr25 DKCKEA----RRINEVCGSAIPFWTPEFETEDLFTLTLVITYVLINIFVVVKVAMTVSVQV 205
 TcasOr19 PHCKRN----RKIREVCGVFLWTPFDADYPPVVLVVASVVFIVVILIDKVTLLVSLQV 170
 TcasOr22 PECRKIN-EEKGLSEICGMIVPFWAPFDIDWFLKQIFWFDQLLGIYII IKGGAAVSITT 202
 TcasOr23 PQCRKMN-EEKGLSEICGMIVPFWAPFDIDWFLKQIFWLNQLLGIYII IKGGAAVSITT 202
 AmelOr168 FQKDEFYHEDFVMPAVFSNQ-PFSTGVFISGVFLQ LFGGEYLLFRKISLDLYTMHLNLLI 206
 AmelOr170 FQKDEFYEDFIMPAVFSKQPFNDVFCIGLIFLQLLGGEDTIRKISLDLYTILCLLI 207
 DmelOr169 FRKSEFYTYDQVPAVISNE-PFPIGVFIGGVALQIFGSAYTLLRKVSLDLYTMHLILLI 208
 DmelOr65b AFPFQ-----WHEKSLHPISHAIYLFQ--SYFAVYCLTWLLCIEGLS 200
 DmelOr65c AFPFQ-----WHEKSIHPISHAFIYLFQ--TWNVMYFLTWLVLCIEGLS 200
 DmelOr65a SWPFQ-----LHDPKHP IAYIIIFVSQ--STTMLYFLIWLGVVENMG 231
 TcasOr17 AWYP-----YDSTKSPFYELTYIHQ--VVS IYWLVSASLNIDMLI 199
 TcasOr21 GWYI-----VDTKVSPPYEIVYGFQ--FCSCCYMSALINIDTLI 197
 TcasOr56 TWMP-----FDYNDSPLYETIFAFQ--IFSTTVYGYIGAADAVI 222

TcasOr15 TWTP-----FDYNDSPLYEIMFAFQ--IFSTTLYGFYIGAADAVI 220
AgamOr9 VWPR-----VDHTTPYVWVLMVILYQ--YMAIVLNASFNISWDSL 214
AgamOr65 WVPV-----VDHTTPYVWVLMVIFHQ--YVAIALNASFNISWDSL 218
BmorOr6 MWVP-----TDISK-TPNYEITFVVE--LWMMVISAALFMSVDTIT 194
BmorOr10 IWMP-----VSTGE-SPHYELGYLYQ--MITIYISAXLFLSVDSVP 193
AgamOr34 PWFFG-----VPYWEDAHVAYYTICAYQ--SFGMYFHMLLNTAGDTQL 197
AgamOr37 PWILG-----IEYGPTKRLNYGLLFAYQ--VIGMYLHMLINVAIDVQL 209
DmelOr94a YYVP-----FEWQNERERYWFAYGYD--MAGMTLTCISNITLDTLG 202
DmelOr94b YYVP-----FEWRTRERYFYAWGYN--VVAMTLCCLSNILLDTLG 199
DmelOr71a MWTP-----FDWQQPVLLWYAFIYQ--ATTIPIACACNVMTMDAVN 195
DmelOr46a TYNPL-----GENTGS--PAYWLLYCYQ--CLALSVSCITNIGFDSL 195
DmelOr46b ML-EV-----CSIEGW--ICYWSQYLFH--SICLLPTCVLNLITYDSVA 194
HvirOr8 ICNYG-----FLSEDFRQMFVPLVLYQ--GSAMMFDMLYSVNIDTLF 198
BmorOr8 ICNYY-----FLNEELRHDFSGWYIYQ--SFGMYGHMMYNVNIDTFI 200
AmelOr68 AWLP-----FNCSAPNYYYYIAYVHQ--IALIGTSLLNVCADVTI 195
AmelOr69 MWLP-----YNYTS--LSAHIFIYTOQ--VVSLIVSAMIHVACDSFI 191
AmelOr70 AWLP-----YDYS--ELLPFALSIAHQ--ATTSMFCSCQNIACDITL 193
AmelOr71 TWLP-----YDYS--TASAFLLAFAYQ--VVVATVCTFACVSDTLY 193
AmelOr72 AWIP-----FNYTA-SWFLFSLTFIHQ--CGCAVVTSTFGISIFDTL 194
DmelOr19a TWIP-----WNWRDSTSAYLATAMLH--TTALMANATLVLNLSSYP 198
DmelOr19b TWIP-----WNWKDSTSAYLATAMLH--TTALMANATLVLNLSSYP 198
DmelOr33a GWFP-----YDFQATAAIYWISFSYQ--AIGSLLILENLANDSYP 193
DmelOr33b AWFP-----YDVQATELIFWLSVTYQ--IAGVSLAILQNLANDSYP 195
DmelOr22a PYI-----DSDE--QFYISSIAE--CFLMTEAIYMDLCTDVCP 208
DmelOr22b PYV-----DPEK--QFYISSIAE--VILRGWAVFMDLCTDVCP 208
DmelOr42b PFI-----DWHDGTLKLWVASTLE--YVMMSGAVLQDQLSDSYP 208
DmelOr59b PFI-----DWRDGMGSLWIQAIFE--YITMSFAVLQDQLSDTYP 209
DmelOr59c PLV-----DWRKGHWQLWIASILE--YCVVSIQTMQELMSDTYA 211
DmelOr98a PFV-----DFRESRSSFWKAALNE--TALMLFAVTQTLMSDIIY 206
DmelOr42a PFL-----DWRSSLHLALQAGLE--YFAMAGACFQDVCSDCYP 211
DmelOr85a PLV-----NPDD--HFYLATAIE--SVTMAGIILANLILDVYP 206
DmelOr43b PFI-----NWRVDRTOQMIQSFLI--YFTVGYAIYVATATDSYP 208
AgamOr2 IPGVVDL-----ATPTYQVVFVLQ--VYLTFPACCMYIPFTSFY 188
AgamOr10 IPGVNNF-----DSPQYEIFYITQ--LVLTFPGCCMYIPYTSFF 189
DmelOr30a LPTIDEYK-----YASPYEIFFVIQ--AIMAPMGCCMYIPYTNMV 196
DmelOr49b IPGLNEY-----ESPYEMWYIFQ--MLITPMGCCMYIPYTSLI 188
DmelOr43a LPGAISMT-----SSPVYEVYLAQ--LPTPLLLSMMYMPFVSLF 192
AgamOr32 KVCVFTP-----FRFPFDYQHPVIFALTFLHN--FDAMLVTVCTSVTVDS 196
AgamOr35 RVHVFAPMAYSVRTRGRSRFHFPHNYQHPLMFALTFLFN--CDSIHMSIFIIGSVDT 208
DmelOr47a HAPELPPFC-----LFPWNIHIIIRNYVLSFIWS--AFASGTVLPAVSLDTIF 200
DmelOr98b NCSRNFHFP-----VYPWDNMKLSNYIISYFWN--VCAALGVALPTVCVDTL 201
DmelOr9a EIHLLEPHNG-----VYPYDLQVVMFYVPTYLWN--VMASYSAVTMALCVDL 212
AgamOr38 PLVKLLPFKV-----LPPFDSQDPTLFLVTLTIFL--NYASVPTITAMTSTDAL 218
AgamOr39 PLVKLLPFKL-----ALPFDSONLFPFVVTTLFL--NYASAPTITSSQSDAL 219
DmelOr24a DWIYETPFKM-----MFPDLLLLRPLPLPITYILV--HWHGYITVVCVFGADG 199
DmelOr45b EFKFDMPFRM-----LFHDFAHMRPWFVVFYLYS--TWSGQVTVYAFAGTDG 211
AmelOr74 ILPFK-----MWVDLP-LSVTPYIEIMFVIQ--LLAVEQIGIAYVCSDF 202
AmelOr86 ILPFK-----MWVDFP-LSETPYIEIMFVIQ--LLTVQQIGIAYTCNDNF 202
AmelOr75 ALPFN-----LWIDFP-VGLSPYFELLFILQ--ILCVYHVATCYICFDN 202
AmelOr84 ELPFN-----LWVDLP-VGLSPYFELLFTVQ--ILCVYHVGVCYICFDN 200
AmelOr87 VLPFN-----MWVDLP-LFLSPYIEILFVLQ--VLSLYHVGVCYICFDN 218
AmelOr76 ILPFN-----MWLELP-LSITPYFVEMFFVQ--VVVYHVVCVCYICFD 202
AmelOr85 IHPFN-----LWLDES-WYMTPYFEMVFIIE--ILSLYHVGVCYLYFDNF 204
AmelOr88 IHPFN-----MWFDRS-LSLSPYIEIYTIQ--VLSAYEIGICYICFDN 203
AmelOr91 VLPFN-----MWVNL-LSMTPYFEITFTLQ--VLSLYQIGVSYFCFDNF 201
AmelOr92 VLPFN-----MWVNL-LSMTPYFEISFVLZ--VLSLYQIAVSYFCFDNF 198
AmelOr95 VLPFN-----IWIDL-LLTITPYIEITFVLE--VISLYHIGVSYFCFDNF 199
AmelOr93 ILPFN-----MWVNL-LNITSYFEITYTLQXFSLSLYHIGVSYFCFDNF 189
AmelOr77 ALPFN-----MWVNL-LSTSPYIEIIFTIQ--VLSLYHIGVGYFCFDN 203
AmelOr94 ILIFN-----MWLDLP-LSMSPYFEIYVIQ--ALCLYQVGCYLCVDNMF 202
AmelOr96 ILIFN-----MYLDLP-LSISPYEIAIYTIQ--IAALNQAGSCYFCFDN 202
AmelOr79 MLPFN-----VWITFPVTR-TPYIEIIFFIQ--AICLYYIGISSFCFDN 202
AmelOr83 MFPFN-----IWINLPITQRTPYQIIFVQ--GVSYYIGISYFCFDN 203
AmelOr80 MLPFN-----MWINLPISR-TPYQITFLIQ--ATCVYYVIGISYFCFDN 202
AmelOr81 MLPFN-----MWINLPVSR-TPYIEIIFFIQ--AMCVYYVIGISTFCFDN 202
AmelOr82 MLPFN-----MWINLP-LSK-TPYIEIMFLIQ--AMCVYYIGVASFCFDN 201
AmelOr78 MLPFN-----MWLDMP-LSK-TPYIEITFLIQ--AMCVYYIGISNFCFD 202
AmelOr89 MLPFN-----MWLKLPLSE-SPYELMFVYQ--IMTFYFIGISYFCFDN 203
AmelOr90 ILPFN-----MWVNLPLSQ-TPYELLFLIQ--IITLYYIGICYFCFDN 200
AmelOr142 TFPTH-----AIYPFS-VRRHLYKGLIFFHQ--SLVGFQVSSGMAIDTQI- 195

AmelOr146 PFPTN-----AEYPPF-VHFEPVRSIVFVQQ--ALVGFQCSAHLVCVNIFC- 195
 AmelOr148 SFPWE-----TEYPPFQ-INDTSRN-IIIYIHQ--FFFTYQCAAHICLSLFG- 192
 AmelOr158 SFPWG-----TEYPPFQ-VNYTTINVI IYAHQ--FFLVYQCAAHTCLSLFG- 193
 AmelOr147 TFPWE-----TEYPPFQ-VNYTSRNF I IYMHQ--FFFTYQCAAHICLSMFG- 193
 AmelOr150 SFPAD-----AEYPPFQ-INYKSIKVI IY LQQ--TLVGFQCTAHICLSVFG- 195
 AmelOr151 SFPID-----AEYPPFQ-INYTSVKI I IY LQQ--TLVGFQCAAHVCLSI FG- 195
 AmelOr152 SFPAD-----AEYPPFQ-VNSTSMKI I IY LQQ--SLIAFQ CAGHACLSIFG- 195
 AmelOr154 SFPLE-----AEYPPFH-VNESLIT I IYMHQ--SLVSYQCSANVCVSI FG- 195
 AmelOr155 SFPFD-----AEYPPFH-VNHSLVTI I IYIHQ--SLVGYQCSANVCASVFG- 195
 AmelOr157 PPFPE-----TEYPPFH-VNTTTRIF I IYASH--VLVIFQGTAHMCLCMFG- 192
 AmelOr156 SLPFY-----TEFPLS-LNNTAVY I IYFHQ--CFFAYQCSATVCLSI FG- 195
 AmelOr153 SLSCD-----AEYPPFQ-LNYTLVFAIRYQS---FLSYQC-AYACADHX-- 181
 AmelOr144 ELPAE-----GWL PFS-IEPLGIYCVVYVNH--IYCILQT-SFCIFVDFTI 196
 AmelOr145 ELPTE-----GWL PFS-IEPLGIYCAVYVNH--VYCILQ TLSFCIFVDFTI 197
 AmelOr143 KLPAD-----GWL PFS-TEPFGIYCI IYFNH--VYCILQT-AFCIFVDFTI 191
 AmelOr1 NTTQI----PLPYLS---DYVFFVIEDSPI-YEMTFVLQ--IFISSIILSTNCGTYSLI 216
 AmelOr3 NSTQI----LLPCPS---DYVFFVIEDSPT-YEITFVVQ--MFTSFLIMSLNCGIYSLI 221
 AmelOr6 NVTIR----LLPCPT---YFTFFNELVSPY-YEMIFMLQ--ILAGVFLVYTVLSGTIGIS 208
 AmelOr7 NVTIR----LLPCPT---YFTFFNELVSPY-YE I IFMLQ--ILAGFFIYTVLSGTIGIS 208
 AmelOr4 NVTIR----LLPCPT---YFTFFNELVSPY-YEMIFMLQ--LLARFFIYTVLNSTVGIS 210
 AmelOr5 NVTIR----LLPCPT---YFTFFNELVSPY-YEMIFMLQ--LLAGFFSYTVLNSTVGIS 210
 AmelOr8 NVTIR----LLPCPG---YFGSLDEQVTPN-YE I IFTLQ--VLGGFVTHTA VCGIKSAC 212
 AmelOr9 NVTIR----LLPCPG---YFGSLNVQITPN-YE I IFTLQ--ILGGFVIY TALCGVKSSC 212
 AmelOr11 NMTVR----LLPCPS---YFGSLNEQATPN-YE I IFTLQ--VLGGF I IYTVLCGTKSAC 210
 AmelOr12 NVTIR----LLPCPG---YFGFLDEQVSPN-YE I IFTLQ--VLGGFVIY TAVCGTKSIC 212
 AmelOr10 NMTIR----LLPCPG---YFGSLDEQVSPN-YE I IFILQ--VFGGFVIY TAVCSTKSIC 211
 AmelOr14 NTTKR----LLPCPG---YVFFNEQVSP I-YE I IF I I Q--VLGGLLTYTIMCGTIGMC 212
 AmelOr15 NTTIR----LLPCPG---YI FFNEQITPN-YE I VFTLQ--VIGGLLSYTIMCGT TSMC 213
 AmelOr13 NTTVR----LLPCPG---YMFNLQVTPN-YE I IFTIQ--VLGGFLNIYTTLCGTTGIT 204
 AmelOr16 NITIR----PLPCPS---YF I I NEQQSPI-YE I L FVLQ--VMAGMAYAVISGTCGIS 215
 AmelOr17 NTMIR----ALPCPS---YF I I LNEQQSPI-YE I L FVLQ--I IAGIAYAVISGFCGIF 215
 AmelOr18 NLT YR----RLVYPF---PKVLLDARHSPI-NEICYTIQ--LLSGFVAHNITVAACGLA 224
 AmelOr19 NLT YR----RLVYPF---PKALLDARRTPA-NELLYTIQ--LLSGFVAHNITVAACGLA 224
 AmelOr22 NITFI----PLVFPF---SRF I IDTRY SFI-NEIVFSIQ--LIAGALMHTITTAACSLA 225
 AmelOr24 NITFI----PLVFPF---SRF I IDTRY SFT-NEIVFCIQ--LVAGVLLHTITTAACSLA 217
 AmelOr20 NLTFV----PLVFPF---SRF IVDTRY SPT-NEIVFSIQ--LMAGALMHGITSAA CSLV 221
 AmelOr25 NLTFI----QLPFPS---SSL IADIRHSPY-NEIVLSVQ--ILTGVMHAITSAA CSIA 216
 AmelOr29 NLTFI----QLPFPI---SIL IADVRDSPY-NEIMLSIQ--ILTGIVMNAIRSAICSVA 217
 AmelOr30 NLTFI----PLPFPS---SKLIADM RQSPA-NEILFSVQ--VLSGV I IHAITATAV SIA 217
 AmelOr21 NISFI----PTMFPF---PKY IADVRSPI-NEIVFFFQ--FMCGFLVHGVTSSACSLA 217
 AmelOr23 NISFI----PTMFPF---PKY IADVRSPI-NEIVFLAQ--FICGFL LHGVTSSVCSLA 217
 AmelOr35 NEIVR----SQAFP I---YRGLLDPR TSPS-FEIVQLMQ--CLAGFVIY SVTVGSCSLA 222
 AmelOr27 TRVLH----VLPCAV---YKLLVNVE NSI-NIFMLCFQ--FVAAA IANSS TVGIFSLA 218
 AmelOr28 TRIVH----VLPCAV---YKLL I DVTHSPN-SEL I IASQ--FLSGFIVNSSAVGIFSLA 219
 AmelOr33 TRIVH----MIPCIV---YKLL IATDTSPT-NEIVIASQ--FVSGFIVNSSAVGAVSIA 220
 AmelOr34 TRIVH----MIPCIV---YKLL IASDTSPT-NEIVIASQ--FVSGFIVNSSAVGAVSIA 220
 AmelOr32 TKT I H----MIPCTA---YKLL IAVDTSPT-NEIVIASQ--FLSGFIVNSSAVGAVSIA 219
 AmelOr31 TRIVH----MLPCPV---YKEL I SIDTSPT-NEIVLISQ--FVSGFIVNS IAVGAI SIG 219
 AmelOr36 SMEIY----VLPSPT---YK--IPVD TNPG-HDIVLGFQ--YVAA YITSATV IAFSFA 217
 AmelOr37 SMEIY----VLPSPI---YK--IPVD TNPG-HDIVLGFQ--YLAAY I TSATV IAFSFA 218
 AmelOr38 SMEIY----VLPSPA---YK--IPVD TNPG-HDIVLGFQ--YLAAY I TSATV IAFSFA 218
 AmelOr39 SMEI H----VLPSPT---YK--IPVD TNPG-YG I I LGLQ--FLTGY I MSATV IAFSFA 218
 AmelOr47 SMEIY----VLPFPT---YK--IPVD TNPG-HAI I LGLQ--YLT SF I MSATV IAFSFA 217
 AmelOr48 S MEMY----VLPFPT---YK--IPVD TNPG-HG I I LSLQ--YLT SYTSSATV IAFSFA 217
 AmelOr40 SMEI H----VLPFPT---YK--IPVD TNLE-HSIVLGFQ--FLTGC I MSATV IAFSFA 217
 AmelOr43 SMEIY----VLPFPT---YK--IPVD TNPG-HNIVLGFQ--FLAAY I MSATV IAFSFA 218
 AmelOr45 SMEIY----VLPFPT---YK--IPVD V NPG-HNIVLGFQ--FLAGY I TTGTV IAFSFA 217
 AmelOr41 SMEI H----VLPFPT---YK--IPVD TNLE-HGIVLGFQ--YLTAC I MTAT I IAFSFA 217
 AmelOr42 SMEI H----VLPFPT---YK--IPVD TNLE-HGIVLGFQ--YLTAC I MTAT I IAFSFA 217
 AmelOr44 SIRVY----ILPYPT---YK--VPVD TNPG-HS I L L L L Q--FLTTC I MSTTV IAFSFA 217
 AmelOr46 TIEIY----SLLCPA---YK--LPVQ TNPT-HDI I LGTQ--LLSAFITSSS AAGAFSFA 217
 AmelOr49 TVNIY----NLPCPA---YN--MPVD TNPT-HDI I LGTQ--LLSAFICSSS TAGAFSFA 217
 AmelOr50 TVELY----NLPCPA---YK--IPFD TDPT I HDIMLGTQ--FLSAFVSSSASAFSFLA 218
 AmelOr26 SYSMY----RLPCPF---YTNL LDVRFSPM-NEIVFALQ--LLSGFISTSVTVGACGLA 223
 AmelOr53 NYTIR----PLPYIG---YDPFFDTQSSPT-YE I VYCIH--CFTAMIMYSISTVAYS LT 224
 AmelOr54 NYTIR----PLPYIG---YDPFFDTQSSPT-YE I VYCIH--CFTAMIMYSISTVAYS LA 222
 AmelOr52 NNTFK----PLTYLG---YDPFFDTQSSPI-YE I VFCMH--CFAAMIMYSVTTVAYS LA 221
 AmelOr51 NFTIR----PLTYPG---YEAF LNIQKSPT-YE I IYCMH--CIYVIVVGNITMAAYS LT 221
 AmelOr55 NQTNK----VLIFPA---YS--NSIQKSPI-YE I TYGIQ--CICGYVLD SVTSGACGLA 219
 AmelOr57 NQTIK----MLIYPA---YGG-YNIQKSPT-YE I IYGVQ--CICEYVFD T IASGACGLA 220

AmelOr56 NQTIR----VLIYPT----YG--YNIQKSPI-YEIIYGVQ--FMCYVVDTTITSGACGLA 219
AmelOr58 NRTIK----LLIYPT----YSRLYDVQKSPV-YELVYILQ--CICGYMFDVAITVVGACGLA 221
AmelOr59 NRTIK----PVIYPT----YNGLFNVQKSPI-YEFVYILH--CMCGYVMHVSVTAGACGLT 222
AmelOr60 NHTIK----PVIYPT----YSLGFNVQKSPI-YELIYVLH--CTCGYVMYSITAGACGLA 222
AmelOr61 NRTIK----PVVYPT----YNGLFVDVQKSPI-YELVYLLH--SICGYIMYSVTAGSCGLT 222
AmelOr63 EESAM----KYPVPF----ENTLILINMPENMYFLIFIVE--YLMMLLTSTGNLGSDSL 213
AmelOr64 EESAI----KYPMPS----ENTLTLINMPEKMYFVIFIVE--YLMMLLTSTGNLGSDSL 209
AmelOr66 VESAM----KYPIPS----KNILAIINMPENMYFVVFIE--YIMMLLTSTGNLGSDSL 209
AmelOr65 EENAI----KYPIPS----KNALEIINMPDNLYFVVFIVE--YMMLLFTSIGNLGSDSVF 209
AmelOr67 EKSII----KYPIPS----KNALAIINMPENLSFMVFIVE--YMMLLFTSTGNLGSDSL 209
AmelOr114 -----LLFR----AYFPYDTTSPN-YELTILGQ--FVAALYAATSITAVDTFV 182
AmelOr115 GG-----LLHP----ATFPYETSKSPN-YEITWLGQ--LMGTVLTAICYSCFDTF 201
AmelOr118 -----QKFLVR----MEFFFIATISPR-YEIIILITQ--FIFESFIVYGAATSIALI 188
AmelOr164 -----QKKFLK----MEFPFEATVSPL-YEIIITIQ--LVMQFMFATMAGFMFTII 197
AmelOr163 TNNELILNKKLLK----MKLPFDFTIFPL-YEFVIVAQ--FVFECFVALTAGMLMAFS 202
AmelOr165 SI-----SRELLFK----MDLPFETNESPN-YEFVVTSSQ--LLIHVSAAFVGTFSALL 195
AmelOr166 TS-----SRELLLK----MNLFFDTNKSPI-YEFVVIQ--YFYQVSAAFVGFVFAAF 195
AmelOr167 NL-----SPELLIK----MDLPFTYDESPI-YEYVFIQ--FIQLFFIASSIYALDALI 201
DmelOr35a IFPPD-----SDPLYIFVPLLLTN--VWVGIVIDTMMFGETNLL 207
DmelOr74a VYPPD-----NTQLHFFIPLLVLN--FWVGFIIITSMFLGELNVM 208
AgamOr3 VE-----HVLHLEELYFLNIRTSMAHYTFYVAIMWPTIYTLGFTGGTKLLTI 228
AgamOr5 VE-----HVLHLEELYWFHTRVSLVDYSIFTAIMLPTIFMLAYFGGLKLLTI 209
AgamOr13 VH-----YTLQMEENFYGLQTRTTTSHYLIFGMFMTPTIYLCAFTGTVKILSI 209
AgamOr15 MH-----YTLQMEENFYGLQTRTSATHYLIFGIVMPTAYLCAFTGTVKLLTI 209
AgamOr17 MH-----FALQIEENFYGLQTRTTTSHYLLFGMIMPTVYLCAFTGTVKTVTI 209
AgamOr16 PE-----FTLHMEESFYRLNVREKLDHYLIFGAIMVPSFLCALVGTAKLVSI 207
AgamOr55 AQ-----YVLHMEEDFYGLQIRSSLRSLMFAIPMVPTSIVCAYVGC AKIMIV 209
AgamOr18 FA-----FTLYLEQGFYWLDNRTSLLGYCVCTVFMPLMYLCAYTATVKVVAV 214
AgamOr14 IRIWEISQVAPHRQFSLHMEQDFYGLQHRNTNILHYTLYIAVIVPMMFVTACTVHMKVLT 227
AgamOr51 VRTWDIS----HRQFSLHMEQSFYGLQHRNTNILHYTLYIAVIVPMMFVTACTVHMKVLT 218
AgamOr12 IQY-----YPNLEESFYWLDNRTSVRGYAVLSVVAFITFIFAVYSQTTKLLTI 218
AgamOr19 IQY-----YPNLEESFYWLDNRTSVRGYAVLSVVAFITFIFAVYSQTTKLLTI 218
AgamOr20 IQY-----YPNLEESFYWLDNRSSVYGYATFSIVALLVFTVASYNNAKLLTI 218
AgamOr21 IRF-----YPNLEESFYGLDNRTSVYGYAAFSIVALLVFAFASYNNAKLLTI 215
AgamOr50 IQY-----YPNLEESFYWLDNRSSVSGYAAFAVALIVFAFASYNHVTKLLTI 217
AgamOr29 FII-----SSEMKCV--LYYLNIRFNLLHFSFYTIVICLLTITSAGSLCKIDMD 209
AgamOr53 -----LYDLDIRYNPLHYSIYAGLIFVLSAISLSLCTKDVID 199
AgamOr30 YVM-----PTEMKSVTFYFLDIRFNLLHYSLYFGAVSGLSVIGSLALCTKDVID 210
AgamOr46 LVM-----ENR-----FYVLDSHYNLGHC FVHQALMFFALYILLVMFTAKAGTL 206
AgamOr47 LIM-----ENR-----LYLIDSHYNLGHC FVHQALMFFALYILLVMFTAKAGTL 206
AgamOr48 FML-----PLMQD---LYGLDVHNNIVHYTISWVAITPFCVFCALILWFKGALF 215
AgamOr49 FLL-----PVESR---FFFLDIRHSIVHYTVFSLACPAFLFTAYLTVVKGLVF 223
AgamOr61 IA-----VQILYGLLSNVWGLIYVLSFAIFYIIMNTLHLEMSILLDGI 223
AgamOr62 PS-----VQIAYGMVTACWGI IYVLSFIVFYTLTGTFRLEMLTARSF 228
AgamOr63 WP-----VQIVYGVLTMGFGGMYCMGFMMCYLLLSIFKLEVDILIRSL 225
AgamOr60 FL-----IQLLYGWATCLWGS LYVLIFAFIYVLLNVFRGEMSLLVESF 221
AgamOr75 SER-----APVLERVADLCYSLVGYVWGWHGATQLTIIVLLRYAITEFRVFLHSL 230
AgamOr76 SER-----APVLERVADLCYSLVGYVWGWHGATQLTIIVLLRYAITEFRVFLHSL 230
AgamOr78 SER-----APVLERVANLCYSLVGYVWGWHGATQLTIIVLLRYAITEFRVFLHSL 230
AgamOr77 FD-----ASHWPLVAKVAFRLYAY--LAYAQLMLTFFGSYIITSSYL 208
AgamOr79 FD-----ASHWPLVAKVAFRLYAY--LAYAQLMLTFFGSYIITSSYL 206
AmelOr99 QQLLR-----VNYIVFDIDDYFFVYVQLAWGSIIVVLTIIAADWYF 214
AmelOr101 QQLLR-----VNYIIFDIDDYFFYIYLQLAWGSIIVVLTIIAADWYF 214
AmelOr102 QQLLK-----VNYLVFNDDDYFFVYVQLAWGSIIVVVTSAVAVDSL 214
AmelOr103 QQLLK-----VNYLFFNDDNYFFVYVQLAWGSIIMVVVTIVAVDSL 214
AmelOr104 QQLFR-----VNYLIFNHNDYFFYIYLQLAWGSIIVVMIIVTVDSL 214
AmelOr98 QQLLR-----VNYMVFNADDYFFVYVQLAWGAIIVMIVITVDSL 213
AmelOr100 QQLYR-----VNYFIFNHEDYFFVYVQLVWSSFVCVIVIIIFDWLY 140
AmelOr97 FQIFK-----MKYFVNE--DEYFYPIYFHSVWSSFVIMITVITDLSY 166
AmelOr105 QNIFN-----VNYIILDNYEYFYIVMHLSCSAVIVIIISVDSL 214
AmelOr109 EFIYP-----TYFVDEQK--YYYPILTHMIAVILVLSVYLACDTNL 201
AmelOr110 EFIYP-----TYFVDEQK--YYYPILMHMIAAILVLSIYACDTNL 201
AmelOr111 ELIYP-----SYFVDEEK--YYYPILMHMIAVALILTSVYVACDTYL 201
AmelOr108 EFIYP-----TYFFIDEK--YYYPILTYMATVILIVSSVYLACDTNL 201
AmelOr107 ELVYP-----SYFVDEQK--YYYLITGHMLAVCLGHVYVYIACDINL 201
AmelOr112 VFLYP-----AYFWLDEK--YVLLLLGHMIIITLLMICFICACDTNY 201
AmelOr113 LYVIP-----GYFVDDDRDYFFYIQLHMSLSIIMVANVYVAYDTCY 202
AmelOr106 VQMPY-----AYYYIENEADYYPILIFSIIVSLLTAMCVYIATDTTL 199
AmelOr122 YFDLL-----FLLDDQSAYIKIFLILNFMNLNIFGLLSITSTESFTN 202
AmelOr125 YFDLL-----FFFDDQSAYIKIFLILNFMNLNIFGLLSITSTESLTN 201

AmelOr123 HYSVI-----FLSNDRRKIDIFLVLNSIIIFTFGLLSLICSELFTN 199
 AmelOr126 HYSLI-----FLSNDRRKCIDIFLVLNSIIIFTFGLLSLICSELLTN 199
 AmelOr127 HYSVI-----FLSNDRRKCIDIFLVLNSIIIFIFGLLSLICSELFTN 199
 AmelOr128 HFSLI-----FLSNDRRTYIDIFMVLNLIILIFGLLSIVCSESLTN 199
 AmelOr129 HFSLI-----FLSNDRRTYIDIFMVLNLIILIFGLLSLICSESLTN 199
 AmelOr133 MLHYV-----TLLSVNGTIYFYILCLDFLFIIFGLLSMICTETIVG 102
 AmelOr134 MLHYV-----TLFSVNGTIYFYILCLDFLVIIFGFLSIICTETIIG 198
 AmelOr131 ILLYV-----TLFSVNRITYFYIILYNFLFVITFGLLSLICTESIVG 200
 AmelOr132 IAHYI-----TIFSDKRIYVDILCLNYMFLMIFVVL SIMSTESILG 200
 AmelOr135 I IHYI-----TLFSVNRITMYFNILCLDFIFVVFIFALLSVICTESIIG 198
 AmelOr136 IVHYV-----TIFSDKSIYMDILCLNYMLLAILVILSATCSILG 200
 AmelOr138 I IHYI-----TIFPNRITYLDILSLNFMFVGFIFGSLSLACTESIFG 106
 AmelOr130 FIYYI-----TTFSHNQSIYLDILDFNFMFTGIFGLLSVACSESITG 200
 AmelOr137 I IHYI-----TIFPNRITMYLDILSLNFMFVGFIFGSLSLACTESIFG 199
 AmelOr139 I IHYF-----TIFFHSRIYIDILCLNYIFLAIISLLSIIICIESMIG 121
 BmorOr20 NITYDLS-----IYYET-FDILNTPNGYIFICVFNWFASYICCSFFCSFDLIL 226
 BmorOr3 NITYDLS-----IYYET-FDILNTPNGYIFICVFNWFASYICCSFFCSFDLIL 226
 BmorOr18 NITYDLS-----IYYET-FDILNTPNGYIFICVFNWFASYICCSFFCSFDLIL 226
 HvirOr6 NSTFEHS-----LYLYPFNTSTDITGYIIACILHWIISYLCSCWFCIINLFL 232
 BmorOr23 NVTLQQC-----VYYALPFDYTGNFKWWYLLVAIFNVQKTFCTSLFILFELSL 227
 BmorOr16 NVTLQQC-----VYYALPFDYTGNFKWWYLLVAIFNVQKTFCTSLFILFELSL 227
 BmorOr4 NVTLQQC-----VYYALPFDYTGNFKWWYLLVAIFNVQKTFCTSLFILFELSL 226
 BmorOr5 NVTLQQC-----VYYALPFDYTGDFKWWYMLVAIFNVQKTFCTSLFILFDLLL 227
 BmorOr22 NMTFQHA-----VYLGPFDYTTDIKGYFVVFILNWHLSHIAASYFCTFDLFL 233
 BmorOr17 NMTFQHA-----VYLGPFDYTTDIKGYFVVFILNWHLSHIAASYFCTFDLFL 233
 BmorOr1 NVTFFHS-----VYFAPFDYSHNFRGYIIMALFNSYVSVTCSIGLVMFDLLM 229
 BmorOr1a NVTFFHS-----VYFAPFDYSHNFRGYIIMALFNSYVSVTCSIGLVMFDLLM 229
 BmorOr1b NVTFFHS-----VYFAPFDYSHNFRGYIIMALFNSYVSVTCSIGLVMFDLLM 229
 BmorOr19 SMEFQYY-----IYFWTPLDYKYNLRDYIIHTLCIYLGATAVTVIIVTFDIFN 226
 BmorOr15 SMEFQYY-----IYFWTPLDYKYNLRDYIIHTLCIYLGATAVTVIIVTFDIFN 226
 TcasOr5 -----ISTSEHSTVKLGWYCNFITEMFLFYFLIVLRSLY 188
 TcasOr7 -----HFLNLENHNLEESVRVFFMLQDLAQSTFNIIEEFML 195
 HvirOr4 ALA-----LTARQVSIPEKPKTSSPLNIYAIRVAPVDSQRSANV 205
 BmorOr13 GLR-----TLLHQSGIESLTEIPNSNEQHTANAILPQPPKSVNN 254
 DmelOr10a VWFTP-----FNMTMPKVLNYPFFPLTYIFIAITGYVTIFMFGGCDGFY 216
 DmelOr33c ELLYP-----AYFPFDLESNRFLGAVALGYQVFSMLVEGFQGLGNDTYT 197
 DmelOr7a LYLPG-----LDWQRSQMQFCIQAWIEFLIMNWTCLHQASDDVYA 212
 DmelOr22c ELPFN-----IILPSFAVQPGVFPPLTYVLLTASGACTVFAFSFVDGFF 211
 AgamOr1 PVP-----AWFPVDYHHSIDIVYGVFLYQTIIGIVMSATYNFSTDTMF 206
 AgamOr4 LEVK-----FYWLENRTSVEDYITFVLIMLPVVVMCGYVGNLKVMTI 210
 DmelOr47b SVYP-----FQWHRDLHPYTFWFLYIWQSLTSQHNLMSILMVDVMVG 227
 AmelOr73 TLPVS-----DWIPYDLSSTELYIISLLYQTVGLLICANASVGNETLI 193
 AgamOr68 FCEIP-----YVDWTVMKGYWTTVILQLFFYITGTCLGILVDYLCAYFTING 207
 DmelOr59a MYP-----AWFPFDWLSHSTRNYIANAYQIVGISFQLLQVSDCFP 197
 DmelOr23a -----MWFPPFDWKNMVAIYIGALVFQEIYGVFQIMQCF AADSFP 192
 AgamOr31 KLP-----LLMDFPFVVKHPVTFTIFFVWCSVAIFWVVLDCVACDSTF 195
 DmelOr2a LYP-----AWFGVDWMHSTRNYVLINIYQLFGLIVQAIQNCASDSYP 202
 AmelOr62 DIPLKLN-----YFLASYCVFGLSPLLLHHVCVLLLQGFIFVNAVHACGNDGLF 218
 AmelOr121 KKLFP-----LPSYIFDVSETPYFEIMYALQSI SLLIAAFCYAGVDNFF 214
 AmelOr140 -----TMYMLYAQHAYALFAIVSYELKTIHLLNNTNLI 183
 TcasOr12 PLSG-----WYFPSTEKSPAFAFYTYQIFTTWVGGLGDISMDFM 205
 AgamOr8 HKQLP-----YFMWYWDWHRPGYFAVTFHLQNWGGFVSAVYFVYLDLDMF 215
 BmorOr9 QFVLP-----YAVLLPFKTD SWIPWLIVYVYSIFCGFTCVLYYATVDVLY 202
 AgamOr40 TLPFP-----CWYPVDVHESPMYELAYIFQVLGQLQVSLVFLGASALF 213
 TcasOr63 PLPG-----WFPYDNTNYSTFFVQS---LSLFI SAYCNTAIDILT 198
 TcasOr4 PLPG-----WFPFDVKTHQIELVIAQT---CGIAIGAFLNSTLDILP 191
 TcasOr13 ILSLP-----YVVCYCFMIEIMFWQFVNSIKIRLILLNERLEQIG 215
 AgamOr24 ILPPG-----FVMPFIDANTLAGYYANYGIQLIMAIYYWIIITVGS DITT 193
 AgamOr54 -----SLLWSIAVEYVLPFGFFIPTVGM DTLQ 190
 AgamOr23 SLAFG-----FYLFPVDYRTPVGFAINWVYQFVQVLEGCIGLMACDSCL 197
 AgamOr64 VVG-----PLYFQIIVEIFTGYLSLGYFVPSICITLMTLQLFRTEMHIL 225
 DmelOr82a ELPMP-----MKFPFNDES PGEVCFLYTVLVTVVVVAYASAVDGLF 203
 AmelOr116 PIAG-----WYPYNVTSTPIFEIACLHQVLVILINCINNIAIDTLI 208
 AmelOr160 PFELP-----MKVNNVYEITKLQTYALFCVYLIPSTLLTIGATGADSL 208
 TcasOr10 -----RQFLKAVKHHEFLQYVEQLGDIYSMWFLQYFSSLF 175
 TcasOr26 TEVCG-----VVSPVWLPFRFDYKPMKQFVYFWQSFCLYSNGGAGTISFAM 191
 AmelOr117 NRHLP-----FIVWYGTDISASPSFEIVFFYQIISSICASVISGLDTS 211
 AmelOr120 NFTIKN-----FPFAASYPIITFYKPFYEIAYISQILATSICCLMLLAIDSLI 201
 BmorOr7 EFP-----FWIQIDYTKSSMFVVVLLYSYVVTTLVGIANTTMDAFM 197
 AgamOr6 QLAFN-----IWWPFDVLGGVKYWFVYPLYVYVIGFTGIIHMAFDCLF 214

DmelOr45a	TPPTP-----MEFNFWLDERKPHFYWPIYVWVGLVAAAAWLAIATDTLF	200
DmelOr67d	QFLIP-----FLDHTTDGGHLLILTAHVILITFGGFGNYGGDMYL	208
DmelOr83c	QYLIPG-----LPLENNYCYVVTYMIQVTMTLVQGVGFYSGLFV	203
AmelOr162	G-----CNGYRITPPQZKGZMVSCKQGLCTLAQTHNRVSIKLT	207
HvirOr3	-----MESLMNQILALEVLAFCVFPGLCRAFAMQGLV	84
TcasOr20	RYGIPCG-----LVVRFLLPFKFDYSPLAELVALYEILVCILGTSVVIIVVTTLI	204
AgamOr11	TGTSAAANITRKGQPIPTPILRSWYPTADGKDKHFLEIYLIQLYIMYVQGLIVPSWHMFM	231
DmelOr56a	AVRRGEE-----HPILLFQLFPFGELCDNFVVGYPWYALGLGITAIPLWHTFI	222
AgamOr28	TIALP-----YLSRFAYSTESTTSFAWYFFLIGVYLLALTLGSGFDSL	232
AgamOr58	ELS-----LLDSVNVLLYPLAMTMSLMFIHTIMIVSTLLSAL	201
AgamOr59	GEPVG-----TEFDHFLYMSCLYFPTVGFVFMGCSIVNAMLVGFLGEM	217
DmelOr1a	FAPVS-----SFRVLLPYDVTQPHVYAMDCCLMVVLSFFCCSTTGVDTL	205
DmelOr13a	NKPPF-----YKMIFPYDAQSSWIRYVMTYIFTSYAGICVVTTLFAEDTIL	212
AmelOr161	VLPFRG-----YFFINQTVSPIFEFLYLFNVITAGGFGGSMIAGATSN	205
AmelOr141	DSSLVPSEAGNILESMSKRHLPYAFFLDVQKTPWYEIVYAVQLIGMNFVGFCTCVGVDTVG	222
AgamOr52	LLATN-----RPLTWTLHLIMRPMTFNGLGAFIATFVSIHTMLTVLHAE	189
AgamOr36	EV PAN-----LAELQWPMVAVHVLSDFDFASRWGAAYNVSLTGMNSIM	211
AgamOr25	PLP-----MYLPYMPHDVTPYWHLNFTFTVMNLMCILFLVIGIDGLL	184
AgamOr45	ALQLP-----FLPPDRNMVYVCINIAHLLLNITIGVFIILLPMDGVL	204
TcasOr3	VYHQEQP-----VNTVSPFGSGTKLRFFVTFIYTMIALTFYAWTIVALDSL	222
DmelOr88a	QLLGG-----WLP CGVRKDPNFYLLVWSFDLMCTTCGVSFVTFDNLF	218
AgamOr22	TLPLG-----YSIPFADYRTHPWYLYNYLLQIVQVQWVALVFGLDGPF	208
DmelOr49a	DFTYKR-----IFPRLTFDSEKPLGYVLAYVIDFTYSQFIVNVSLGTDLWM	212
DmelOr85f	MHCYP-----YFLYDPEKDPVWIYISIYALEWLHSTQMVISNIGADIWL	209
AmelOr119	KYPLN-----TTVSPWHEISFFVETCAVSGLLGIIVMDSMTTFKCSLI	222
DmelOr63a	MLPLP-----SLYP AWEHKGLEFPYYHIQMYLETCSLYICGMAVDFDGVF	233
DmelOr67b	TLTYP-----AIVPYLQLGNYEFPSYVIRFLLQSGPLWCFFAVFGFNSLF	234
BmorOr21	KHMIHDIN-----NPF TDDPEDRFESPFIEIMFVYTFSSFIYIINYVGYDGGF	215
BmorOr11	EFRLEP-----MFDMTYPEPIESYKTSFPVYFILFVFFLFGCYASSLFAVDPLV	213
BmorOr12	ITAWP-----DKTDTSKTASYARIGFYLFWCIHFRISTVFAVICILISI	216
AgamOr33	-----LYRRASAQPDGATVLHAAQTVRADRGRSSAAPRGPPR	191
HvirOr1	MDTYQG-----FVTHFYWPWFNYLPYSIVLGVITQFLHFQSTFIWNFSDLFV	231
HvirOr5	-----TIATLLWNFQDQVIVLISMGLTSRYRRLNEC	156
TcasOr1	-----LI IHVST SAYVATVWINSVINRWKFI EFRKRVLEFD	167
TcasOr2	-----VIGQFLGYFIGLITFVMSQHCVELVSMIKARF	193
TcasOr16	MELSATLDTYVPKSADLFRAPSATSQDQ-----LIENDYNEKNEDLKGVYSTRQELGG	295
AmelOr2	MEFSATLDTYVPNSGELFKAGSAEQPKEQEPVPTPPQGENMLDMDLRGIYSNRDFTT	299
AgamOr7	MELSASLDTYRPNSSQLFRAISAGSKSE----LIINEEKDPDKDFDLGSIYSSKADWGA	295
AaegOr7	MELSATLDTYRPN SAALFRVASAGSKSE----LILNEEKDPDKDFDLNGIYNSKADWGA	279
DmelOr83b	MELSASLDTYRPN SAALFRSLSANSKSE----LIHNEEKDPGT-DMDMSGIYSSKADWGA	296
BmorOr2	MELSAALD TYRPN TAELFRVSTDKT-----EKVPDAVDMDIRGIYSTQQDFGM	291
BmorOr2a	MELSAALD TYRPN TAELFRVSTDKT-----EKVPDAVDMDIRGIYSTQQDFGM	291
HvirOr2	MELSASLD TYRPN TAELFRASSTEK-----EKIPD TVDMDIRGIYSTQQDFGM	290
AgamOr56	VFVETFTWNLVYATSCMFRILQIQVN-----ELSHQSRNEKEWNG	245
AgamOr57	FFVETFTWNLVYATSCFLRILQIQAN-----ELSHQCRNEKEWNG	245
AgamOr26	ITIECFTWNLVYATSCMFRILQIQAT-----ELLSRDRKKEWNI	245
AgamOr27	VFVETFIWNLVYATSCMFRILQILAN-----ELSDRKRNEGIWTV	245
HvirOr9	FTCCTFIHIQFSLLNNDMERLVNEDTPR-----YD-----KT	249
HvirOr7	FTCCTYIRVQFKLLQYDFERMIPDRGIS-----KGK FYEENELRN	233
DmelOr85b	CAVATQLVMHFDFLSNSMERHELSG-----DWKKDSR	239
DmelOr85c	CAVATQVVMHFDYLARVVEKQVLDLDR-----DWSNSR	238
DmelOr85d	CALVTLVVMHFIRLSAHIESHVAGIG-----SFQHDLE	261
DmelOr67a	FAVVLQVIMHYERLAKVLREFKIQA HNA-----PN---GAKEDIR	257
DmelOr67c	VVVITQICMHFNYSMRLEDHPCNSH-----EDKENIE	253
DmelOr92a	IATITQLTMHFNFIANDLEAYEGGDH-----TDEENIK	258
DmelOr69a	CLLT FQLKLHYDGISSQLVSLDCRRP-----GAHK	245
DmelOr69b	NFFGIQLEIHF DGLARQLETIDARNP-----HAKD	245
TcasOr6	KEIGRNWGYEERFKCSVKHHIHVLELLDKI-----	219
TcasOr11	TQNR-----EKFLETVQHHAFALEIPDDL-----	231
AgamOr41	CIQYDILAVKLQDLDELIRSPHPRDAM-----	235
AgamOr42	CLQYELLIERLQQLDERIRSSN-NLKL T-----	240
AgamOr43	AGYADV LKNKINEMNTLLLD AQNSRDR-----	235
AgamOr44	AGYADV LKNKIDEMNIILLDAQNSRDR-----	235
AgamOr66	VTYGGFLFKIECEQFDQDLSGVFQHC EWRTA-----	236
AgamOr67	VTYGGFLFKIECEQFDQDLSGVLQHC EWRTV-----	236
AgamOr72	MARADISIVHLRELENILNNSPKNE-----	232
AgamOr73	MARADISIVHLSELENILNDSTKNE-----	232
AgamOr71	MARTEISILHLGELENMLIDPNKNE-----	232

AgamOr74	MARADISIVHLGELKNMLNDPTKNE-----	232
AgamOr70	MVKADIFIIHLGELEKMLNDPLTMK-----	232
AgamOr69	MTCIDIFIVHLCELETLLKEIHIHEKE-CA-----	236
TcasOr9	SNFKNNVYRALVDSEVSEKIVQTFSKNLHN-----	124
TcasOr18	SNFKNNFYTSLIKLGAEEESIVQNFSDIKT-----	229
DmelOr83a	CSLKNVLASSYVLMGANMTELNQLQAEQSAA-----	263
DmelOr85e	CSLKNLDAHTKLLGGESVNGLSSLQEELLG-----	272
TcasOr24	LEIACNIKLRDLQNCMLVSCFDG-DVEAS-----	234
TcasOr25	LEISSHINLRIEQLKIFIAGCFDR-DFKAS-----	234
TcasOr19	LEISCHIRLRIEQLNAMILNCFNG-DLQSS-----	199
TcasOr22	FEVAQYICLKIKHLNSLLRQAFDDPHEEVI-----	232
TcasOr23	FEVAQYICLKIKHLNRLLEAFDDPCDVVV-----	232
AmelOr168	TSQYKYLRIKFATILKENGESAKDNDK-----	233
AmelOr170	TAQYKYLRIKFAIILKEEREITKDHYKNI IW-----	238
AmelOr169	TAQYKYLRIKFAAILEQ--ETPKDFFYGGII-----	237
DmelOr65b	ICIYAEITFGIEVLCLELRQIHRHNYG-----	227
DmelOr65c	VSIYVEITFAIEVLCLELRHLHQRCG-----	227
DmelOr65a	VSLFFELTSALRVLCIELRNQLQELCLGD-----	259
TcasOr17	AALNMFVGAQCDDLCDNLRNIGQ-----	222
TcasOr21	AALNVYIGNQIDILCNNLRNLKA-----	220
TcasOr56	CGFMMLIKAQFLIVKRELETLIERAQKAAIAENPDNEDNFGRE-----	265
TcasOr15	CGFLMLIKAQFLIVKRELETLVERAQRAG--NPDRGD-FGGG-----	259
AgamOr9	AALLALTNAHLHRLQIQLLKVDANKRMITVSPIDDDAR-----	252
AgamOr65	AALFALTNNAHLHRLQIQLMK-DAKRRMIAVSSFDDNAR-----	255
BmorOr6	VATMMFSCAQLDIIMKKTQQ-----IQEIPLSPELS-----	225
BmorOr10	LSMIMFGCAQLEIIMDKIGK-----VKSWSLDQQPM-----	224
AgamOr34	CYMMHMIGIQLELLGKRFRDLN-----NCE-----	222
AgamOr37	SYLLGMISIQLDLIGKRFRSLH-----TSE-----	234
DmelOr94a	CYFLFHISLLYRLLGLRRLRETKNMK---NDT-----	230
DmelOr94b	CYFMFHIASLFRLLGMRLEALKNAA---EEL-----	227
DmelOr71a	WYLMHLHSLCLRMLGQRSLKQ--H---DDK-----	221
DmelOr46a	SSLFIFLKCQLDILAVRLDKIGRLITTSGG-----	225
DmelOr46b	YSLLCFLKVQLQMLVLRLEKLGVPVIEPDNE-----	225
HvirOr8	AGLMVLAIQALDILGIKLRRTDKEVLEETDSE---T-----	232
BmorOr8	SGLLMAVQTQKIIQTLLSLK---LNPREK---M-----	230
AmelOr68	CGLFVHMYSQEIILKHLKESV-----	217
AmelOr69	WALLMHICSQIEIFNCRLRKIK-----	213
AmelOr70	AGFLVQIYCQFEILEERLKNVQ-----	215
AmelOr71	SGLLIHISCQFEILEHRLKNIG-----	215
AmelOr72	AGLLLQVCCQLDTLVYRLQNIK-----	216
DmelOr19a	GTYLILVSVHTKALALRVSKLGYGAPLPAVR-----	229
DmelOr19b	GTYLILVSVHTKALALRVSKLGYGAPLPAVR-----	229
DmelOr33a	PITFCVVGHVRLIMRLSRIGHDVKLSSE-----	224
DmelOr33b	PMTFCVVGHVRLIMRLSRIGHDVKLSSE-----	226
DmelOr22a	LISMLMARCHISLLKQRLRNLRSKPGRTEDE-----	239
DmelOr22b	LISMVIARCHITLLKQRLRNLRSEPGRTEDE-----	239
DmelOr42b	LIYTLILRAHLDMLRERIRRLRSDENLSEAE-----	239
DmelOr59b	LMFTIMFRAHMEVLKDHVRSRLMDPERSEAD-----	240
DmelOr59c	IVFISLFRCHLAILRDRIANLRQDPKLSME-----	242
DmelOr98a	LLYGLILRVHLKLLRRLRVESLCTDSGKSDAE-----	237
DmelOr42a	VNFVVLVRAHMSIFAERLRLRGTYPYESQEQ-----	242
DmelOr85a	IIVVVVLR IHMELLSERIKTLRTDVEKGDDQ-----	237
DmelOr43b	VIYVAALRTHILLKLDRIIYLGDPSPNEGSSDPSY-----	242
AgamOr2	ATCTLFALVQIAALKQRLGRLGRHSGMTAST-----	219
AgamOr10	ASSTLFGLVQIKTLQHQLKTFR--SSEMLN-----	217
DmelOr30a	VTFTLFAILMCRVLQHKLRSLKLEK-----	221
DmelOr49b	VGLIMFGIVRCKALQHRLRQVALKHPYGDR-----	218
DmelOr43a	AGLAIFGKAMLQILVHRLGQIGGEEQ-----	218
AgamOr32	SEMASNLTIHFDIVRERFEKL-----	217
AgamOr35	SELATSVTIHFQLIQRQFQAV-----	229
DmelOr47a	CSFTSNLCAFFKIAQYKVVR-----	221
DmelOr98b	CSLSHNLCALFQIARHKMMHF-----	222
DmelOr9a	FFFTYNVCAIFKIAKHRMIHL-----	233
AgamOr38	SGVCLYMDGQFQAIRLELEALAETVDKY-----TLK-----	249
AgamOr39	SGVCLYIYGQFQAIRLEVEALAETVDRN-----TLK-----	250
DmelOr24a	LGFCLYFTVLLCLQDDVCDLLEVENI-----EKS-----	229
DmelOr45b	FGFTLYMAFLLQALRYDIQDALKPI-----RD-----	238
AmelOr74	CILNLHALYQFRMMQQELSKIWSAIEQQ-----TT-----	232
AmelOr86	CVLNMHVVCQFRILQHRLTKLWSIIDER-----AD-----	232
AmelOr75	CIVNLHVAGQFRILQHRLKNLG-----NAIRDET-----	231

AmelOr84	CIVNLHVAGQFRILQHRLRNLN-----VAVTGDR-----	229
AmelOr87	CLMNLHAATQFRILQHRLSDLGSGWDTRRSFNKIDRET-----	256
AmelOr76	CILNLHTASQFRILQHRFANTCNEKRG---K--RDED-----	234
AmelOr85	CIINLHIAGQFRILQHRFSNVNEMCE---KCCYQLSR-----	239
AmelOr88	FVINLYTAGQFRILRYRFENICGKNDD---KNYKYSK-----	238
AmelOr91	CIMNLHLAGQFKVLQYRISTIADRVIK---EKKKELI---	238
AmelOr92	CIMNFHVAGQFKVLQHRISTIADLTIKT---EKKKELI---	235
AmelOr95	CIMNLHVAGQFQVLQYRISNIIDSIDK---EKKEKLIM-----	234
AmelOr93	CIMNLHVAGQFQVLQYRISNIYXRFN---EKKEKLIV-----	224
AmelOr77	CVLLNLQLAGQFQILQYKMANIVDLLKE---KNEKRII-----	237
AmelOr94	CIMCLHLASQFRILQYRLANVSNVEDE---EGVE-----	233
AmelOr96	CILCLNVACQFRILQYRIANVPILKMK-----GNPD-----	233
AmelOr79	CIMAVHLAGQFRILRYRLTKLC---EQEI---YEKDS-----	233
AmelOr83	CIMAVHLAGQFRILRYRLMTLCDTEPET---REKDSRS-----	238
AmelOr80	CIMAVHLAGQFRILRYRFTKLCDEMEYGI---KENSQS-----	236
AmelOr81	CIMAVHLAGQFRILRYRFTKLCDEVEY---ENSQS-----	233
AmelOr82	CIMAVHLAGQFRILQYRLTKLYDVEICIE---MHKKDS-----	235
AmelOr78	CIMAVHLAGQFRILQYRFTKLCDTDNQI---CKKNL-----	235
AmelOr89	CIMTVHLAGQFQILRHRFDRLCNAEDRI---AEKG-----	235
AmelOr90	CIMAIHLTGQFRILGYRFAKLCNIEHEM---REKDTV-----	234
AmelOr142	ALLLRYATARFEILGIQFNNAKS-----	218
AmelOr146	ALLLFAAARFEILMNELRAVEN-----	218
AmelOr148	ALLLWFAAARFECLVEELQKITN-----	215
AmelOr158	ALLLWFATARFECLIKELQKITS-----	216
AmelOr147	ALLLWFTSARFECLVKELQKITT-----	216
AmelOr150	ALLLWFTAARFECLIVELKKITN-----	218
AmelOr151	ALLLWFTAARFECLAVELQKITN-----	218
AmelOr152	ALLLWFVSARFECLAVELQKITD-----	218
AmelOr154	ALLLWFTVARFECLIEEFQKCSN-----	218
AmelOr155	ALLLWFTVARFECLIVEFQKCTD-----	218
AmelOr157	ALLLWFTTARFECLIGELRGVTS-----	215
AmelOr156	ALLLWFVVIKFECLIMKIQNISN-----	218
AmelOr153	--LLWFTAPRFECLCVELQNVTN-----	202
AmelOr144	VILFSFPAAKLDVLRSKLRHVNN-----	219
AmelOr145	VILFSFPAAKLDVLGSKLQNVNN-----	220
AmelOr143	VILFSFPAAKLDVLRSKLRHVNN-----	214
AmelOr1	ASITMHCCGLFEVTNRKIKTLCKWN-----	241
AmelOr3	ASITMHCCGLFEVTNRRIETILK-----	244
AmelOr6	LMLSLHMCSLLKILRRKMIDLADGSIT-----	235
AmelOr7	LMLSLHMCSLLKILRRKMIDLADGSIT-----	235
AmelOr4	LMLSLHMCSLLKILTRKMADLTDGSI---	237
AmelOr5	LMLSLHMCSLLKILTRKMANLTDRSIT-----	237
AmelOr8	LMVCMHMCGLLRILTNKLTDLTNDND-----	238
AmelOr9	LMLCMHMCGLLRILTNKVELTSDKD-----	238
AmelOr11	LMLCLHMCGLLKILTNKVMDLTNDSD-----	236
AmelOr12	LMLCLHMCGLLKILTNKVMELTNDKD-----	238
AmelOr10	LMLCMHMCGLLRILTNKVMELTNDND-----	237
AmelOr14	VMFCLHSSLLRILLNKIYQLTKQLDV-----	239
AmelOr15	AMLCLHATSLLRILVKKINELTKQPDI-----	240
AmelOr13	TMLCLHMCSSLEILINKMNDLTCQSD-----	231
AmelOr16	ALLVLHACSMRLILVNKIKKLVKSDM-----	242
AmelOr17	ALLVLHAWSMRLILVNKIKKLVKSDM-----	242
AmelOr18	ALLAIHACGQLQILMSWLEKLVDRK-----	250
AmelOr19	ALLAMHACGQLQILMSWLEKLVDRG-----	250
AmelOr22	AIFAVHACGQMQVLSNWLKHLINGRS-----	251
AmelOr24	AIFAVHACGQMQVLSNWLKHLINGRS-----	243
AmelOr20	ATFAVHACGQMQVLMNWLQHLIDGRL-----	247
AmelOr25	AVFAVHACGQMQVLMNWLQHLIDGRL-----	242
AmelOr29	AVFAIHACGQMQVLMNWLNLHLVEGRS-----	243
AmelOr30	AVFAVHACGQMQLMNWLECLVDGRS-----	243
AmelOr21	AIFTVHACGQIQVMMIWLHLEHLEGR-----	243
AmelOr23	AILTIVHACGQIQVMMVWLKHLIDGRL-----	243
AmelOr35	AVFVMHACGQFQILVTKLRLIDGLKED-----	250
AmelOr27	AVLAAHAYGQLSVVMVWITEFVNQSR-----	244
AmelOr28	AILGAHACGQLSVVMTWITEFVNKSK-----	245
AmelOr33	AVFAAHACGQINLLMAWIRQLVNHSN-----	246
AmelOr34	AVFTAACGQVSLLMWIRQFVDHSN-----	246
AmelOr32	AVFAAHACGQLSLLMVWIREFVDHNS-----	245
AmelOr31	AVFTAACGQLTIKRWIREYINRSK-----	245
AmelOr36	TVFACHASGQLTIMIWIIEEFINRS-----	242

AmelOr37	TVFACHASGQLTIMIIWIKEFINRP-----	243
AmelOr38	IVFACHASGQLTIMIIWIEEFINRP-----	243
AmelOr39	TVFACHTIGQLTIMVTWIEEFINRP-----	243
AmelOr47	TVFACHAIGQLTIMISWIQEFVNQP-----	242
AmelOr48	TVFAYHAIGQLTIMISWIQEFVNQP-----	242
AmelOr40	TVFACHAAGQLTIMVTWIKEFVNRP-----	242
AmelOr43	TVFACHAIGQLTIMITWIEEFVNRP-----	243
AmelOr45	TVFACHAVGQLTIMITWIEEFVNRP-----	242
AmelOr41	TVFACHAVGQLTIMVTWIEEFVNRP-----	242
AmelOr42	TVFACHAVGQLTIMVTWIEEFVNRP-----	242
AmelOr44	TVFAYHAVGQLTIMVTWIEEFVNRP-----	242
AmelOr46	AVFASHALGQLNIMVAWINEFVNRP-----	242
AmelOr49	AICASHALGQLNLMVIWINEYVNRP-----	242
AmelOr50	TIFTCHVLGQLNIMMIWINEFVDRLQ-----	244
AmelOr26	AVLAMHACGQFNVMIRSDKLVKDNNE-----	250
AmelOr53	TIFVTHICGQIQVQIARLQDLVESK-----	249
AmelOr54	AIFVTHICGQIQIQIARLQDLVECK-----	247
AmelOr52	AIFVTHICGQIQIQATRLQNLVENK-----	246
AmelOr51	TIFITHACGQIKIQMLRLENLKNK-----	246
AmelOr55	ALFVTHACGQIDVVISRLDDLAVAGQF-----	245
AmelOr57	ALFVTHACGQIDVIMSRLDDLAVAGQ-----	245
AmelOr56	ALFVTHACGQIDIITSRLDDLAVAGQF-----	245
AmelOr58	ALFATHICGQIDIVMAKLEDLVDGKF-----	247
AmelOr59	ALFATHACGQIDIVIARLNDLIHGKY-----	248
AmelOr60	ALFVTHACGQIDIVIARLNDLVHAKY-----	248
AmelOr61	ALFATHACGQIDIVIARLNDLIHGKY-----	248
AmelOr63	FSIVFHLCGQVEILRLEYNKLSNENE-----	239
AmelOr64	FGIAFHLCGQVEILRLEYNKLSNENE-----	235
AmelOr66	FGIAFHLCGQVEILRLKYNKLSNENE-----	235
AmelOr65	FGIVFHLCGQVEVLKREYSKLFNKNE-----	235
AmelOr67	FGIVFHLCGQVEILKLYNKLSNTNE-----	235
AmelOr114	AMLILHVCGQLSGIKNELSRLP-----	204
AmelOr115	AVLVLHLCGQLTVLGTALDELVNATR-----	227
AmelOr118	AALILYVGSQIDLFCQNLT--FHSYK-----	212
AmelOr164	ATFVLHIASQLDIICDRLSEILDEHK-----	223
AmelOr163	AALVLHIGSQIDITCQELI---EIPR-----	225
AmelOr165	LMMVLHIGCQIDILCQNLLDIPHIST-----	221
AmelOr166	LMIVLVHVCQIDIMCQTLMKTTHRDQ-----	221
AmelOr167	ITLIFHIGGQIEILHKTLLKNISINDE-----	227
DmelOr35a	CELIVHLNGSYMLLKRDLQLAEKILVA-----R-----	236
DmelOr74a	GELMMHLNARYIQLGQDLRRSAQMLLKK-----S-----	237
AgamOr3	FSNVKYCSAMLKLVALRIHCLAR-----	251
AgamOr5	FSNVKYCSAMRLVAMRIQFMDR-----	232
AgamOr13	CNITMYCTLYFQLVQLKLRAT-----	231
AgamOr15	CNITTYCTLYFQLVQLKLRAT-----	231
AgamOr17	CDTTIHICILYFQLAQLKLRIVT-----	231
AgamOr16	LSLIKYCTIYFQLVKVLEEVEG-----	229
AgamOr55	FNFTSYCTVYFRLVALQLQYQT-----	231
AgamOr18	FNMIKYCQTVLRIVVLKLRLLKTL-----	238
AgamOr14	ASSVRYAEMLLHVMLKVDNLHRI-----	251
AgamOr51	ASSVRYAEMLLHIVMLKVD---SL-----	239
AgamOr12	LSTIKYCSTLLQLVNIAIEGLSS-----	241
AgamOr19	LSTIKYCSTLLQLVNIAIEGLSS-----	241
AgamOr20	LTTIKYCNLTLQLVIEVDNLNH-----	241
AgamOr21	LSTIKYCSTLLQLVGVEVDNLNH-----	238
AgamOr50	LSTIKYCSTLFLVLSIGIDELNL-----	240
AgamOr29	VAVIKTTCLLFQTTAMQIRELKDN-----	233
AgamOr53	IAAIKTVTLVFGIVTMQIRDLHEQ-----	223
AgamOr30	FSLIRTASMLFQATAQQIRNLPPG-----	234
AgamOr46	FGLIRFCSTVLGIIVLKIERLSQIGPV-----	233
AgamOr47	FGLIRFCSTVLGIIVLKIERLSQIGPV-----	233
AgamOr48	M-LIRYNTLLYQLVNRLQLQYDRESAG-----	241
AgamOr49	IGIIVYNTLYQLVSRGVRELK---SLD-----	248
AgamOr61	TSVQFTVMRRLKQRMETLAASGHSSTQ-----	250
AgamOr62	QOLEETLVP-----TGVMDDQNEW-----	248
AgamOr63	EEVER-----SDRLESDFGDSAD-----	243
AgamOr60	ERIDECFHKYR---PELNTASAGEREE-----	245
AgamOr75	DSLDDQLQQ-----RREQSQGAPDEE-----	251
AgamOr76	DSLDDQLRQ-----RREQAQGAPDEE-----	251
AgamOr78	DSLDDQLRQ-----RREQSQGAPDEE-----	251

AgamOr77	LTLTIELRILN----DSYAAAPTDPQQ-----	231
AgamOr79	LTLTIELRILN----DSYAAAPTDPQQ-----	229
AmelOr99	ILIIHFNSGLFAVCGVQVLEATMNSNL-----	241
AmelOr101	ILIIHFNSGLFAVCGVQVLEATMNSNL-----	241
AmelOr102	ILIIHHCSGLFTVCGYQVQKVISNAKS-----	241
AmelOr103	ILIIHHCSGLFTVCGYQVQVQVTGNAKS-----	241
AmelOr104	MIIIIHSSGMFAMCGYKVQEATKYQNL-----	241
AmelOr98	IIIIHHVCGLFAVCSYEIQKTVKDLTV-----	240
AmelOr100	ILIIHNSGMFAVCGYQIQKIFAEK-----	165
AmelOr97	MLIIHHASGLFAMCGYQIAKATECN-----	191
AmelOr105	ISIIYHACGLFAACGYQIQKLTQVHTI-----	241
AmelOr109	VQIVVHGCALLAISGYHFKHAVDDVKFC-----	229
AmelOr110	VQVVHGCALLAISGYHFKHAVDDVKIC-----	229
AmelOr111	VYIVVHGCALLAISGYRFBKHAVDDIKLC-----	229
AmelOr108	VQIVVHGCALLAISGYHFKHAVDDMKFS-----	229
AmelOr107	IHVVHGCALLTISGYHFKHAMDNVDLC-----	229
AmelOr112	VYAVQHACGLLAIKRYRFBKHVCKNLK-----	227
AmelOr113	MVVFVQHVCGLLAVAGYRFBKHVCKNLK-----	228
AmelOr106	VYVVQHACGLLTLAGYRFRNSLNDLYS-----	226
AmelOr122	IFSYYIC-RQFNIVNYRIRKIIDLS-----	227
AmelOr125	IFSYYVC-RQFNIVNYRIRKIIDLS-----	226
AmelOr123	IVSYYIC-RQFHIVCYRIRKIIDLS-----	224
AmelOr126	IFSYYIC-RQFHIVCYRIRKIIDLS-----	224
AmelOr127	IVSYYIC-RQFHIVSYRIRKIIDLS-----	224
AmelOr128	IFSYYIY-RQFDIVSYRIQKIIDLS-----	224
AmelOr129	IFSYYVC-RQFDIVSYRMRKIIDLS-----	224
AmelOr133	IYIYHTS-ILFKIISHRIQKIITYL-----	127
AmelOr134	IYIYHTG-VLFKIIISHRIQKIITYL-----	223
AmelOr131	LYSYHTG-MLFKIISYRIRKIIDLS-----	225
AmelOr132	LYSYHTS-MLFKIISYRIQKIIDLS-----	225
AmelOr135	LYSYHIS-VLFKIIINHRIQKIITYL-----	223
AmelOr136	LYSYHTS-IMFKIIGHRIQKIVKYL-----	225
AmelOr138	LYCFHAN-ILFKIISYRIQKIVTYL-----	131
AmelOr130	IYSYYIC-ILLKIVSYRIQKIIMYLA-----	225
AmelOr137	LYCFHAS-ILFKIISYRIQKIVTYL-----	224
AmelOr139	LYTIVTTSLFFKIIIGYRIQKIITXL-----	147
BmorOr20	SLMISTVSGHFRILIHNLTPFLPEAITASKKFVDKHR-----	264
BmorOr3	SLMISTVSGHFRILIHNLTPFLPEAITASKKFVDKHR-----	264
BmorOr18	SLMISTVSGHFRILIHNLTPFLPEAITASKKFVDKHR-----	264
HvirOr6	SLLVFNLWGHFKILISTLNEFRP-----SSKSVDTQ-----	264
BmorOr23	SLMIICLWGLRIFIHNLNHPAP-----	251
BmorOr16	SLMIICLWGLRIFIHNLNHPAP-----	251
BmorOr4	SLMIICLWGLRIFIHNLNHPAP-----	250
BmorOr5	SMMIHLWGLRIFIHNLNHPAP-----	251
BmorOr22	SLLILHLWGLRILNLLKTFPKPY-----	258
BmorOr17	SLLILHLWGLRILNLLKTFPKPY-----	258
BmorOr1	CLMVMHVWGHKLILSHNLINFRPKA-----	255
BmorOr1a	CLMVMHVWGHKLILSHNLINFRPKA-----	255
BmorOr1b	CLMVMHVWGHKLILSHNLINFRPKA-----	255
BmorOr19	FIAVFHVVAHIQILKNNVKS-----	246
BmorOr15	FIAVFHVVAHIQILKNNVKS-----	246
TcasOr5	SLLNCTKFESAQVVKELG-----	208
TcasOr7	AKILIDFFYASTDVFYGTAS-----	215
HvirOr4	SLLVDTMTGREHVVIKRTASGEPRLIV-----	233
BmorOr13	SIDTLAFVVTKRVRFPPTAGWMDQR-----	279
DmelOr10a	FEFCAHLSALFEVLQAEIESMFRPYTDHLELS-----	248
DmelOr33c	PLTLCLLAGHVHLWSIRMGQLGYFDDDET-----	225
DmelOr7a	VIIYLVVRIQVQLLARRVEKLGTDSDSQVEIYP-----	245
DmelOr22c	ICSCLYICGAFRLVQQDIRRIFADLHG-----	238
AgamOr1	SGLMLHINGQIVRLGSMVKKLGHVPPERQLVATDAEWKEMRKR-----	250
AgamOr4	CCSIGHCTLYTRMTIEMVEQLESMA-----	236
DmelOr47b	ISTFLQTALNLKLLCIEIRKLGDMESV-----	254
AmelOr73	AGLMIQAGVQFEIFCHRAQNLP-----	216
AgamOr68	SLYVDILRFHLDSETSELLASPGYQTRNS-----	235
DmelOr59a	AVVLCLISSHIKMLYNRFEEVGLDPA-----	224
DmelOr23a	PLVLYLISEQCQLLILRISEIGYGYKT-----	219
AgamOr31	GTFSSCLVAHFVIIQERFEGLRFDDG-----	221
DmelOr2a	PAFLCCLLTGHMRALELRVRRIGCRTEKSNKG-----	233
AmelOr62	FSLTMHLGQFEILKTRIAKIEFVDR-----	244
AmelOr121	GILILHICGQLTNLRFQLANIKESSEAS-----	241

AmelOr140	NVTDHLLLEKYKNITLLSKDEKK-----	206
TcasOr12	SGTIMVISTQLSLLKDGLENVARNIKHD-----	233
AgamOr8	CAIVLLLLCLQFDIVAYRLSHALPDDH-----	241
BmorOr9	CVMTSLVCNNSLISFKLQVMNRN-----	226
AgamOr40	MVFFVVCQFDMCLCCSLSNVRQSAMILNGGYGPELRDYQDNYELDTRDYVLQEVFREDL	273
TcasOr63	WKLITLASAQFEILKENLTKIDYEGG-----	224
TcasOr4	TILITLGSAQFDILKIRLENITSVDTS-----	218
TcasOr13	GEDFTIVRIDRKKINSIVDTLKVKKKQ-----	243
AgamOr24	IYNLLTAYGQLDVLMTITEELNEQLERN-----	221
AgamOr54	GYTLNYGFQMLETTLMVIGIISSES-----	215
AgamOr23	LVLIMNATGQMDVIVYLKQLTLLIDNNHTG-----	228
AgamOr64	TTTLKQAANEEQQQQHQHVAVDIRCAJR-----	253
DmelOr82a	ISFAINLRAHFQTLQRQIENWEFSPSE-----	230
AmelOr116	TGFIIITCCQLTILKKCIARNNNINIEK-----	236
AmelOr160	VTLTFHLCSQLSIVAYRMRNVNIEPK-----	234
TcasOr10	GICFGLFLISKEGLPTEPERLSKYFP-----	201
TcasOr26	SETIEHLILRVEDLKILFPKIVAERSP-----	218
AmelOr117	MTIILHVSQGFKLINIWINNIGIEINC-----	239
AmelOr120	ATALLHTCGHFTVLKENLKNLDTYIYDLTKTNLKTN-----	237
BmorOr7	ATILGQCKTQFTILRIKFETLPTRAKQALRCD-----	229
AgamOr6	CILAAHLCMQFRILAHNFVGHVVEVANG-----	241
DmelOr45a	SWLTHNVVIQFQLELVLEEKDLNGG-----	226
DmelOr67d	FLFVTHVPLIKDIFCVKLTFFNELVMKR-----	236
DmelOr83c	FLGLTQILTFADMLQVKVKELNDALEQKAERY-----	235
AmelOr162	KFQLILTYLFFFLIFQISRFLS-----	230
HvirOr3	CSMIMYLCDQLTHLQTELRDLTYVKES-----	111
TcasOr20	CGVLIIHITVQLQCLRKIILDLQVND-----	230
AgamOr11	VTLMIYGRTECSVLNHRLCFLERYHTAGKDD-----	262
DmelOr56a	TCLMKYVNLKQLILNKRVEEMDITRLNSKLVIG-----	255
AgamOr28	STLVMHIKMMFKVLKFEIEQLGLDLASG-----	260
AgamOr58	SLEFYWLGQEFQVFAQCNTFAATARKR-----	229
AgamOr59	ELLATCLGELFETVERQVKEEGPTGRPD-----	245
DmelOr1a	GWALGVSLQYRRLGQQLKRIPSCFNP-----	232
DmelOr13a	GFFITYTCGQFHLLHQRIAGLFAQSN-----	238
AmelOr161	LVVIIHSGKFAVLRRRMEALNGADPN-----	232
AmelOr141	ALFILIICGYFDTIQSRIENLHSFDTSLSSLLNLSR-----	260
AgamOr52	LLVEFAFDGLLERVERHVQAGAQESP-----	216
AgamOr36	MGLYDELTSIAQEYGRLLTKEKNGQAD-----	238
AgamOr25	VLSILAAVHQIKLLKITIQLDGAEQ-----	211
AgamOr45	IVALLNICTRIAALQLLLEELDAKLG-----	230
TcasOr3	ITIMSCISSHLKILQGAFKTVRARCIMR-----	250
DmelOr88a	NVMQGHVLMHLGHLARQFSAIDPRQSLTD-----	247
AgamOr22	YLFVCYSASQLEILIVYLRQIGERPDN-----	235
DmelOr49a	MCVSSQISMHLGYLANMLASIRPSPETE-----	240
DmelOr85f	LYFQVQINLHFRGIIRSLADHKPSVKHD-----	237
AmelOr119	TMLLDALSVNFENCNGETKRTICNRHGKEER-----	253
DmelOr63a	IVLCLHSVGLMRSLNQMVQATSELVPP-----	261
DmelOr67b	VVLTRYESGLIKVLRFLVQNSTSDILVP-----	262
BmorOr21	GLCINHAACKMKLYCRALEDAMRSESR-----	242
BmorOr11	PIFVLHACGQLDLLSLRITKLFSDTKNP-----	241
BmorOr12	KYQYKILCSYFESLNKIFDDETSSHEVK-----	244
AgamOr33	RPVDTGPGVQCDSTPAVAVVSIKTR-----	218
HvirOr1	ICMSYYLTSRLEQVNRKLLAAQGYLP-----	258
HvirOr5	LAKVCELEKQHKDSKKIEAVKVY-----	180
TcasOr1	VKCVSNYTKQQSKIHLIVRSVFTTY-----	193
TcasOr2	VVVNQIGGIVTYFSTNLPKRETEVRK-----	220
TcasOr16	HFRG--GALQNFSGSGVGN-----GLTKKQELMVRSAIKYWVERHKHVRLVTAI	344
AmelOr2	TFRP--TAGMFTN--GGVGN-----GLTKKQEMLVRSIAIKYWVERHKHVRLVTAI	347
AgamOr7	QFRAP--STLQTFDENGNGN-----PNGLTRKQEMMVRSAIKYWVERHKHVRLVSAI	347
AaegOr7	QFRAP--STLQTFDNGINGN-----PNGLTKKQELMVRSAIKYWVERHKHVRLVSAI	331
DmelOr83b	QFRAP--STLQSFGGNGGGLVNGANPNGLTKKQEMMVRSAIKYWVERHKHVRLVAAI	355
BmorOr2	TLRGAGGKLQNFNAEN--NPN-----GLTAKQEMLARSIAIKYWVERHKHVRLVASI	341
BmorOr2a	TLRGAGGKLQNFNAEN--NPN-----GLTAKQEMLARSIAIKYWVERHKHVRLVASI	341
HvirOr2	TLRGAGGRLQNFQGNPNPN-----GLTPKQEMLARSIAIKYWVERHKHVRLVASI	341
AgamOr56	KLKT-----FIALHDSVLRSAETL	264
AgamOr57	KLKT-----FIALHDSVLRSAETL	264
AgamOr26	KFKT-----FIALHDSVLRSAETL	264
AgamOr27	EFEK-----FSTLHDSVLRSAETL	264

HvirOr9	KFKE-----LAVRHIELMRCVNL	268
HvirOr7	KFTE-----LLKWHQDI IYSSTIL	252
DmelOr85b	FLVD-----IVRYHERILRLSDAV	258
DmelOr85c	FLAK-----TVQYHQRLRLMDVL	257
DmelOr85d	FLQA-----TVAYHQSLLHLCQDI	280
DmelOr67a	KLQS-----LVANHIDILRLTDL	276
DmelOr67c	FLIG-----IIRYHDKCLKCEHV	272
DmelOr92a	YLHN-----LVVYHARALDLSEE	277
DmelOr69a	ELSI-----LIAHHSRILQLGDQV	264
DmelOr69b	QLKY-----LIVYHTKLLNLADR	264
TcasOr6	-----NKVYSVMLLNQHLCSLFVQLTQVMDKV	246
TcasOr11	-----GHVT-----KYVPYVI	242
AgamOr41	-----IGCKLRSILRNQQRLIRFIANI	257
AgamOr42	-----VRDQLVKIIQLQQUESTKYITHI	262
AgamOr43	-----TSVKLKLREIVLLHQRVLEYEDDL	259
AgamOr44	-----TPVKLKLREIVLLHQRVLEYEDDL	259
AgamOr66	-----VYKTFCRQRMRAIYQYHQSVIFYLES	263
AgamOr67	-----VYKTFCRQRMRAIYQYHQSVIFYLES	263
AgamOr72	-----EHSALRHKWVQCMHDHQSTSFSTI	259
AgamOr73	-----EHSANVRHKWIQCMHDHQSTSFSTV	259
AgamOr71	-----EHTEDIRRKWVQCMHDHQSTSFSTI	259
AgamOr74	-----ERTAEIRRKWIQCMHDHQSTSFFTMI	259
AgamOr70	-----KNQSSVREKWVQCMFEHQQTTFNLNSI	259
AgamOr69	-----KQTSIMRQKWIQCMQDHDQATSFNLNT	263
TcasOr9	-----DSFN-----EEIFEIMNSAKFKNNARY---	LRKNVKHHQQLLYCADV 165
TcasOr18	-----HEFRSFYIKYGNIFKILNNAKFQTLNRAF---	LKRNIKHHKLLRRCEDL 276
DmelOr83a	----DVEP--GQYAYSVEEETPLQELLVKVGSSMDFSSAFRLSFVRCIQHHRIVAALKKI	317
DmelOr85e	----DSKRELNQYVLLQEHPDLDLRLSAGRKCPOGNAFHNALVEICIRLHRFILHCSQEL	328
TcasOr24	-----RRRLNECIKYHKEIISYSEIF	255
TcasOr25	-----RERLDFCIRYHNVIDFSERF	255
TcasOr19	-----RKRLNDCVQYHIDIISYSERF	220
TcasOr22	-----EKRLHLCIRYQQHIIRTNELF	253
TcasOr23	-----EQKLLHLCIRYQQHIIRTNELF	253
AmelOr168	-----TIRQEMKLLIRHFETVIEMTGIL	256
AmelOr170	----RN-----DNVRQEMKLVTRHFETVIETTTIL	264
AmelOr169	----WQNV-----PCEYDKMVKQEMKLLTRHFEIVVEMTML	270
DmelOr65b	-----LQELRMETNRLVKLHQKIVEILDRT	252
DmelOr65c	-----YEQLRLETNRLVQFHQKIVHILDHT	252
DmelOr65a	-----EDMLYRELCRMTKFHQQIILLTDRC	284
TcasOr17	-----NSKEIGKNLVKICIEHHREILR-----	243
TcasOr21	-----GCS-IERDLITCIKHHQEILK-----	240
TcasOr56	-----IERIELLDKRTQDYVAKYANECVYHHQELIALCDHA	301
TcasOr15	-----INRIEMLDGTVFVEKCANECVYHHQELIALCEHA	295
AgamOr9	-----SVPKSDADVYNELLQCIIFHQEVTGFLREV	284
AgamOr65	-----SVPKSDADEVYNELLQCIIFHQEVTGFLREV	287
BmorOr6	-----SRNRSELHEKNNGILIDCIKHHQAIVRFSELC	257
BmorOr10	-----QKQ--EVLNSNYELLVCEVRRYQSVVRFIELT	254
AgamOr34	-----EFDRSFVPLVQHYNKIHRMLCRV	245
AgamOr37	-----QFRESFVGLMNHGKVRMTAEI	257
DmelOr94a	-----IFGQQLRAIFIMHQIRSLTLTC	253
DmelOr94b	-----AR-PELRRIFQLHTKVRRLTREC	249
DmelOr71a	-----DLREKFLLEIHLHQRLKQQALSI	244
DmelOr46a	-----TVEQQLKENIRYHMTIVELSKTV	248
DmelOr46b	-----KIAMELRECAAYNRIVRFKDLV	248
HvirOr8	-----SRQHRDNHKEAIKKINHCI IHYEKIHKYCSLV	264
BmorOr8	-----DRGLMN--ITEVLKLNELKHYELVLKYCSTV	260
AmelOr68	-----NVENRLNIGKIVYFHNLYGYAFMV	242
AmelOr69	-----HEKNEVTK-LCIHYHNLIYRLATTI	237
AmelOr70	-----QDESNYSAKQCVKHYHQIYKFSRTL	240
AmelOr71	-----SDK-NYTMKQCVRHHNHLYKYGEMV	239
AmelOr72	-----EDA-IQSLKYCARQHELIYRFTELM	240
DmelOr19a	-----MQAILVGYIHDHQIILRLFKSL	251
DmelOr19b	-----MQAILVGYIHDHQIILRLFKSL	251
DmelOr33a	-----NTRKLIIEGIQDHRKLMKIIRLL	246
DmelOr33b	-----TGKQLIESIEDHRKLMKIVELL	248
DmelOr22a	-----YLEELTECIRDHRLLLDYVDAL	261
DmelOr22b	-----YLKELADCVRDHRLLLDYVDAL	261
DmelOr42b	-----SYEELVKCVMDHKLILRYCAII	261
DmelOr59b	-----NYQDLVNCVLDHKTILKCCDMI	262
DmelOr59c	-----HYEQMVACIQDHRTI IQCSQII	264

Dme1Or98a	-----NEQDLIKCIKDHNLIIIDYAAA	259
Dme1Or42a	-----KYERLVQCIQDHKVIILRFVDC	264
Dme1Or85a	-----HYAELVECVKDKHLIVEYGNL	259
Dme1Or43b	-----MFKSLVDCIKAHRTMLNFCDAI	264
AgamOr2	-----GHSAGTLFAELKECLKYHKQIIQYVHDL	247
AgamOr10	-----ESTVVLNRKLQKLIEDHKRIIRYVQDL	244
Dme1Or30a	-----NEQVRGEI IWCIKYQLKLSGFVDSM	246
Dme1Or49b	-----DPRELREEI IACIRYQQSII EYMDHI	244
Dme1Or43a	-----SEERFQRLASCIAYHTQVMRYVWQL	244
AgamOr32	-----DLSAAQPYAEHQLRNVITYHREVL SLAQKM	247
AgamOr35	-----DFAART--AEDELEV VVAYHKDVLQCLAM	257
Dme1Or47a	-----KGGSLKE-SQATLNKVFALYQTSLDMCNDL	250
Dme1Or98b	-----EGRNTKE-THENLKHVFQLYALCLNLGHFL	251
Dme1Or9a	-----PAVGGKE-ELEGLVQVLLHQLGLQIADHI	262
AgamOr38	-----SSAAETLRINLELRRINKRHQTIIDV VSEV	279
AgamOr39	-----SSAAETHRINLELRRISKRHQAIIDL VSEV	280
Dme1Or24a	-----PSEAEEARIVREMEKLVDRHNEVAELTERL	259
Dme1Or45b	-----PSLRESKICCCQLADIVDRHNEI EKIVKEF	268
AmelOr74	-----SVAAYTRGCHVALKKCIRRHQSLIEFCNKL	262
AmelOr86	-----KFN-YASKCYEALKECIRQHQS LIEFCDKL	261
AmelOr75	-----GLPRYEKCCYERLKDCCV VQHQT LIEYCKRL	261
AmelOr84	-----ESYR-ANVCHAKLRSCVIRHQ TLT KYCKQL	258
AmelOr87	-----SWSSCMENCYATFKLCVKQH QDRIT YCHRL	286
AmelOr76	-----EESALSFYEYSK LKAYIRQH QALIEYCKKL	264
AmelOr85	-----KSPYLSICKYAKLKIYIRQH QTLIEYCKRL	269
AmelOr88	-----SSKYCINEYKSFKTCVQQHQALIEYCKKL	267
AmelOr91	-----DSL YFSNKCYTTFKKYIRQH QAL IAYCRKL	268
AmelOr92	-----DSLHFSNKCYTTFKKYIRQH QTL IAYCRKI	265
AmelOr95	-----DSCYFASKYYAIFKKCIRQH QAL IAYCRKL	264
AmelOr93	-----DSX--ATKCYAIFKXQH QAL IYLIYCRKL	252
AmelOr77	-----NTSYFAKKCYEAFKKCIREHQAL IAYCEKL	267
AmelOr94	-----ENMNSSNRCYAILKNCIRYHQAL IQFSITL	263
AmelOr96	-----ANKNSSDECYKAFKNYVQQHQAL LDFCETL	263
AmelOr79	-----TLTKQMHKFYEQFKECVRHHQAL IDYHQNL	263
AmelOr83	-----TFAKQVYKFYEQFKKCVRYHQAL IDYQNL	268
AmelOr80	-----ILSKQMHKFYEKFRKCVQHHQAL IDFYQNL	266
AmelOr81	-----ILSKQMFKFYEKFKKCVQHHQAL IDFYQNL	263
AmelOr82	-----ILANRVPKFYEKFRKCVQHHQAL IDFYQNL	265
AmelOr78	-----ILEEQMQKFHEKFKKYVRRHQAL IDYHQKL	265
AmelOr89	-----AHAREFYDRFKARVPYHQAL IDYCEKI	262
AmelOr90	-----LSKHVHTCYEKFKYVRYHQAL INFYTKL	263
AmelOr142	-----DGEFDACIKKHDEL LRY SREI	239
AmelOr146	-----IESLIKIEKYAIRRYAE E V	239
AmelOr148	-----IDMLIVCFKLL L L RRYAE E V	236
AmelOr158	-----IDMLIVCLKLL L L RRYAE E V	237
AmelOr147	-----IEMLIVCLKQL L L RRYAE D V	237
AmelOr150	-----ISMLIVCIKKQL HIRRYAKKV	239
AmelOr151	-----IGMLIACVKKQL RIRRYAKKV	239
AmelOr152	-----IGMLIVCVKKQL HIRRYARRV	239
AmelOr154	-----IDMMIACIKKQL Q L KRYAE E I	239
AmelOr155	-----IDMVIACVKKQVQL RSYAKEV	239
AmelOr157	-----VDTLVVCLKHSRLKRYAE E V	236
AmelOr156	-----KDMMVICIKKQL QIRRYAKEI	239
AmelOr153	-----INMLIVCX-----YAKKM	215
AmelOr144	-----YDMLVSCIKEHQKILGFVEDT	240
AmelOr145	-----YDMLVSCIKEHQKILGFVENS	241
AmelOr143	-----YDTLVVSCIKEHQKILGFVEDT	235
AmelOr1	-----NRDLHDRVIDIVQSHLKAIEYSARV	266
AmelOr3	-----NRDLRGRADI IQSHLKAIEYSALV	269
AmelOr6	-----SENTMQKRIVDIVEYQTKIKRFLGNT	261
AmelOr7	-----SENTMQKRIVDIVEYQTKIKRFLGNT	261
AmelOr4	-----SEKIMQQRIVDIEYQTRIKRFLSNT	263
AmelOr5	-----SENI IQEKIVEIVEYQTKIKRFLGNA	263
AmelOr8	-----ERVVQEKIVHIVEYQTRIKEFLNHV	263
AmelOr9	-----EKVVQEKIVYIVQYQTRIKEFYNYV	263
AmelOr11	-----EQVVQEKIVHIVEYQTRIKEFLNQL	261
AmelOr12	-----EKVVQEKIAHIVDYQTRIEFLNDL	263
AmelOr10	-----ERVVQEKIVHIVEYQMKIKEFLKQI	262
AmelOr14	-----NEVVVHEKIVDIVKYQTKVKGFLKNV	265
AmelOr15	-----NESAVHMKITDIVRYQTKIKQFLNDV	266

AmelOr13 -----CEIIVRKKLADIVEYQMKIIDFLNHV 257
AmelOr16 -----SEVTLQRKIMDIVEYQMKIKRFLKNI 268
AmelOr17 -----SEVVLQRKIMDIVEYQMKIKRFLKNI 268
AmelOr18 -----NDNENL-DQRLANIVKQHVRIINFIALT 277
AmelOr19 -----NDDENL-DQRLVNIVEQHVRIINFITLT 277
AmelOr22 -----DMYNNV-DSRIASIVSQHVRIILKFLALT 278
AmelOr24 -----DMYNNV-DSRIASIVNQHVRIILKFLALT 270
AmelOr20 -----DMDERL-DGRIADVIRQHVRIILKFLALT 274
AmelOr25 -----DMSKAI-DDRIANIVIQHDIRILKFLALT 269
AmelOr29 -----DMSKKI-DDRIANIVIQHDIRILKFLALT 270
AmelOr30 -----DMNKIV-DKRIAKIVVQHDIRILKFLALT 270
AmelOr21 -----DMCYSV-DQRIAKIVSQHVRIILKFLSLI 270
AmelOr23 -----DMCNSI-DQRIATIVNQHVRIILKFLSLI 270
AmelOr35 -----KDMENIVHEQRLGNIVEHHLHILGFISQI 279
AmelOr27 -----NQKKTDDFKEIGIIVERHHLRVLNFITYL 272
AmelOr28 -----KREK-MIFREIGLIVEHHLRITLNFISCI 272
AmelOr33 -----VNNKNVGLDKISNIVRHHLRILSFITGI 274
AmelOr34 -----IQDKNIVLNDIGEIRHHLKILSFITGI 274
AmelOr32 -----KIHDKNIGLNKIGKIVRHHLRITLSFVTGI 274
AmelOr31 -----DNNKNVVINEIGEIVEYHLRILNFIEGI 273
AmelOr36 -----QKENKN-RIDEISVIEHHMRILSFLERA 270
AmelOr37 -----QKENKN-RIDEISVIEHHMRILSFLERA 271
AmelOr38 -----QEENKNVHIDKISVIEHHMRILSFLERA 272
AmelOr39 -----QEENKNVHIDKISVIEHHMRILSFLERA 272
AmelOr47 -----QKQKNIRIDEISVIEHHLRILSFLERT 271
AmelOr48 -----QKQKNIRIDEISVIEHHLRILSFLERT 271
AmelOr40 -----QEENKNMRVNEISVIEHHLRILSFLGRT 271
AmelOr43 -----QEENKNMRVNEISVIEHHLRILSFLGRT 272
AmelOr45 -----QEENKNVRVEEISVIEHHLRILSFLERT 271
AmelOr41 -----QEEKKNMRINEISVIEHHLRILSFLERT 271
AmelOr42 -----QEEKKNMRINEISVIEHHLRILSFLERT 271
AmelOr44 -----QEEKKNMRIDEISVIEHHLRILSFLGRI 271
AmelOr46 -----IDLNN-VYVNKISIVEHHLRILSFITHI 270
AmelOr49 -----KKLNNNAYINKIGIVEHHLRILSFIARV 271
AmelOr50 -----RKENKDNHINKIGIVEHHLRILSLIARI 273
AmelOr26 -----KKQDEQTLHKKLGFIVEHHLRITLSLVWYM 279
AmelOr53 -----EKRYKDCDFALIVHDHVEILRFSNNI 277
AmelOr54 -----ERKKYESC�LFALIVHDHVEILRFSNNI 275
AmelOr52 -----DKK--NNCDPFALIVHDHVEILRFSKNV 272
AmelOr51 -----KVLETGIESHLAVVVKNHVEILRFAKNV 274
AmelOr55 -----YKKN SNPNIQVIKIKHHIKILKFSAVV 273
AmelOr57 -----YKKN SNPNIQVIKIKHHIKILKFSAVV 273
AmelOr56 -----YSKNLNPDIRLMGIEHHIRILKFSAVV 273
AmelOr58 -----SKENSNPNIRLIEIEHHIKILRFSAMV 275
AmelOr59 -----SKEKINLNARFTKIEHHLRILRFSATV 276
AmelOr60 -----GKGKFNLNARLIKIVEHHLQILRFSATV 276
AmelOr61 -----TKNTFNLNTRLVKIVKHHLRILRFSESI 276
AmelOr63 -----RTTKHITLLIKRHIYLLKLGDM 262
AmelOr64 -----RATKDIILLTKRHIYLLKLSDM 258
AmelOr66 -----RTMKHISLLTRRHIYLLKLSDM 258
AmelOr65 -----KITEHFILLIKRHIYLLNLSKML 258
AmelOr67 -----RTMEHILLTKRHIYLLNLSKML 258
AmelOr114 -----TYDKKDLKRLKEIVQKHEYVNRFAETI 232
AmelOr115 -----RNDYKTFEQRLSSIVNRHNLRSRFAVIV 255
AmelOr118 -----KRESQ--D-TIKDIVRHQKIIQLSKNI 237
AmelOr164 -----EQELR--IRIKKLIAKHQRTLNLSENI 249
AmelOr163 -----HKGKT--SYILKNIIVKHQIRLRLSENV 251
AmelOr165 -----SH-----LKFFIIRYQEIIITFAERV 241
AmelOr166 -----KK-----LKFFIKRHQEIILLAEKI 241
AmelOr167 -----KPES--RIIKSLIDRHYRIIGSEYI 253
DmelOr35a -----DRPHMAKQLKVLITKTLRKNVALNQFGQQL 266
DmelOr74a -----SSLNVAIAYRLNLTHILRRNAALRDFGQVR 267
AgamOr3 -----VAQDRAEKELNEIISMHQVRLNCVFL 278
AgamOr5 -----LDERAEKELIEIIVMHQKALKCVELL 259
AgamOr13 -----EDNTFNRQEVKSIVVMHQDALNCASLV 258
AgamOr15 -----QDNTF-RQELKSVIKMHQDALNCASLV 257
AgamOr17 -----QDNTF-RQELKTVIKMHQDALNCASLL 257
AgamOr16 -----RSQNY-ASDIRSAIQMHQSALSADVL 255
AgamOr55 -----RTVPSDRDSIRTIVAMHQALCCADLL 258
AgamOr18 -----PDVRQRSDBGMEVWVLHQRALRCAELL 265

AgamOr14	-----PNQKSIREELHDI IHVHQRTLNCITLL	278
AgamOr51	-----PKQKSIREELHDI IKVHQRTLDCIALL	266
AgamOr12	-----ISPENIDLELKKLIQMHQLAIRCVALL	268
AgamOr19	-----ISPENIDLELKKLIQMHQLAIRCVALL	268
AgamOr20	-----ATSNAIDRELKQVIQLHQRAVRCVALL	268
AgamOr21	-----TSSEAIGRELKKVIQLHQLALRCVALL	265
AgamOr50	-----VSPAIDRELKKKLIQMHQLAIRCVDLL	267
AgamOr29	-----ISQAQLSVVIKSHRDTLLCAQYL	256
AgamOr53	-----ITQERLNRVIKSHSNALSQCATQL	246
AgamOr30	-----ASQAKLEAI IHSHRSTLKCQAQL	257
AgamOr46	-----D---QYTAELSEI IELHQLVIKCSRQL	257
AgamOr47	-----D---KYTAELNEI IELHQLAIKCSRQL	257
AgamOr48	-----GLLAQKHRRLLQIVQLHYRAIECTKLL	268
AgamOr49	-----PTTTQFRHRLTEI IDQHGAATRCKLL	275
AgamOr61	-----VFWSILQPELNSHISRHVLLDNLKEF	277
AgamOr62	-----EYWDNLQQLRTHRIKRHLELLENLRIF	275
AgamOr63	-----IFWNNIVDQLRPHMQRLDELFIQLQHL	270
AgamOr60	-----EFWRELQALIKLNVQRHVLELLENLVD	272
AgamOr75	-----RILRELLYE HARHHSQLIVVVTHL	275
AgamOr76	-----RILRELLYE HARHHSQLIVVVTHL	275
AgamOr78	-----RILRELLYE HARHHSQLIVVVTHL	275
AgamOr77	-----LVAF LKERVVYKAALLQHIRT I	253
AgamOr79	-----LVAF LKERVVYKAALLQHIRT I	251
AmelOr99	-----ISKDAFSENSSYEKFRTCVIMHNEVIEFYNIL	273
AmelOr101	-----VSKDAFSENSSYEKFRTCVIMHNEVIEFYNIL	273
AmelOr102	-----FN-GTVLNNTYEQIKNCVIMHDEAIQFYNIL	272
AmelOr103	-----LN-KIVSNNTYEQIRNCVITHDEAIQFYNIL	272
AmelOr104	-----FNDRI ISENNTYEQIKNCVITHDEAIQFYNIL	273
AmelOr98	-----FT---DIEKCSYKELKNCVIKHKKAIKFFYNIL	269
AmelOr100	-----VFSNIHIYEQFKNCLIVHSEAIQFFSIL	193
AmelOr97	-----DRHNENELFRQCVMTHNKAYKFFEIM	217
AmelOr105	-----EKNGPNISNIDYEEFKQCVIMHYKCLQLYDVL	273
AmelOr109	-----DGYIDASMDETYVKIRQSIKAHKTAVQYVDKI	262
AmelOr110	-----DENYITL-MDETYTRVRHSIKAHRTAVEYVDKI	261
AmelOr111	-----GGDCIDPLTDETYTKVRQSIKAHKMAVEYVDKI	262
AmelOr108	-----NGNYIDLLMDETYKKVKQSIKAHKTAVEYVDKI	262
AmelOr107	-----NEKYSDELMEKTYAKVSQSIDAHKKA VEYVNKI	262
AmelOr112	-----EDHAIPLEEI KYKSICESIKAHQHALKYLKLI	259
AmelOr113	-----SKNSEEKIKETCKKIRSSIQHGEGAIRYLKKI	260
AmelOr106	-----MRKDSKMDEKI YRMCYAIKTHKRALAYLTKI	258
AmelOr122	-----TRNLS--K	233
AmelOr125	-----TPNLS--K	232
AmelOr123	-----MPNLP--K	230
AmelOr126	-----TPNLP--K	230
AmelOr127	-----MSNLP--Q	230
AmelOr128	-----MPNLP--K	230
AmelOr129	-----MPNLP--K	230
AmelOr133	-----MFNLLSNQ	135
AmelOr134	-----IDLSSKQ	231
AmelOr131	-----MFNVSSKQ	233
AmelOr132	-----IVNLSSKQ	233
AmelOr135	-----IVNLSSKQ	231
AmelOr136	-----MFNLSKQ	233
AmelOr138	-----MFNLSKQ	139
AmelOr130	-----MFKLSPKQ	233
AmelOr137	-----MFNLSKQ	232
AmelOr139	-----IFNLSKQ	155
BmorOr20	-----CNGNRSEFVLEEAKLYSPAEMWQVTDRLRQCIDYHRKLV EFTGDI	309
BmorOr3	-----CNGNRSEFVLEEAKLYSPAEMWQVTDRLRQCIDYHRKLV EFTGDI	309
BmorOr18	-----CNGNRSEFVLEEAKLYSPAEMWQVTDRLRQCIDYHRKLV EFTGDI	309
HvirOr6	-----ESPKYTEEELIEVAEKLKDCINHYHREIKIFTNRM	299
BmorOr23	-----RNSFEYTKERQEVDLTLKCKIQHHTLIIGFVRIM	286
BmorOr16	-----RNSFEYTKERQEVDLTLKCKIQHHTLIIGFVRIM	286
BmorOr4	-----RNSFEYTKERQEVDLTLKCKIQHHTLIIGFVRIM	285
BmorOr5	-----RNSLEYTREERQEVDLTLKCKIQHHTLIIGFVRIM	286
BmorOr22	-----TNNSMYTEENQVVLKQLQECIRYHNFII SFTVMM	293
BmorOr17	-----TNNSMYTEENQVVLKQLQECIRYHNFII SFTVMM	293
BmorOr1	-----SHVITTPNGPTNVETYTEESKEVFARLRECIKHYGTVD FANDM	300
BmorOr1a	-----SHVITTPNGPTNVETYTEESKEVFARLRECIKHYGTVD FANDM	300
BmorOr1b	-----SHVITTPNGPTNVETYTEESKEVFARLRECIKHYGTVD FANDM	300

BmorOr19	-----NWSDDFNESEKK---GYLVSILEYHAYIIRIFGEV	278
BmorOr15	-----NWSDDFNESEKK---GYLVSILEYHAYIIRIFGEV	278
TcasOr5	-----KIHKDLNKLAMEV	221
TcasOr7	-----ALEVQTSLLLATVL	228
HvirOr4	-----SPCDAVRRLAALHGTLCDVVNSI	256
BmorOr13	-----TIRRLALSYGSICEVVRQI	298
DmelOr10a	-----PVQLYILEQKMRSVIIRHNAIDLTRFF	276
DmelOr33c	-----VVNHQRLLDYIEQHKLLVRFHNLV	249
DmelOr7a	-----DERRQEEHCAELQRCIVDHQTMLQLLDCI	274
DmelOr22c	-----DSVDVFTEEMNAEVRHRLAQVVERHNAIDFCTDL	273
AgamOr1	-----IDHHSKVYGTMYAKVTECVLFHKDILRFGEV	282
AgamOr4	-----AERTASAIRNVGQMHSGLLKCIRLL	261
DmelOr47b	-----DKRFHEEFRCVVRFHQHIKLVGKA	279
AmelOr73	-----LVLTVTRNSNVFAETV	232
AgamOr68	-----PEIMAKVSRKWRMCLVEHQRIVEYYDNF	263
DmelOr59a	-----DAEKDLEACITDHKHILELFRRI	247
DmelOr23a	-----LEENEQDLVNCIRDQNALYRLLDVT	244
AgamOr31	-----NRELKKLIEHKKYILRISDRV	242
DmelOr2a	-----QTYEAWREEVYQELIECIRDRLARVHRLREII	264
AmelOr62	-----RKIGPLVKRHCQLAVLVNDL	264
AmelOr121	-----NFLIATAIVKDHIRLIRVIELL	262
AmelOr140	-----VYRKLFCIKNHQNAIKYSNLL	228
TcasOr12	-----KSSVNKNLIQCACHYRSIQFAAEV	258
AgamOr8	-----QELVGCVRIHQAVIELCNEL	261
BmorOr9	-----TAHLLKEVVKEQQYVLKLAEDL	248
AgamOr40	DTVQG-----TKTASRLDQLSPAQSYLMELAPELTCVMEDCIQHHLILLRFCQLL	323
TcasOr63	-----FNETKGALVRCITHHAKLVNYTERV	249
TcasOr4	-----KSWLVKKAIKKCVIYHTILLKKIFYG	244
TcasOr13	-----AKCGVTNEQVRDLIIAYQKLTDAANLV	270
AgamOr24	-----ESLDTIQDKIVEIIRQYQHHRTYLKLQV	248
AgamOr54	-----AFFMFQQNAQLQVDMRLYKSKSM	237
AgamOr23	-----QHDEEIADIIKEIVLKHLEHTKYMTDM	255
AgamOr64	-----SFCKQFYANIRRHTELLQSIATF	276
DmelOr82a	-----PDTQIRLKSIVEYHVLLLSLSRKL	254
AmelOr116	-----SPSKIYNKFYENLKHCVKHSIIFDFTKQI	266
AmelOr160	-----IYFPKMKALVERHTELLRLANIL	257
TcasOr10	-----YIFSFMTQSFTFCMTGTMLS DWS	224
TcasOr26	-----EVRRKMLAKWVDYHLLWLLSIGKLM	242
AmelOr117	-----PNYMRKLVDLIKCIRHHQQLIHVVNNV	267
AmelOr120	-----SKYINKNLYEIKTQIIYI IKHHQLVLWFCDNM	269
BmorOr7	-----SEQNYDEVLMRLFDCLKHYYQKIVDTTSSL	259
AgamOr6	-----AREGDSGSTSRLRDAIRIHQELIGYEGTP	270
DmelOr45a	-----DSRLTGFVSRHRIALDLAKEL	247
DmelOr67d	-----NDFPKVRAMLCDLLVWHQLYTRMLQTT	263
DmelOr83c	-----ALVRVGASIDGAENRQRLLLDVIRWHQLF	264
AmelOr162	-----LRFAKIL	237
HvirOr3	-----EMAMRLKFKNAIRKHIRLMGYSGRM	136
TcasOr20	-----LEILEHKMKFCVKYHTAILDYGIRT	255
AgamOr11	-----PTAPVNNNAERRSLMIDCIKRQASLVSFTREL	293
DmelOr56a	-----RLTASELTFWQMQLFKEFVKEQLRIRKFLVQEL	287
AgamOr28	-----KSHVELQAKLKQIILKHKTNLSLIEQL	287
AgamOr58	-----YWDGLKRRIDTCVIEHQRLGQISTL	255
AgamOr59	-----SRALYWSTLHGELRRCARHCAIFTMLPKL	275
DmelOr1a	-----SRSDFGLSGIFVEHARLLKIVQHF	256
DmelOr13a	-----AELAESIQLERLKRIVEKHNNIISFAKRL	267
AmelOr161	-----SAAIMGDNVIRHQQAIFADTL	254
AmelOr141	-----KITTAKMSDIKTEASNSVQMRNLRMCVHHQLLNRFCEDI	301
AgamOr52	-----LLWQQFNRELGRVREHCVVVKQVREV	243
AgamOr36	-----IWTSFERNARAVRRHETFLWQLGQL	264
AgamOr25	-----AELHRELVRRIQIHRQIQQFIHQV	235
AgamOr45	-----TVQWQQT AHLDAELNRIIEELHIDTKRFARVI	261
TcasOr3	-----TRAERLLKEETLHDPFPLENCVNKEMIRKL	280
DmelOr88a	-----EKRFVLDLRLLVQRQQLNLGLCRKY	272
AgamOr22	-----VQEQRRLMRKVFEIHTGLSQFIARC	260
DmelOr49a	-----QQDCDFLASIIKRHQLMIRLQKDV	264
DmelOr85f	-----QEDRKFI AKIVDKQVHLVSLQNDL	261
AmelOr119	-----NDNNNRFLDRYKCKVQFHQRLVVISRDY	281
DmelOr63a	-----DRRVEYLRCIIYQYQRVANFATEV	285
DmelOr67b	-----KDQRVKYLQCCVRLFARISSHHNQI	287
BmorOr21	-----RHEKIVAVIEEQRRTYEYIALI	264

BmorOr11	-----RIIAKELKVIISKLQELYGFVNF I	265
BmorOr12	-----EAEFENAFNCNGIKIHTQI IWCVRRC	269
AgamOr33	-----MSLALFSTPERPLLTGSGFCNRRL	241
HvirOr1	-----EIFWRATREDYCRVTQIVRKV	279
HvirOr5	-----TWRKIREAYVKQAMLVRKI	199
TcasOr1	-----LMFDYCTVLRVQRFNNYQSLAHYL	217
TcasOr2	-----KSLDFGKLCSLHHHLSKLIKSF	242
TcasOr16	GDAYGVALLLHMLTSTIMLTLLAYQATKITGVDKYAATVLG--YLLFA-----	390
AmelOr2	GDAYGVALLLHMLTTTTITLTLAYQATKIHAVDTYAASVVG--YLLYS-----	393
AgamOr7	GDTYGPALLLHMLTSTIKLTLAYQATKIDGVNVYGLTVIG--YLCYA-----	393
AaegOr7	GETYGAALLLHMLTSTIKLTLAYQATKIDALNVYGLTVIG--YLVYA-----	377
DmelOr83b	GDTYGAALLLHMLTSTIKLTLAYQATKINGVNVYAFTVVG--YLGYA-----	401
BmorOr2	GDTYGTALLFHMLVSTITLTLAYQATKINGINVYAFSTIG--YLVYT-----	387
BmorOr2a	GDTYGTALLFHMLVSTITLTLAYQATKINGINVYAFSTIG--YLVYT-----	387
HvirOr2	GDTYGTALLFHMLVSTITLTLAYQATKINGINVYAFSTIG--YLSYT-----	387
AgamOr56	EEILSLQMLLLYISTILALCLGMVVLAVNEVYVLLTTMA--VFGYC-----	310
AgamOr57	EEILSLQMLLLYLSTILALCLGMVVLAVNEVYVLLTTMA--VFGYC-----	310
AgamOr26	EAILSGQILLLYVSTILAVCLGMVVLTLAIEDVYLLLTTFV--AFGYC-----	310
AgamOr27	EEILSGHMLLLYVSTIFSLCLSMVVLSPIDDFILLLTTFV--AFGYC-----	310
HvirOr9	EKIFSKSILFNALTSSVVICVTFGNVLVDNIVMMASFTA---FLLFG-----	313
HvirOr7	EIIYSKSTLNFNLSLSSLVICLTFGNVTIVDDIVIIITFLT---FLSMA-----	297
DmelOr85b	NDIFGIPLLLNFMVSSFVICFVGFQMTVGVPPDIVVKLFL---FLVSS-----	303
DmelOr85c	NDIFGIPLLLNFMVSTFVICFVGFQMTVGVPPDIMIKLFL---FLFSS-----	302
DmelOr85d	NEIFGVSLLSNFVSSSFIICFVGFQMTIGSKIDNLVMLVL---FLFCA-----	325
DmelOr67a	NEVFGIPLLLNF IASALLVCLVGVQLTIALSPEYFCKQML---FLISV-----	321
DmelOr67c	NDLYSFSLLLNFLMASMQICF IAFQVTEST-VEVIIICYI---FLMTS-----	316
DmelOr92a	NNIFSLFLLWNF IASLVCIFAGFQITASN-VEDIGVYFI---FFSAS-----	321
DmelOr69a	NDIMNFVFGSSLVGATIAICMSSVSIIMLLD-LASAFKYAS---GLVAF-----	308
DmelOr69b	NRSFNFTFLISLSVSMISNCF IAFSMTMFD-FGTSLKHLL---GLLLF-----	308
TcasOr6	EFSDPLFFLNVI GMHPFKADKFSKFR IAFSIAVYFA-----VIFSG-----	287
TcasOr11	SFITQFTTFCF IGS-----LLITWSLQVPDA-----IFYN-----	272
AgamOr41	EAAKNVHSAVEVLSLGLQIVITLFLVQLFSLWIPGLV-----LIPVF-----	298
AgamOr42	ERFYQLQSFVEFLCNSLQVALTLNELHRNFWLPGLF-----ILPIA-----	303
AgamOr43	DKRYLLNNWVQVASSIFNLTGALFGCYVSNSTMYA-----LAITI-----	300
AgamOr44	EKRYLLNNWVQVASSIFNLTGALFGCYVSNSTMYA-----LAI AV-----	300
AgamOr66	QECYRNICVVQVASC SLSTVFNLFALTTD WYATYG-----FIVIS-----	304
AgamOr67	QECYRNICVVQVASC SLSTVFNLFALTTD WYATYG-----FIVIS-----	304
AgamOr72	ENIFGLMCLAQVATATLSICDAMLLVLLTDWYPTYS-----YLYVM-----	300
AgamOr73	ENIFGLMCLAQVSTATLSICDAMLLVLLTDWYPTYS-----YLYVV-----	300
AgamOr71	ENIFGLMCLAQVATEFLSICDAMLLVLLTDWYPTYS-----YLYVM-----	300
AgamOr74	EHIFGLICLTQVATATFSICDAMLLVILTDWYPTYS-----YLYVM-----	300
AgamOr70	EDIFGLMCLAQVSMGVFTICDAMLLVLLTDWYPTYS-----FLLVM-----	300
AgamOr69	EDIFGITCLAQVLMGIFTVCDGMLLVALTFWFPTYC-----FLLVM-----	304
TcasOr9	SDILSIFLMGKVSAAIFNLTLMFAFSLITTGNR---AMIFGLGSYMVST-----	210
TcasOr18	NKILNTFLLIRVSAIVFNLI F IGFNII I ISTD R---TLMLGF CNYFCFG-----	321
DmelOr83a	ESFYSP IWFVK IGEVTFMLCLVAFVSTKSTAANSFMRMVSLGQYLLLV-----	365
DmelOr85e	ENLFSYCYLVKSLQITFQLCLLVFVG--VSGTREVLRIVNQLQYLGLT-----	374
TcasOr24	SKCFSIEM---FTHLTTTGI ICGLENQVQ EHRPE---ALHIGGW-----	296
TcasOr25	SRCFSYVM---FIHLAITGII ICGLENQIVQEHQPE---AMLHMGGW-----	296
TcasOr19	NNCFTNGM---FIHLATTGII ICGLENQVVEGATPG---GVLHLFGW-----	261
TcasOr22	NVCYKHCN---GCYVVMVGII IASLLNQI IKVTAPGLKK-ASELLSIL-----	297
TcasOr23	NVCFKHCN---GCYVVMVGII IASLLNQI LKEKSVG---ALVHFAGW-----	294
AmelOr168	KKLLSPNIGILYLNYVFRFCFLSFMFATTSLSEKLT TYTI-IVSYTTGA-----	303
AmelOr170	KKLISPNI GFLYLSYVFRFCFLSFMFAMT-TAKYFEKCL-LASYTIGA-----	310
AmelOr169	KKLLSPNIGILYIN YVFRFCFLSFM LATS-SGMHFEKCL-LVSYTIGA-----	316
DmelOr65b	NDVFHGT LIMQMGVNFSLVSLSVLEAVEARKDP---KVVAQFAVLM LL-----	297
DmelOr65c	NKVVFHGT LIMQMGVNFSLVSLSVLEAMEARKDP---KVVAQFAVLM LL-----	297
DmelOr65a	NHIFNGAFIMQMLINFLVSLSLFEVLA AKKNP---QVAVEYMI IMLM-----	329
TcasOr17	-----	
TcasOr21	-----	
TcasOr56	EEDFCYLMLLQF ISSLLIVCFQLFQVSTLSPDS---VEFFSMVCYLLL-----	346
TcasOr15	EEDFCYLMLLQF ISSLLIVCFQLFQLS-----	322
AgamOr9	LTLFSGPMLSQLYCSVFILCITEFRLLTDVNTM---ADTMQAVMYLVC-----	329
AgamOr65	LDLFSGPLLAQLYCSVFILCITEFRLLTDVNTM---ADTVQAVIYLLC-----	332
BmorOr6	EGTFQVHSHFLGGIVFMICVIGFRMAGESPVS---AQFWAALS YLVI-----	302
BmorOr10	EKTYHANIFFQLSGSVFIICNIGFR IAI VDSNS---LQFYSM LTYLVT-----	299
AgamOr34	QNLFSPAYFVQFSVSGLVICASAYQVASM LNLN-DFSKLMN-VFYMMS-----	291
AgamOr37	EQLFSAAYFAQFGSSGLVICASAFKTS S MFNLY-ELTAIQN-LLYMLS-----	303

Dme1Or94a	QRIVSPYILSQIILSALIIICFSGYRLQHVGIIRD-NPGQFISMLQFVSV-----	300
Dme1Or94b	EVLVSPYVLSQVVFSAFIICFSAYRLVHMGFQK-RPGLFVTTVQFVAV-----	296
Dme1Or71a	EIFISKSTFTQILVSSLIICFTIYSMQMSPVLQ-DLPGFAAMQYLVA-----	291
Dme1Or46a	ERLLCKPISVQIFCSVLVLTANFYAIAVLSDER---LELFKYVVTYQAC-----	293
Dme1Or46b	ELFIKPGPSVQLMCSVLVLSNLYDMSTMSIANGDAIFMLKTCIYQLV-----	296
HvirOr8	EDVFSITLQVQFMASCIICICLMRFTMP-APLVYYLFLAT---YMFV-----	308
BmorOr8	QSILDVAMFVQFVASAIIICVAMCGLIMVRSSTETLLFMVT---YLFA-----	305
AmelOr68	QEKFKKIIGIQLLSSSTLVVCFILYKLANSTLIST---KFLEFVLYLAC-----	287
AmelOr69	NEQFKMVIQVFTVSTLTICVNLVILMGTQITFE---RIMQLAIYSSC-----	282
AmelOr70	NEKFKVILFLQFCAIAFIACFNLYRMTTITMIP----KLEASLYLIR-----	284
AmelOr71	NDAFQSIMFFQFCTSLSMICFNFYRIMQIEMDS---RYVGTILYMVC-----	283
AmelOr72	NKLFSSILCLQFLISAVAICFSVYRVIIYTKTDS---QFAGAIIFVFS-----	284
Dme1Or19a	ERSLSMTCFLOFFSTACAQCTICYFLLFGNVG---IMRFMNMFLLLVI-----	296
Dme1Or19b	ERSLSMTCFLOFFSTACAQCTICYFLLFGNVG---IMRFMNMFLLLVI-----	296
Dme1Or33a	RSTLHLSQLGQFLSSGINISITLINILFFAEN---NFAMLYYAVFFAA-----	291
Dme1Or33b	RSTMNISQLGQFISSGVNISITLVNILFFADN---NFAITYYGVYFLS-----	293
Dme1Or22a	RPVFSGTIFVQFLLIGIVLGLSMINLMFFST---FWTGVATCLFMFD-----	305
Dme1Or22b	RSVFSGTIFVQFLLIGIVLGLSMINLMFFST---LSTGVAVVLFMFC-----	305
Dme1Or42b	KPVIQGTIFVQFLLIGIVLGLFTLINVFFFSD---IWTGIASFVIVIT-----	305
Dme1Or59b	RPMISRTIFVQFALIGSVLGLTLVNVFFFSD---FWKGVASLLFVIT-----	306
Dme1Or59c	RPILSITIFAQFMLVGLDLGAAISILFFPNT---IWTIMANVSFIVA-----	309
Dme1Or98a	RPAVTRTIFVQFLLIGICLGLSMINLFFAD---IWTGLATVAYING-----	303
Dme1Or42a	RPVISGTIFVQFLLVGLVGLFTLINIVLFAN---LGSAAIALSFMAA-----	308
Dme1Or85a	RPMISATMFIQLLSVGLLLGLAAVSMQFYNT---VMERVVSGVYITIA-----	303
Dme1Or43b	QPIISGTIFAQFIICGSILGIIMINMVLFD---QSTRFGIVIVYMA-----	308
AgamOr2	NSLVTHLCLLEFLSFGMMLCALLFLLSISNQLAQMIMIGSYIFMILSQ-----	295
AgamOr10	NDLVTYICLIEFLSFGMLCALLFLLNIIISVMAQIVIVGAYIFMILTQ-----	292
Dme1Or30a	NALNTHLHLVEFLCFGAMLCVLLFSLIIAQTIQTVIVIAVMVIFAN-----	294
Dme1Or49b	NELTMMFLFELMAFSALLCALLFLLIIVSGTSQLIIVCMYINMILAQ-----	292
Dme1Or43a	NKLVANIVAVEAIIFGSIIICSLFLCLNIIITSPQVISIVIMYILTMLYV-----	292
AgamOr32	VQLYQSAFYLLLVSTILCCLLGYEFVMVSNYKRMQVAAILASIMIGQ-----	295
AgamOr35	TNLFQYTVFYLLLLDSVLLCVIGYQFVIFMNTPRVLMMLASMAFVMLQ-----	305
Dme1Or47a	NQCYQPIICAQFFISSLQCLMLGYLFSITFAQTEGVYASFIATIIIQ-----	298
Dme1Or98b	NEYFRPLIC-QFVAASLHLCLVLCYQLSANILQPALLFYAAFTAAVVGQ-----	298
Dme1Or9a	ADKYRPLIFLQFFLSALQICFIFGQVADLFPNPQSLYFIAFVGSLLIA-----	310
AgamOr38	RHAFTPTILIVHICAAFMIICVISMAMFLAEG-INKLTYMPYTFVLMML-----	326
AgamOr39	RSAAFTPNVLLVYTATAIIMCIVCIAMLVVEG-IYKLTYPYFAELTL-----	327
Dme1Or24a	SGVMVEITLAHFVTSLLIIGTSVVDILLFSG-LGIIYVYVYTCVAVGVE-----	306
Dme1Or45b	SGIMAAPTFFVHFVSASLVIATSVIDILLYSG-YNIIRYVYVYTFVSSA-----	315
AmelOr74	EQVFTFPILSHVVVFSLLMCFDYEILLADIPTLKRLIFLCHMVASFI-----	310
AmelOr86	EHVYTLPIFGHVVVVFSLLMCFDYEIFLANVPVSMRLIFFFHMVGSFI-----	309
AmelOr75	EDIFTVMVLGQVMFLAVVICLVGFQFLADTSASKKASLVNLGGTFF-----	309
AmelOr84	ENIFTIIVLGQVLFALALVICLVGFQFLMDTPASRKVSLTLNFACTL-----	306
AmelOr87	NDIFTIIVLGHILVFSLLMCLVGFQVLMANSPPTRRILFVPHITGSLC-----	334
AmelOr76	EQVFNSIVFGQVLLFSLMCLDGYLILMEETPFGRRTVTFPHITGCMC-----	312
AmelOr85	EMVSNFIIIFGQVLLFSLMCLDGYLILMEDTSNMSRLIFTFHLISCMC-----	317
AmelOr88	EDVFSIIVLQVLLFSLMCLDGYLILMEDTSRAKRVIFTFHLMGCMC-----	315
AmelOr91	EVVFNWIVLEQVLMFSLMCLDGYQILMANGDIKRLTFSFHILACL-----	316
AmelOr92	EVVFNWIVLEQVLMFSLMCLDGYQILMADEDIKTRISFISFHILSCL-----	313
AmelOr95	EEVFNLIVLEQVLMFSLMCLDGYQLMADTSTTRRLIFLGHITVCLC-----	312
AmelOr93	EEVFNLIVLEQVLMFSLMCLDGYQILMADGDVKTRLIFSFHILGFLC-----	300
AmelOr77	EKVFSLIILCQVLTFSLIICLDGYQIIL-----	295
AmelOr94	EEIFTIITLGQVLIFFSTLICFVGYQVLLVNMTLSWRISFLCFLITNMC-----	311
AmelOr96	EEIFTIIVIGQILMFSILFCFLGYQVILADLTPSYRISFISYLFAGMC-----	311
AmelOr79	ENVYTIITLGQVLFVSVLILCLFGYQVVFVATASFARRSIFVFMNLGSMF-----	311
AmelOr83	ENVYTIITLGQVLFVSVLILCLFGYQVVFVAAASTARRFIFVFLLSGSMF-----	316
AmelOr80	ENVYTMITFGQVLFVSVLILCLFGYQVVLVATISFARRFIFVFMNLGSMF-----	314
AmelOr81	ENVYTTITLEQVLFVSVLILCLFGYQVVLVATASFARRFIFVFLNLGSI-----	311
AmelOr82	ENVYTRIAFGEMLVYSILICLFGYQVVLVATASFARRSIFVFLNLGSTF-----	313
AmelOr78	ENVYTTIMLSQVLLFVSVLILCLFGYQVLLATASLARRSIFIFLLMGAMF-----	313
AmelOr89	ENVSPTIILEPVMVFSVILCLFGYRILWANAPSTRRSIFIFLLIGAMS-----	310
AmelOr90	ENVYTMIIILGQVIVFSALICLFCYQVLLANAPSARRSIFIFLLIGAMS-----	311
AmelOr142	RQSIKFLILATNGTTVIAVIFGSLNLIANQ-PLILKALYAIIVVFSASV-----	286
AmelOr146	VNSARYTTLITLTCICGVESVFGGIIFIGRQ-PFTVKLQFLTLSATLL-----	286
AmelOr148	VSCIRFLVFYAIAVGTFLMFLSGIIMIINS-PILVKIQFIIICMSSLM-----	283
AmelOr158	VSSIRFLVFYAITISTFTLTLSGIIMIINC-PLFVKMEFITISISLLV-----	284
AmelOr147	VNCIRFIIFYTMAVSTIVLTLSGIILITTS-SLLVKIQFLTICISILL-----	284
AmelOr150	VIGFRFIILCAIGISTFALTLLGGVIMIKKA-PFIVKVQFITLILTLT-----	286
AmelOr151	VISFRFIILYAIIVSTFVLILDGIIMIMKV-SLIVKVQFITLSLTLT-----	286
AmelOr152	VISFRFIILCAMGVSIFSLTLGGIIMITKS-PFIVKVQFITLILTLT-----	286

AmelOr154	INCFRYIVLYGIAVTTTFALILLCGIILLMNI-PLIVKIQFVIIICITIMT-----	286
AmelOr155	IKCFRYIVLYYITITTFALIISCIILLMNV-PLIVKMQFIIICVTIMT-----	286
AmelOr157	VSCIRFLVFHAILLGTFLVTLFCGIVLIINS-PLIVKAQFIIICVCILL-----	283
AmelOr156	ANCFRHIIIFYTIIATSFNMILAGIILLMNP-LLVIKIQFMITCFITALI-----	286
AmelOr153	INWFRFIIFNAIGLSILVFTLASIILIMIS-ICMYIVVCSMNFINK-----	262
AmelOr144	NATVETLLFKTNVTMGSTVICGAFPLLNQ-SLDVVTQFLPLVLSGML-----	287
AmelOr145	NATVETLIFKTNITMGSIVICGAFPLLNQ-SLDVVTQFLPLILTGML-----	288
AmelOr143	KATVETLLFKTNVTMGSTVMCGAFPLLNQ-SLAAISQFLPLVLSGIL-----	282
AmelOr1	GESLSIVFLSEMLGCTIIICFLFEGVIMELEDHKTLSVTYFVLMTSI-----	314
AmelOr3	GKLSLSIVFLSEMLGCTIIICFLFEGVIVEWEDHKTFSMVTYFVLVTSM-----	317
AmelOr6	ELITQYFCFYEISCNTCLICFIGYCIILEWENSNNVAIVVHFMLLGTC-----	309
AmelOr7	ELITQYFCFYEISCNTCLICFIGYCIILEWENRNVAIVVHFMLLGTC-----	309
AmelOr4	ELITQYFCFYDIGCSTCLICFIGYSIIVEWENHNIASSTVIYFSGLVTC-----	311
AmelOr5	ELITEYFCFYDIGCNMCLMCFIGYSAILWENHNIAAIVVHFMLLGTC-----	311
AmelOr8	DQFVPPYVYLIEIFVGVLTICILGYCIIVEWEDSDAMAIAYVALQTTTC-----	311
AmelOr9	DQFVPPYVYFIEMIVGVLTICVLYGYCIIVEWEDSDAMAIAYVVLQVTC-----	311
AmelOr11	DQFVPAIYLVIEVVIQVLIICIIGYCIIMEWEDSNAMAMVIYVVFQVTC-----	309
AmelOr12	NQFVPSVYFFEIILEVLIICIIGYCLITWEDNNTMATVIFVIFQITC-----	311
AmelOr10	DQFVPTIYLFVFIQVLIIMCIIGYCIIMEWKESNGMGLITYVIVQMTTC-----	310
AmelOr14	EQLTTYLFLEIMVETSIGCVIYGNVVTWEDSNAAAMI IHLMMQVST-----	313
AmelOr15	EHITTYLFLEIIDETGIGCVIYGYCAITWEDSDATAAIYLLLEASV-----	314
AmelOr13	EQLTSYLYFCEILEYVCGACVIGYCLITWENSNAALIVYFILEFLC-----	305
AmelOr16	ETVTEYICLIEMIGGTCLMCLVGYCILMELENTNTMAVVVYITLQISI-----	316
AmelOr17	ETITEYICLIEMIGSTCMICLVGYCILEWENNTNTMAIVIYITIQISI-----	316
AmelOr18	EDLLHEISLIEVVGCTLNICFLGYYSMMEWDSKQPVSGVTYIILLISV-----	325
AmelOr19	EDLLREISLVEVVGCTINICFLGYYSMMEWDEHLIRGMTYIILLTSV-----	325
AmelOr22	EKALQQVSFVEFLGCMLNICLLGYVIVITEWSSSHLTSAITFFILLISL-----	326
AmelOr24	EKALQQVSFVEFLGCMLDICLLGYVIVIMEWSSSHLTSAITFFILLISL-----	318
AmelOr20	EKTLQQISFTEFLGCTLDICLVGYVIVIMESKSNVTSVITYIILLISL-----	322
AmelOr25	EKALQQISFVEFLGCTANMCLLGYYLIVWNPKEIILSVTYVALIISI-----	317
AmelOr29	ERALQQISFVEFLGCTANMCLLGYYLIVWNPKEIILSVTYIAI IASI-----	318
AmelOr30	ERALQQISFVEFLGCTMNMCLLGYYLIVWNPKEIILSVTYISLLISF-----	318
AmelOr21	EKILQQVSYMEFLECTVNVCLLGYCAIIEWESNHLTEVVTYVILITIT-----	318
AmelOr23	EKILQQVSYMEFLECTMNVCLLGYCAIIEWESNHLTEVITYLILLITIT-----	318
AmelOr35	EELLNEICFVEFIGTCLNICFLGYFLLKEWEQSETIGILTYCILLISF-----	327
AmelOr27	ENIMNRIYFLELFRCTMIICIVGYILTEWAEKNVQNLTTYFMMLLSI-----	320
AmelOr28	EETINRIIFLEVFRCLHICCLGYILMEWSDYDKRSMIYFMLFVSV-----	320
AmelOr33	ENVMSGICFMELFKCTMNICMLGYVVLTAWIDNMRNLIVCSVILFSM-----	322
AmelOr34	ENVMSGICFMELFKCTVNICMLGYVILTAWTGHDIQSLIVFSVILFSM-----	322
AmelOr32	ENVMSGICFMELFKCTVNICMLGYVILTAWSVHDIQNMVFLVILLSM-----	322
AmelOr31	EDVLRNRCFMELFKSTLDISMLGYVILTEWADHDIRNLTTYFMILTSM-----	321
AmelOr36	EHLSPICFMEMFKNILSICLFSYCILAWESEHNIRILSTYILAVINI-----	318
AmelOr37	EHLSPICFMEMFKNILSICLFSYCILAWESEHNIRILGTYIFAVINI-----	319
AmelOr38	EHLSPICFMEMFKNILSICLFSYCILAWESEHNIRILGTYIITVINI-----	320
AmelOr39	EHLSPICFMEMFKNILSICMFSYCILAWESEHDIRILTTYTFVMMNL-----	320
AmelOr47	EHLSPICFMEMFKNILSICMFSYCILAWESEHDVRLGIYAFAVICI-----	319
AmelOr48	EHLSPICFMEMFKNILSICMFSYCILAWESESRDIRVLGIYTFVMMNV-----	319
AmelOr40	EHLSPICFMEMFKNVLSICMLSYCVLVEWVSGRDIRALSAYTFVSMNI-----	319
AmelOr43	EHLSPICFMEMFKNILSICMLSYCVLVEWVSGRDIRALSAYTFVSMNI-----	320
AmelOr45	EHLSPICFMEMFKNILTICMLSYCVLVEWVSGHDIRALSAYASAVMNI-----	319
AmelOr41	EHLNPIYFMEMFKNILTTCMLSYCVLVEWVSGHDIKVLSAYSFTITNI-----	319
AmelOr42	EHLNPIYFMEMFKNILTTCMLSYCVLVEWVSGHDIKVLSAYSFTITNI-----	319
AmelOr44	EHLSPICFMEMFKNILSICMISYCVLVEWVSGRDIRALSAYTFVSMNI-----	319
AmelOr46	EHLNPIYFMEMFKNVLSICMFSYCVLVEWVSGHDIRALSAYASAVMNI-----	318
AmelOr49	EHVMSPICFMEMIKCMVVICMPIYIILMEWSEHNIQNLTVYVMI IISM-----	319
AmelOr50	ERITCPIYFMELFKCMMGMCPSYFLAWESEHNIQNLTIYVMVALSM-----	321
AmelOr26	EKVMNICLVELVGCTMNMCLKYYFLTEKSK---TILGIYAIYVYASM-----	324
AmelOr53	EEALREICFTEIEICTIDMCMLEYCYIMEWVSGDTITLLTFFTLTLLISF-----	325
AmelOr54	EEALKEICFTEIEICTLNMCMLEYCYIIEWESAGDTITFLTFFTLTLLTSF-----	323
AmelOr52	EEALREICLAEIIECTIIMCCLLEYCYIMEWVSGHDIRALSAYASAVMNI-----	320
AmelOr51	ETTLRELFLVEVIVSTLLMCLLEYCYIMEWVSGHDIRALSAYASAVMNI-----	322
AmelOr55	EKVLQEVVFFLEFISSTFVICLLEYCYITDWEQNNIISLTSYALLLISL-----	321
AmelOr57	ETVLQEVVFFLEFVSSTFVICLLEYCYITDWEQNNIISLTSYALLLISL-----	321
AmelOr56	ETILQEVVFFLEFVIGSTFVICLLEYCYIADWEQNNIISLTSYVLLLISL-----	321
AmelOr58	ETVLQEVVFFLEFVIGSTFVICLLEYCYITDWEQNNIISLTSYVLLLISL-----	323
AmelOr59	QEVQLQELCFLEICIGSTFLICLLEYCYITDWEQNNIISLTSYVLLLISL-----	324
AmelOr60	QVILQEVVFFLEFVIGSTFVICLLEYCYITDWEQNNIISLTSYVLLLISL-----	324
AmelOr61	EMALQELCFLEICIGSTFLICLLEYCYITDWEQNNIISLTSYVLLLISL-----	324
AmelOr63	NKTISSILIVQLSSSCMLICTTGFEFILALSIGNIVMIVKTFVAVICVL-----	310
AmelOr64	NETISSILIVQLFSSCVLICCTTGFEFILALNIGNIVMTIKTFIVMVCVL-----	306

AmelOr66	NETISSILVIQLFSSCVLICCTGFEFILALSIGNIVMMIRICIAMCVL-----	306
AmelOr65	NETISSILIIQLFSSCVLICCTGQFQILALSIGNIVLTIKILIMCVL-----	306
AmelOr67	NETVSSILVIQLFSSCVLICCTGCFQALITLTFGNVLTIKILAEISIL-----	306
AmelOr114	ENCFNVMLLIQILGCTVQLCTGCFQAIMSFGGGEAQEYLFQMLFLLVYVF-----	283
AmelOr115	EDCFNITLLVQTLICTAMFCLTGYRMITSVREDEADVPVIGLIFFFIHVI-----	306
AmelOr118	ETIFTYISLQCQFVSNMLVICFISFVLTVSLHTEQTIIVLIMKCLPYIA-----	285
AmelOr164	ENIFTFISLSQFFFNILVICFVNFILVTSIGTEQAPTVISKCFPYIA-----	297
AmelOr163	KYLFLYTSLIQFLSNILVICFLGFLVNALGTEQESTIFIKCFPYIA-----	299
AmelOr165	EKLFTYIALSQLVSNLITCCVGLFIVIAIHEDNGLPLLLKSVLFYMV-----	289
AmelOr166	EKFFTYIALSQLISNLTITCCLGYLIVITLHLGNNI-ILIKYIMFYVA-----	288
AmelOr167	ESLFSYIALMQLICNTLIICCIIGFLIVVALN--SNLKLIRISFFYIA-----	299
DmelOr35a	EAQYTVRVFIMFAFAAGLLCALSFKAYTNP MANYIYAIWFGAKTVELL-----	314
DmelOr74a	EKEFTLRIFVMFAFSAGLLCALFFKAFTNPWGNVAYIVWFLAKFMELL-----	315
AgamOr3	ETTFRWVFFVQFIQCTMIWCSLILYIAVVG---FSSTVANVCVQIIL-----	322
AgamOr5	EIIFRWVFLGQFIQCVMIWCSLVLYVAVTG---LSTKANVGVLFIL-----	303
AgamOr13	ESITSLVLLQQLVLCVMIWSSMLLYFTVSG---FDLNFINLLVLFVAF-----	302
AgamOr15	ESITSLALLQQLLLCVLIWSSMLLYFTVSG---FNVNFMNLFVLFVF-----	301
AgamOr17	ESITSLVLLQLILCVLIWSSMLLYFTVSG---FDLNFISLILFVVF-----	301
AgamOr16	HDITAPIMLLQVLVLCIMVWSSMLLYFTVAG---FNTQFISLILVMF-----	299
AgamOr55	ETIVSPIMLMQIVLCVLMSSSMVLYFTFPT---MSGHMINVLLFLV-----	302
AgamOr18	ELVLQPLLLMQFVLCILIWCMMLLYFTVSG---LNVKFINMFLFLF-----	309
AgamOr14	VQALRPILMVQLVFCVFIWCLMMLFFTTIADK---FSVAFFNLAILFVV-----	323
AgamOr51	VKALRPVLLQLVFCVLIWCLMMLYFTITDG---LSVKFFNIGIMFLV-----	311
AgamOr12	NQTL SYVFALQLVLCMLTWCFTLLYVLVVR---LDVTSMMSSLIMIN-----	312
AgamOr19	NQTL SYVFALQLVLCMLTWCFTLLYVLVVR---LDVTSMMSSLIMIN-----	312
AgamOr20	NQTL SFVMTVQLALCILTWCFTLLYILTVG---LDVTGMNGLLIMFN-----	312
AgamOr21	NQTL SFVMALQLALCILTWCFTLLYILIVG---FNAIATNGLLIMIN-----	309
AgamOr50	NQTL SYVMALQALGTLTWCFTLLYILIIIG---LDVTAMMGLLIMN-----	311
AgamOr29	QEALNLSLLFQLTFCSLIWCLMMFYILLMG---FDSRILNVLILLLI-----	300
AgamOr53	EQALNLSVLFQFASCSAIWCLMLFYILLMG---LDSRVLVSVLLLVI-----	290
AgamOr30	QNALNPALLIQTIFCTAIWCLMLFYILLG---FTSKVMNVCLLLLV-----	301
AgamOr46	QNILMEILLAQFTGCVFIWCFMLYYVMISG---ITAEGIAVGAMLIA-----	301
AgamOr47	QNILMEILLAQFTGCVFIWCFMLYYVMISG---ITAEGIAVVAMLIA-----	301
AgamOr48	DSILSLILLIQCVGCLLMLCLMLFYITRN---HSLNVINIAVLLMS-----	311
AgamOr49	DSVLNLMMLLVQFTNTVLMCCFLFYISKN---FNSGAVNVLLFLA-----	318
AgamOr61	SSIVGPFVSVQYYGTALADIADCGF-ILSIEG---LSANGMIYLLFVTV-----	321
AgamOr62	RSIVAPFAFLQYYSTFGLIADSFV-VVSFEG---FTGYSMAYVLFASF-----	319
AgamOr63	KAVIGPIAFVQYYSTYLIADCCCL-ILVSHG---LSSFSIVYFISMLV-----	314
AgamOr60	GSILKPPFSFIQYYGSFTLIGYYCF-ILMYKG---VTPLTVVYIAFIVF-----	316
AgamOr75	RTL LRNYSLVHFSFYMIIVATFMTRVLIIPG---RSSFGLAIPLLVTT-----	320
AgamOr76	RTL LRNYSLVHFFFYMIIVATFMTRVLIIPG---RSSFGLAIPLLTTT-----	320
AgamOr78	RTL LRNYSLVHFFFYMIIVATFMTRVLIIPG---RSSFGLAHPVDDDD-----	321
AgamOr77	KRHMNGSVLLELLFIVCLLALNGLRLCTTTT---TSDLSELALSSSMIL-----	299
AgamOr79	KRHMNGSVLLELLFIVCLLALNGLRLCTTTT---TSDLSELALSSSMIL-----	297
AmelOr99	NENCQYSYLIQVGLNMLGMSTTAVQTVINLD-RPDVAIRSAVFFGADQ-----	320
AmelOr101	NENCQYSYLIQVGLNMLGMSTTAVQTVINLD-RPDVAIRSAVFFGANQ-----	320
AmelOr102	NESNRNSYLIQVGLNMLAISATAVQAVVNLDRPEEAIRSAVFCGANQ-----	319
AmelOr103	NESNRNSYLIQVGLNMLAISATAVQAVVNLDRPEEAIRSAVFCGANQ-----	319
AmelOr104	NESNRNSYLIQVGLNMMGISVTAVQTVINLD-RPEEAIRTAVFLGAEQ-----	320
AmelOr98	NNSSQLSYLQIGINIMGISTTAFQVLVNLDRPQEAIRNAVFCGANQ-----	317
AmelOr100	DESSRNTYLFVGTNIMATSISAVQVVLNLD-KLEVAIKSAVFLIAAQ-----	240
AmelOr97	NKSSRNSYFLQISLTIIGISIIAVQIVMYLH-KPEEAFRISLFLIAAQ-----	264
AmelOr105	EKCCRNLYLIQMGLNIMIISVTCVEVVVFLDRPKEAIRAIIYVIAQQ-----	320
AmelOr109	DACHIHYFLLVIGMIVLAFTGTFLKLSMTEV--GIRFFTFCAYTIAQL-----	308
AmelOr110	DACHIHYFLLTIGMIVLFTGTFTVVKLSTMEM--GIRFFTFCAYTIAAQL-----	307
AmelOr111	DACHIHYFLLIIGMIVLAFTGTFTVVKLSSMEV--NVRFFTFCAFVTVGQL-----	308
AmelOr108	DACHIHYFLLIIGMIVLAFTGTFLKLSMTEI--EIRFFTFCGYTVAGL-----	308
AmelOr107	DACHIHYFFILLGMIIVTFTGTFTIKLTSMEI--GGRFFTFCTFTIGQL-----	308
AmelOr112	ENSYHTYLFVSMGLLIMAISVSLELVANGKN--GSRELVQATFLFAQL-----	305
AmelOr113	EDTHVNLLFISLGLIIMCFSTLLKVVVTMDY--CLDFYKYSSFLIVQL-----	306
AmelOr106	EDFYSMNIFAQVGASILCLTVTLMKIATIKW--SMETNQYGFVIAQV-----	304
AmelOr122	IDLKIKDIHRVVDIHCHAIELLYKALITMDN--RIEIFGSTLIVIYHL-----	279
AmelOr125	IDLKIKDIHRVVDIHCHAIELLYKALITMDN--RMEILGSTLIVIYHL-----	278
AmelOr123	TDLKLRDIHRVVDIHCHAIELLYKALVTTDN--RMEILGSTLIVIYHV-----	276
AmelOr126	TDLKLRDIHRVVDIHCHAIELLYKALITMDN--RMEILGSILIVIYHL-----	276
AmelOr127	IDLKLRDIHRVVDIHCHAIELLYNALITMDN--RVEIFCSTIVVYIYHL-----	276
AmelOr128	TDLKFRDIHRVVDIHCHAIELLYKALITMDN--RMEIFGCILVVAYHL-----	276
AmelOr129	TDLKLRDIHRVVDIHCRTELLYNALIIIMNN--RMEIFGSALMVMYHL-----	276
AmelOr133	IESKLAELYCVVDIHNQAIQLLVNAITIKKD--QLEILISLIIFVNHL-----	181
AmelOr134	IDSKLAELYRVVDIHNQAIQLLVNAITIKKD--QLEILISLIIFTNQL-----	277

AmelOr131	IDSKLAELHRVVDIHNQAIGLVNVNAITIKKD--QLEILITLIIFANHL-----	279
AmelOr132	IDSKLAELYHVVDIHNQAIQLLENAIIVTKD--HLEILICLMLFVKQL-----	279
AmelOr135	IETKLAELYRVVDMHNQAIPELLVNAIIKKD--QLEISISFIFVFNQL-----	277
AmelOr136	IDSKLAELYRVDIHNQAIPELLNAIVIKKD--ELEILISFIFFTTQL-----	279
AmelOr138	IDMKLTELYRAVDIHNQAIGLLVNAIIVKKD--QLEMLISFMILMAQL-----	185
AmelOr130	IDSKLIELYRVVDIHNQTIPELLVNATLIKKN--QLEMLFCFTLVVAIHL-----	279
AmelOr137	IDTKLTELYRAVDIHNQTIIGL-----	253
AmelOr139	INSKLVELYHVVDIHNQVIELLVNMILIRKD--QLEIFMFFIFLVSQM-----	201
BmorOr20	SEAFGPMLFVYYLFHQVSGCLLLECSQLNNTAALVRYGVLTVVLYQQL-----	357
BmorOr3	SEAFGPMLFVYYLFHQVSGCLLLECSQLNNTAALVRYGVLTVVLYQQL-----	357
BmorOr18	SEAFGPMLFVYYLFHQVSGCLLLECSQLNNTAALVRYGVLTVVLYQQL-----	357
HvirOr6	SDVFGPMLFIYYAFHQASGCLLLECSQMTARALMRYLPLTIIMLQQL-----	347
BmorOr23	SETYGLAVLIYYAFQOVVGCCLLQLCSQMEKLTVTRFGFLTIVLNQQL-----	334
BmorOr16	SETYGLAVLIYYAFQOVVGCCLLQLCSQMEKLTVTRFGFLTIVLNQQL-----	334
BmorOr4	SETYGLAVLIYYAFQOVVGCCLLQLCSQMEKLTVTRFGFLTIVLNQQL-----	333
BmorOr5	SETYGLAVLIYYAFQOVVGCCLLQLCSRLDLKTI TRFGFLTIVLNQQL-----	334
BmorOr22	SNVYDVVIIVYYLFHQVSGCLLLECSQLNNTDWESELSRYGPLTLIIFQQL-----	341
BmorOr17	SNVYDVVIIVYYLFHQVSGCLLLECSQLNNTDWESELSRYGPLTLIIFQQL-----	341
BmorOr1	SETFGVILLVYYGFHQVSLCMLLECSDLSTKAMLRYGPLTLIMIQQQL-----	348
BmorOr1a	SETFGVILLVYYGFHQVSLCMLLECSDLSTKAMLRYGPLTLIMIQQQL-----	348
BmorOr1b	SETFGVILLVYYGFHQVSLCMLLECSDLSTKAMLRYGPLTLIMIQQQL-----	348
BmorOr19	QSAFGLNVASNYLQNLIEDGLFLYQIMNGEKENVLMYGLMIILYLGGL-----	326
BmorOr15	QSAFGLNVASNYLQNLIEDGLFLYQIMNGEKENVLMYGLMIILYLGGL-----	326
TcasOr5	NETFGELMLLRFSG----DFIYLVIVGLSS-----	246
TcasOr7	SSFIVVLWLLFVHVSIVTISFVFGKVKEQHQ-----	259
HvirOr4	DDSYGLPLVILISTLLHLIVTPYFLIMEIIVST----NRIHFLVLQFLW-----	302
BmorOr13	DNNNGIIVLLLLASFLHLVTPPYLIISFVTESPHTGFVKVLPILQTVW-----	349
DmelOr10a	RDRYTIITLAHFVSAAMVIGFSMVNLLTLGNNGLGAMLYVAYTVAALS-----	324
DmelOr33c	SRTISEVQLVQLGGCGATLCIIVSYMLFVFGDTISLVYYLVFFGVVVCV-----	297
DmelOr7a	SPVISRTIFVQFLITAAIMGTMINIFIFANTNTKIASIIYLLAVTLQ-----	322
DmelOr22c	TRQFTVIVLMHFLSAAFVLCSTILDIMLNTSSLGLTYICYIIAALTQ-----	321
AgamOr1	QDIFQGSIFAQVCASVIIICMTLLQATGDDVTMADLLGCGFYLLVMTS-----	330
AgamOr4	NTSIRSMLMLQWLTVCVLNWSISLIYLTNVGISLSQSVTVVVMFFLATAE-----	309
DmelOr47b	NRAFNGAFNAQLMASFSLISISTFETMAAAAVDPKMAAKFVLLMLVAF-----	327
AmelOr73	NTVFPQYMIFFLQFTISSVVLCLSIYKFSTVDPPLSMNFVWSGFYLCCLM-----	280
AgamOr68	SDLWSMINLAQVGC SVFGICINMLIIFLTDWYAAAYAILFALFIDLSVH-----	311
DmelOr59a	EAFISLPLMIQFTVTALNVCIGLAALVFFVSEPMARMYFIFYSLAMPL-----	295
DmelOr23a	KSLVSYPMVQFMVIGINIAITLFLVIFIVETLYDRIYYLCLFLGIV-----	292
AgamOr31	INAYKNVILNQLLISSVLLCMLGFQLVIVSGTINIMVVYVAYGMAITIQ-----	290
DmelOr2a	QRVLSVPCMAQFVCSAAVQCTVAMHFLYVADDHHTAMIISIVFFSAVT-----	313
AmelOr62	EQTFNMIIFVQQLMSALLICVGEFVFLVCLSTKDNIGALKSMVLMVTL-----	312
AmelOr121	KMFVEQIINLIITIFKYFFKCLKMYIEEEQFSLFRIIYLICNFTNTFL-----	310
AmelOr140	ESLFTKSILVQLFFNVLCLSITGVETVIKLGNLSEMMRFGSFTFAQAV-----	276
TcasOr12	TNLFTTCTITAQFVVGVIIVCMFMFQMSVLSVLSFQFAAMLLYQICVLM-----	306
AgamOr8	EHMFSPLLNVNLFSSSVIICLVGFQATAGITPADLKFVFLVLSPLVQ-----	309
BmorOr9	ENIFTAPNLFNVLIGSVEICALGFNLMIIGDLTQIPGCILFLSSVLLQI-----	296
AgamOr40	ENCYHPYVLLKLLQILLLCLFSLFMATVESLSTMKLINVLEYFMLSIT-----	371
TcasOr63	EAFISKGIFFLQFGSVIVICTTGFQILVVPISVQFAVLGTYLTCGTT-----	297
TcasOr4	FELWQIKPKIDSCKFIKFRILCILVFLVYTLVPLVDDKEDLSLPLG-----	293
TcasOr13	NDSFGLLILVLSGCLVHLLATPYALYAIIFTGNTMFIITQSIWMTG-----	318
AgamOr24	VDFLNPYHFVTLISTVPTMVISVGLVLLDWPYGAIVFLG-----	289
AgamOr54	CSLFELHFFIVFGCIEFFQLVSNVVIVSVP----DWYPGYFLFIMLT-----	280
AgamOr23	DKLLKKQFFINFGCMIFELVASLAIIVRVPWPYPGMAICLICITNQLFIN-----	303
AgamOr64	CKVFSPI SVVLYYGALITITCTCFYVMKHDVSTTTVCYAGFAVYMLFN-----	324
DmelOr82a	RSIYTPVMGQFVITSLQVGVIIYQLVTNMDSVMDLLLYASFFGSIML-----	302
AmelOr116	QDIFGIIFFQQLFVNCIIVCLAANLSQIKNYITPEFFGSLLYICMIY-----	315
AmelOr160	ANTFSSLMFVQTLGLIFSLCIVVYQLLMTSESGEDMNTIHFIIYSCAV-----	305
TcasOr10	SEISDEIFHSDWSDQVYKNKTARLIVMNRARPAKISIGKFLDLNLR-----	272
TcasOr26	NDTYRYSFVSVIVLCAGTLFGCIGYTVMKFHS-----	273
AmelOr117	NNLFTPIIFIQLLTSGIEICLSGYAVLDNNSANADLLKFI SYFISMG I-----	315
AmelOr120	EKNFHLILFLQAITSSLIICFVGFQISIALTERSKFLESFSLHIVSLF-----	317
BmorOr7	QSIFSSAILIQFGIGAWILCMAAYKIVNLSVLSIEFASMILFISCILT-----	307
AgamOr6	LDAGVNVWRNGYMLVKVFLFMLCFLIELLMLCAYGEDIVESVRHQAVMS-----	319
DmelOr45a	SSIFGEIVFVKYMLSYLQCLMAFRFRSRSWSAQVPPFRATFLVAIIIQ-----	295
DmelOr67d	KKIYSIVLQVQLSTTCVGLLCTISCFMKAWP----AAPLYLLYAAIT-----	307
DmelOr83c	TDYCRAINALYYELIATQVLSMALAMMLSFICINLSSFHMPSAIFFVVS-----	312
AmelOr162	EDTNTTSYLLQLGFNMICISFTQFQAIINIEDTPKVLRYVSTIALLC-----	285
HvirOr3	ESIFKEYFLVQNLAVTVELCLNAVMTVVGVHQITLLVSVFVAYLLLALVN-----	186
TcasOr20	DLAFNQMMLLHITWTGFIISVLGFEISTDDYVEAFRFFMHLLGWLGM-----	303
AgamOr11	EQLTRAAVFLDFVVFVSVLLCALLFEASMTPSGVQVVIDVCYITMTMTI-----	341

DmelOr56a	QYLICVPMADFIIFSVLICFLFFALTVGVP SKMDYFFMFIYLFVMAG-----	335
AgamOr28	EDGFSFFLMAQFLTSSILV CVVLYELTMVFGWNEDTFKTVTYLPGAIL-----	335
AgamOr58	RNNLKLYLLNLVADFSLITFAGCQMVISSEGDQHLYSILAALTAACLN-----	303
AgamOr59	QRMASFVFLQHIFSLGLVAGSVYTLRGPALRENIVLSEYPI SVVLEY-----	324
DmelOr1a	NYSFMEIAFVEVVIICGLYCSVICQYIMPHTNQNF AFLGFFSLVVTQ-----	304
DmelOr13a	EDFFNPILLANLMISSVLICMVG FQIVTGKNMFIGDYVKFIIYISSALS-----	316
AmelOr161	ERIINLLALGQFVISTGLICFAGFQITSMMEDKGRMLKYSTFLNSAIL-----	302
AmelOr141	EHLTSGMFFIQVIAS TYNISLVGFKLLEDTPDKFKYITQLIILIIQLF-----	349
AgamOr52	NRVHSFSITVQYYTALLSLAIDAFFISY YGLNFVSVCVSIFSVLLVFE-----	291
AgamOr36	KPFLQTTFLVMFYSAALFLAIGTFMISANGTTTYGVILSGFLFALLE-----	312
AgamOr25	EQTYYIDLVDLDFGLVCLILCMGLNVI ADEVINAIWFFLI AVVFQLSLL-----	283
AgamOr45	YETYQMHHFMSFVLCFVICMCMNVVARDPR-----STLIPFGLASTG-----	304
TcasOr3	ESIYSTQTFVQTFISLGEMCFSLYLLSETADQNI GNEITYLIATGFEL-----	328
DmelOr88a	NDIFKVAFLVSNFVGAGSLCFYLFMLSETSDVLI IAQYILPTLVLVGF-----	320
AgamOr22	SSIYREVYLMQVLC SIVHICVSLFHIQIKFK-----NGSYGMLLTNVN-----	303
DmelOr49a	NYVFGLLLASNLF TTSCLLCCMAYYTVVEGFNWEGISYMMLFASVAAQ-----	312
DmelOr85f	NGIFYKSLLLSLLTTAAVICTVAVYTLIQPTLEGFTYVIFIGTSVMQ-----	309
AmelOr119	NKIYLSMLVQMISSSTSIICLTGFQAVVVGQSSNIMKYGIYLSAAMS-----	329
DmelOr63a	NNCFRHITFTQFLLSLFNWGLALFQMSVGLGNSSITMIRMTMYLVAAG-----	334
DmelOr67b	ENLFKYIILVQCSVSSILICMLLYKISTVLEVGWVWGMIMVYFVTIA-----	335
BmorOr21	QDTFNIWLGLIYVATMIQMCCTCMYHIVQSFNIDVRYIIFVISIHIYLP-----	313
BmorOr11	KVNFSILYEYNMKITTISMPLSAFQVVESLRREFNIEFTYFFFGCIL-----	313
BmorOr12	QIMCRTVFSANIMLDTFVLVILMLAMVNS ENDFYGLCSQMSSVLVTVV-----	317
AgamOr33	KRLYEPNIMAQFVCSMLIICLTA FELMFAKGDPMQMVRFGAYMLAGFY-----	289
HvirOr1	DEVISGVVVISFANNLFFICLQLFNTLEDGLKGTGECTQLNSQSKLKKIVVSKSGPLGGH	339
HvirOr5	DVALGGIVILSCSCNFYFICLQMLFGITQGLSSDLLSLIYYVISLAWLCT-----	249
TcasOr1	RVFFT VFNVVHCYLA SELVLMKNRFVTLNVQLTKLTKNCATKAQSVVLG-----	267
TcasOr2	NEIYGVPLLLFFGLNFLIITQAMFLVVGQLQASQIHWQKIIIVMSSV-----	290
TcasOr16	-----LAQVFHFCIFGNRLIEESSVM EAAYS---CHWYDGSEEA-----	427
AmelOr2	-----LGQVFMLCIFGNRLIEESSVM EAAYS---CHWYDGSEEA-----	430
AgamOr7	-----LAQVFLFCIFGNRLIEESSVM KAAYS---CHWYDGSEEA-----	430
AaegOr7	-----LAQVFLFCIFGNRLIEESSVM EAAYS---CHWYDGSEEA-----	414
DmelOr83b	-----LAQVFHFCIFGNRLIEESSVM EAAYS---CHWYDGSEEA-----	438
BmorOr2	-----LGQVFHFCIFGNRLIEESSVM EAAYS---CQWYDGSEEA-----	424
BmorOr2a	-----LGQVFHFCIFGNRLIEESSVM EAAYS---CQWYDGSEEA-----	424
HvirOr2	-----LGQVFHFCIFGNRLIEESSVM EAAYS---CQWYDGSEEA-----	424
AgamOr56	-----IFQTFSF SYLGT ELIEQSEAVADAI FH---SKWYTQKLN R-----	347
AgamOr57	-----IFQTFSF SYLGT ELIEQSEAVADAI FH---SKWYTQKLN R-----	347
AgamOr26	-----MFQMF SF SYLGT ELIEQSEAVADGIFN---SKWY EEDVKV-----	347
AgamOr27	-----IFQTFSF SYLGT ELIEQSEAVADAI FH---SKWYTQKLN R-----	347
HvirOr9	-----LMQIFLYCYGDTIMRSMQVSTSIYN---SPWYNIRAAD-----	350
HvirOr7	-----LMQVFLCF FADLMTASLEISNAVYN---CRWYSANIKV-----	334
DmelOr85b	-----MSQVYLICHY GQLVADASYGFSVATYN---QKWKADVRY-----	340
DmelOr85c	-----LSQVYLICHY GQLIADASSLSISAYK---QNWQNADIRY-----	339
DmelOr85d	-----MVQVFMIATHAQR LVDASEQIGQAVYN---HDWFRADLRY-----	362
DmelOr67a	-----LLEVYLLCSFSQRLIDASENVGHAA YD---MDWLGS DKRF-----	358
DmelOr67c	-----MVQVFMVCY YGDTLIAASLKVGDAAYN---QKWFQCSKSY-----	353
DmelOr92a	-----LVQVFVVCY YGDEMISSSSRIGHSAFN---QNWLP CSTKY-----	358
DmelOr69a	-----VLYNFVICYMGTEVTLASGKVLPAAFY---NNWYEGDLVY-----	345
DmelOr69b	-----ITYNFMSCRSGTHLILTS GKVLPAAFY---NNWYEGDLVY-----	345
TcasOr6	-----VLELIVNSQGLETYARASDTLIPQCQL---VCKIFVLAKY-----	324
TcasOr11	-----DWGKNQAYKYKTD-----	285
AgamOr41	-----TMQLFLFC LLGTIIEDKGVKFSAGVYS---LTWNELSKQD-----	335
AgamOr42	-----VMQMLILCSLGT LIELKSDQFKDQLYD---IAWPEMDLPE-----	340
AgamOr43	-----VIQLFELCLLGTILSIKNEEIEHAFYD---SLWYLM DHSE-----	337
AgamOr44	-----VVQLFELCLLGTILSIKNEEIEHAFYD---SLWYLM DHSE-----	337
AgamOr66	-----VFQLFVYCLMGTVMQIMNERMIDYISN---LPWYMLPTEE-----	341
AgamOr67	-----VFQLFVYCLMGTVMQIMNERMIDYISN---LPWYMLPTEE-----	341
AgamOr72	-----FVQLSGFFVIGHLVELKIDAMYNKIIS---MPWYKLPKE-----	337
AgamOr73	-----FVQLSGFFVIGHLVELKIDALYNKIIS---MPWYR LPVKE-----	337
AgamOr71	-----FVQLSGYFVIGHLVEIKIDALYNKIIS---LPWYKLPVKE-----	337
AgamOr74	-----FVQLSGFFLIGHLVELKNDALYNKVIS---MPRYKLPVKE-----	337
AgamOr70	-----FIELSLYFLIGHLIEQKIDAMYNKIIS---MPWFKLPVKE-----	337
AgamOr69	-----FVELSIYFVIGHFVELKIDEMYSIIS---MPWYKLPVEE-----	341
TcasOr9	-----SIELLIYTYSGQVLTQNADIVG-TLYE---SPWYMC DVHF-----	246
TcasOr18	-----STELFIHTYSGQILTENADFLW-TLYE---CPWYLC DVTY-----	357
DmelOr83a	-----LYELFIIICYFADIVFQNSQRCEALWR---SPWQRHLKDV-----	402
DmelOr85e	-----IFELLMFTYCGELLSRHSIRSGDAFWR---GAWWKHAHFI-----	411

TcasOr24	-----ITAI FVSSFGGQILIDSSLSVAEAAYS---	SAWYEADIMK-----	333
TcasOr25	-----STATFIACYGGQLLMDASTSIADDEFYN---	CPWYEADV KM-----	333
TcasOr19	-----IISLFTSCLAGQILLDSSTSVADALYN---	SQWYTADV KL-----	298
TcasOr22	-----QAGFAAFSSAVTRVISESLTIPDAALD---	SKWYEAPIKS-----	334
TcasOr23	-----ICSFFICCHAGQAVISESLTIPEAALD---	SHWYEAPVKY-----	331
AmelOr168	-----LIQFYILCYCIQDLFEASTSIADVVY---	EKWYSYDVRF-----	340
AmelOr170	-----LIQFYILCYCIQRLFEASSIADVVY---	EKWYYYDVRF-----	347
AmelOr169	-----LIQFYILCYCIQQLLEASTTVADVVH---	EKWY LHDVKF-----	353
DmelOr65b	-----ALGHLSMWSYCGDQLSQSLQISEAAAYE---	AYDPTKGSKD-----	335
DmelOr65c	-----ALGHLSMWSYFGDLLSQSLTISEAAAYE---	AYDPIKGSKD-----	335
DmelOr65a	-----TLGHLSFWSKFPGDMFSKESEQVALAVYE---	AYDPNVGSKS-----	367
TcasOr17	-----	-----	
TcasOr21	-----	-----	
TcasOr56	-----MLFQLLCYCWHGNEVQIVSGELSRYA FG---	INWIIM-RES-----	383
TcasOr15	-----	-----	
AgamOr9	-----LVIQVVQYCYFGNEINYMAQKVHQATAF---	VNYPDM-NIK-----	366
AgamOr65	-----LVIQVAQYCYFGNEINYMAQKVHRATAF---	VNYPDM-NIK-----	369
BmorOr6	-----ILGQLYLYCWCANELTTKSEQLRDTLYL---	TPWYDQ-DMK-----	339
BmorOr10	-----MLSQLFQYCWCGHELTIRGEELRETLYQ---	SPWHEQ-DIR-----	336
AgamOr34	-----MTMQIGLPCYYGNEVTLKSYALTNAIYS---	SRWYDM-PQS-----	328
AgamOr37	-----MIFQMFLPCRFGNEVTRKSHLLRTSIYS---	SRWYEM-GLQ-----	340
DmelOr94a	-----MILQIYLP CYYGNEITVYANQLTNEVYH---	TNWLEC-RPP-----	337
DmelOr94b	-----MIVQIFLPCYYGNELTFHANALTNSVFG---	TNWLEY-SVG-----	333
DmelOr71a	-----MIMQVMLPTIYGNVIDSANMLTDSMYN---	SDWPD M-NCR-----	328
DmelOr46a	-----MLIQIFILCY YAGEVTQRSLDLPHELYK---	TSWVDW-DYR-----	330
DmelOr46b	-----MLWQIFIIICYASNEVTVQSSRLCHSIYS---	SQWTGW-NRA-----	333
HvirOr8	-----MILQILVPCWFGQRIIDKSNLLAFSAYD---	CEWTSE-TRQ-----	345
BmorOr8	-----MTLQIFVPAWMTQLHFQSQELVFAAYN---	SEWIPR-CQS-----	342
AmelOr68	-----MMTQIFVYCYWGNQLKLSVEVVD TIFE---	LDWISL-DNR-----	324
AmelOr69	-----MLTQIYIFCYWYGNVTKLSLDISNMIFE---	LDWPD L-DNT-----	319
AmelOr70	-----VLVQILYCYWFSNEVKLSLEVPGMIFK---	SDWTSW-DDK-----	321
AmelOr71	-----SLMQIFYYCWFSNEVKLSLELSDMIFR---	SNWTS L-NNN-----	320
AmelOr72	-----ALIQIFYFCWHGDI AKYKSL EIPDMIFN---	SNWPNL-SNE-----	321
DmelOr19a	-----LTTETLLL CYTAELPCKEGESLLTAVYS---	CNWSLQ-SVN-----	333
DmelOr19b	-----LTTETLLL CYTAELPCKEGESLLTAVYS---	CNWSLQ-SVN-----	333
DmelOr33a	-----MLIELFPSCYYGILMTMEFDKLPY AIFS---	SNWLKM-DKR-----	328
DmelOr33b	-----MVLELFPCCYYGTLISVEMNQLTYAIYS---	SNWMSM-NRS-----	330
DmelOr22a	-----VSMETFPFCYLCNMIIDDCQEMS NCLFQ---	SDWTS A-DRR-----	342
DmelOr22b	-----VSMQTFPFCYLCNMIMDDCQEMADSLFQ---	SDWTS A-DRR-----	342
DmelOr42b	-----ILLQTFPFCYTCNLIMEDCESLTHAIFQ---	SNWVDA-SRR-----	342
DmelOr59b	-----ILLQTFPFCYTCNMLIDDAQDLSNEIFQ---	SNWVDA-EPR-----	343
DmelOr59c	-----ICTESFPCCMLCEHLIEDSVHVSNALFH---	SNWITA-DRS-----	346
DmelOr98a	-----LMVQTFPFCYVCDLLKDKCELLVSAIFH---	SNWINS-SRS-----	340
DmelOr42a	-----VLLETFPFCILCNYLDCYKLADALFQ---	SNWIDE-EKR-----	345
DmelOr85a	-----ILSQTFFPCYVCEQLSSDCESLTNTLFH---	SKWIGA-ERR-----	340
DmelOr43b	-----VLLQTFPLCFYCNAIVDDCKELAHALFH---	SAWVVQ-DKR-----	345
AgamOr2	-----MFAFYWHANEVLEQSLGIGDAIYN---	GAWPDFE EP-----	328
AgamOr10	-----IFAFYWHSNEVREESMAIAQASYS---	GPWLNVD D T-----	325
DmelOr30a	-----SVVLYYVANELYFQSFDAIAAAYE---	SNWMDFDV D-----	327
DmelOr49b	-----ILALYWYANELREQNLA VATAAYE---	TEWFTFDV P-----	325
DmelOr43a	-----LFTYYNRANEICLENNRVAEAVYN---	VPWYEAGTR-----	325
AgamOr32	-----AAIYTYHGS AISAKSVSVADAIYG---	TNWDAPLAV-----	329
AgamOr35	-----AVIYCYHGSMYDES LKVADAIYQ---	SNWYEAPP AE-----	339
DmelOr47a	-----AYIYCYCGENLKTESASF EWA IYD---	SPWHESLGAGG-----	333
DmelOr98b	-----VSIYFCGSSIHSECQLFGQAIYE---	SSWPHLLQEN-----	332
DmelOr9a	-----LFIYSKCGENIKSASLDFGNGLYE---	TNWTDFSPPT-----	344
AgamOr38	-----LFMYSYGGTVVRESSEAIQT VAYG---	FPWYQFDRNT-----	360
AgamOr39	-----LFLYSYSGTIIRDSSEAVQTVAYD---	FPWYRYDRNT-----	361
DmelOr24a	-----IFLYCLGGSHIMEACSNLARSTFS---	SHWYGH SVRV-----	340
DmelOr45b	-----IFLYCYGGTEMSTESLSLG EAAYS---	SAWYTWDR ET-----	349
AmelOr74	-----HIIFFTYICHGLMEESGNVGLATYS---	GWWTTLPMNE-----	345
AmelOr86	-----HIIFFTYICGGLIEESSNIGLATYS---	GWWTVLPME-----	344
AmelOr75	-----QLLIFFTYSCDNLIRQSVNVGNVAVFS---	GPWVNLPM SK-----	344
AmelOr84	-----QLLMFTYSCDDLIRESVNVGNVAVFS---	GPWAE LPM DK-----	341
AmelOr87	-----QLLLFTYSCDSL IQESTNVGS AVYS---	GPWICLPMNR-----	369
AmelOr76	-----QLLMFTYSCDCLIRDSMDIADAAYN---	CSWSFLPM DK-----	347
AmelOr85	-----QLLMFTYSCDCLIRDS T NIANATYN---	SLWSFMPM DK-----	352
AmelOr88	-----QLLMFTYSCDCLMHDSMSVANAAAYN---	SLWPCLPM DK-----	350
AmelOr91	-----QLLMFSYSCDCI IRESVSVATAAYG---	GPWTLLPMTI-----	351
AmelOr92	-----QLLMFSYSCDCILRESVSVATAAYE---	GPWTLLPMTI-----	348

AmelOr95	-----QLLMFTYSCDCI IRESLSVATAANR-----GPWPMPMTT-----	347
AmelOr93	-----QLLMFSYSCDCIIRWTLX-----PLLSMTS-----	325
AmelOr77	-----	
AmelOr94	-----QLWMFTYSCDCMTRESVNVASAVYC-----IPWTRIPMDK-----	346
AmelOr96	-----QLWMFTYSCDCITQESAKIASAAYA-----SPWINLPMDK-----	346
AmelOr79	-----LLFMVITYSCNGVTEHSDNVAIGAYS-----ALWTIVPMDK-----	346
AmelOr83	-----LLFMFTYSCNDVMEHSDNVAIGAYS-----ALWTILPMDK-----	351
AmelOr80	-----LLFMVITYSCNGVIEHSDNVAVGAYS-----ALWTIMPMDK-----	349
AmelOr81	-----LLFMVITYSCNGVIEHSDNVAIGAYS-----ALWTIMPMDK-----	346
AmelOr82	-----LLFMVITYSCNGVIEHSDNVAIGAYS-----ALWTIVPMDK-----	348
AmelOr78	-----LLFMFTYSCNGVMEQSDNVAVGTY-----ALWTVMPMEK-----	348
AmelOr89	-----LLFMFTYSCNCVTEHSENIAGAYS-----ALWTAMPMDK-----	345
AmelOr90	-----LLFMFTYSCDGVIEQSDNVAVGAYS-----ALWTIMPMDK-----	346
AmelOr142	-----ELFMYAWPADSLMHMTMKMATKVYN-----MDWYGKDIR-----	320
AmelOr146	-----AVFMCAPADYLMVDSENTMRAVYE-----SEWYKRSLK-----	320
AmelOr148	-----EIYMYAWPADHMQDASINILRSAYN-----SIWYEQSLD-----	317
AmelOr158	-----QIYIYAWPADHYMDMSINVLRSAYN-----SIWYEQTL-----	318
AmelOr147	-----EIYMYAWPADHYMDMSITVLQSVYD-----SMWYGQTLN-----	318
AmelOr150	-----EIYIYTWPANHMKDMSINVSQSIYN-----ITWYKQTLR-----	320
AmelOr151	-----EIYIYAWPADYMKDMSINVSQSVYN-----ITWYKQTLR-----	320
AmelOr152	-----EIYMYAWPADHMKDMSINVSQSVYN-----TIWYEQTLR-----	320
AmelOr154	-----EVYMYAWPADYVKNMSINISRSVYE-----LSWYEQTIE-----	320
AmelOr155	-----EIYIYAWPADYVKNMSINISQSVYE-----LSWYEQTLE-----	320
AmelOr157	-----EIYLYALPADYMYDMSMNI SRSVYD-----SIWYEQRLD-----	317
AmelOr156	-----EVYLYAWPAQYMDDMSKNVSI SAYN-----LKWYEQTSE-----	320
AmelOr153	-----NYYMYIWPADYMTDKSINVS RKIYD-----SMXYKQMLK-----	296
AmelOr144	-----HLFVIWSPADDLRESSIQFAESIND-----IQWLGQSKK-----	321
AmelOr145	-----HLFVIWSPADDLRESSIQFAESIND-----IQWLGQLKK-----	322
AmelOr143	-----HLYVIWSPADDLRESSVQFSNSISD-----IQWLGQSNK-----	316
AmelOr1	-----FVNVFIIISFIDRLKQESERIRETSYF-----IPWYDFPTE-----	350
AmelOr3	-----FVNVFIIISFIDRLKQESERIGQTSYF-----LPWYEFPTE-----	353
AmelOr6	-----ILVTYIVCYIGQLLIDESNNLARTCIT-----LNWYHFPTR-----	345
AmelOr7	-----IFVTYIVCYIGQLLIDESNNLARTCIT-----LNWYHFPTR-----	345
AmelOr4	-----TLMIIYICYIGQLLIDESNNLAQTCIT-----LNWYRFPKK-----	347
AmelOr5	-----IFIYIYICYIGQLLIDESNNLAQQCIT-----LSWYHFPTR-----	347
AmelOr8	-----VFGTFSICYVQQLLVDESESVRQACKT-----LKWYRLPTK-----	347
AmelOr9	-----VFGTFSICYVQQLLVDESESVRQACNT-----LKWYRLPTK-----	347
AmelOr11	-----VIGTFSVCYVQQLLIDESENIRQAYNT-----LNWYRLPVK-----	345
AmelOr12	-----FIGTFAVCYAGQLLVDESESVRQACST-----LNWYRLPVK-----	347
AmelOr10	-----LIGSFSVCYVQQLLIDESENIRQAFIA-----LKWYQLPVK-----	346
AmelOr14	-----ISCTFIMCYVQQLLIDESGNNVRRMSIT-----LDWYRFPVK-----	349
AmelOr15	-----FGVTFTMCYVQQLLIDESGNNVRRMSIT-----IDWYRFPVK-----	350
AmelOr13	-----IFCTLLICYIGQLLIDESDKVRQISVT-----LDWYRLPVN-----	341
AmelOr16	-----IFCVFIIICYIGQLLVDESVRQASST-----INWYRLSIK-----	352
AmelOr17	-----IFCFIICYIGQLLVDESVRQASST-----INWYRLSIK-----	352
AmelOr18	-----TFNIFIFCYIGQLLAEQTVKVGESY-----IDWHRMPWK-----	361
AmelOr19	-----TFNIFIFCYIGELLAEQTVKVGKFY-----IDWYRMPWK-----	361
AmelOr22	-----TFNIFIFCYIGELVAEQCKKIGEISY-----VDWYRLEGN-----	362
AmelOr24	-----TFNIFIFCYIGELVAEQCKKIGEISY-----VDWYRLEGN-----	354
AmelOr20	-----TFNIFIFCYIGELVAEQCKKIGEISY-----IEWYRLMGN-----	358
AmelOr25	-----TFNIFIFCYIGDGVAEQCKKIGEMAY-----IEWYRLTGK-----	353
AmelOr29	-----TFNIFIFCYIGELVAEQTEKVEVAY-----IEWYRIRGK-----	354
AmelOr30	-----TFNIFIFCYIGDLVAEQCKKIGEMTY-----IEWYRLTGK-----	354
AmelOr21	-----IFNIFVFCYIGELLDQSRKIGEVTY-----IEWYRLSGK-----	354
AmelOr23	-----IFNIFIFCYIGELLDQSRKIGEVTY-----IEWYQLFGK-----	354
AmelOr35	-----IFNIFILCYIGELSECKSIGLSAY-----IDWYRLPGK-----	363
AmelOr27	-----CFNIFIICYIGELTEQCKMIGEVVY-----TDWYLLPDK-----	356
AmelOr28	-----CFNIFIICYIGELTEQCKMIGEVVY-----TDWYLLPDK-----	356
AmelOr33	-----IFNIFIICYIGDILTEQCKMIGEA-----TNWYLLPDK-----	358
AmelOr34	-----IFNIFIICYIGDVLTEQCKMIGEA-----TNWYLLPDK-----	358
AmelOr32	-----IFNIFIICYIGDILTEQCKMIGEA-----TNWYLLPDK-----	358
AmelOr31	-----SFNIFIICYIGDILMEQCKMIGEVLY-----TNWYLLPDK-----	357
AmelOr36	-----TLNTFLICYIGELVTERCKEIGNMVY-----TNWYRLPKK-----	354
AmelOr37	-----TLNTFLICYIGELVTERCKEIGNMVY-----TNWYRLPKK-----	355
AmelOr38	-----TLNTFLICYIGELVTERCKEIGNMVY-----TNWYRLPKK-----	356
AmelOr39	-----IFSTFLICYIGELVTERCKEIGNMVY-----TNWYQLHDK-----	356
AmelOr47	-----TLNTFLICYIGELVTERCKEIGNMVY-----TNWYRLPKK-----	355
AmelOr48	-----ILSTFLICYIGELVTERCKEIGNMVY-----TNWYHLPDK-----	355
AmelOr40	-----ALSTFLICYIGELVTEKCKEIGNMVY-----TNWYRLSDK-----	355
AmelOr43	-----TLNTFLICYIGELVSEKCKKISNMIY-----TNWYRLSEK-----	356

AmelOr45	-----SLGTFLICYVGEILTEKCKEIGNMVYM---TNWYRLPKK-----	355
AmelOr41	-----ILSLFLICYISEVLNEKCKEIGNIVYM---TNWYRLSDK-----	355
AmelOr42	-----ILSLFLICYISEVLNEKCKEIGNIVYM---TNWYRLSDK-----	355
AmelOr44	-----ILNTFLICYIGEILSEKCKKISDMIYM---TNWYQLSDK-----	355
AmelOr46	-----TCNIFLICYIGEILTEQCKKIGEIIM---TNWYELSNK-----	354
AmelOr49	-----TYNIFLVCYIGEIIITECKKIGDIVYM---TNWYELSDK-----	355
AmelOr50	-----SFNILLVCCIGEILREQCKKVGDMVYM---TNWYQLPDK-----	357
AmelOr26	-----VFNIFIFCYIAEIVTEQCKKVGKIFYM---TEWYQLPHK-----	360
AmelOr53	-----TFNIFIFCYIGEILTEQCSQIGTVSYE---IDWYKLSPK-----	361
AmelOr54	-----TFNIFIFCYIGEILTEQCSQIGTVSYE---IDWYKLSPK-----	359
AmelOr52	-----TFNIFIFCYIGEILSEQCSQIGTISYE---INWYKLPK-----	356
AmelOr51	-----TFNILIFCYVGEILLGQSEIATALYE---IEWYNLPGR-----	358
AmelOr55	-----TFNMFLCYIGDLLIHKSGNIGVAVFM---IDWYHLPK-----	357
AmelOr57	-----TFNMFLCYIGDLLIEKSGNVGAVFM---IDWYHLPK-----	357
AmelOr56	-----TFNMFLCYIGDLLIQKSSNIGVAVFM---IDWFHLPK-----	357
AmelOr58	-----VFNIFLICYIGNLLIEKSSNIGIVCCM---IDWYQLPIK-----	359
AmelOr59	-----IFNIFILCYIGELLMEKSSNIGLSCFM---IDWYKLSPK-----	360
AmelOr60	-----TFNIFILCYIGELLMEKSSNIGLSCFM---IDWYHLPK-----	360
AmelOr61	-----TFNIFILCYIGERLMEKSSNIGLSCFM---IDWFQLPK-----	360
AmelOr63	-----LIQLFAYSVVEYLKQTQTEGLGNSIYF---CTWYDMPKN-----	346
AmelOr64	-----LIQLFAYSVVEYLKQTQTEGLGNSIYF---CTWYDMPKN-----	342
AmelOr66	-----LIQLFAYSVVEYLKQTQTESLGNSVYF---CTWYEMPKN-----	342
AmelOr65	-----LIQLFAYSVVEYLKQTQTESVGNVYF---CTWYDMPKN-----	342
AmelOr67	-----LIQLFAYSVVEYLKQTQTEGIGNSVYF---CTWYDMPKN-----	342
AmelOr114	-----YVMLQLYLYCYVGERLSVESMEIVNAAYN---TEWYTLPTN-----	321
AmelOr115	-----YTMLHLFIYCYVGETLLGQSTGIGLSTYH---CNWYDLPSR-----	344
AmelOr118	-----VNCEAFILCYTGEYITSKSENINKAVYN---FLWYNLKP-----	322
AmelOr164	-----LNFEALILCYTGEYLSSKSENISWIAYN---SNWYELSIY-----	334
AmelOr163	-----ANCEAFILCYTGEYLMFKNESIVHAAAYD---TLWYNLNP-----	336
AmelOr165	-----ICLEAFIYCFAGEYLRK-----	307
AmelOr166	-----VCSEAFIYCFAGEYLSIKSKLIADTAYE---FLWYMNPN-----	325
AmelOr167	-----ITLEAFIFSIAAGEYLSNKSLSVSIAYE---SPWYLLSPK-----	336
DmelOr35a	-----SLGQIGSDLAFTTDSLSTMYL---THWEQILQYSTN-PS--	350
DmelOr74a	-----ALGMLGSILLKTTDELGMMYYT---ADWEQVIHQSDN-VG--	351
AgamOr3	-----VTVETYGYGYFGTDLTTESYVALAIYD---SEWYKFSIS-----	359
AgamOr5	-----LTVETYGFCYFGSDLTSELSVARAAYG---SLWYRRSVS-----	340
AgamOr13	-----DTTETIAYCYFGEQLSNE SARVAHTVYE---SGWETQTPD-----	339
AgamOr15	-----DTTETFAICYLGEKLSYESARVAHTIYE---SGWETQTTD-----	338
AgamOr17	-----DTTETFAICYLGEKLSYESARIAHIVYK---NGWERQHAY-----	338
AgamOr16	-----DTTETFGYCYLGNQLSDESARVASVYD---CRWEGMPPA-----	336
AgamOr55	-----VSTETFGYCYLGTQLSMESARIAVAVYN---GKWEQQPRE-----	339
AgamOr18	-----VSIETFGYCYLGTQLSQESINVGQALYA---SGWYEDVQ-----	346
AgamOr14	-----ITIETFSACYFGEQLSQAVALSKSVYG---CGWPAMDRD-----	360
AgamOr51	-----ITIETFSACYFGEQLSQAVALSKSVYG---CGWPAMDRD-----	348
AgamOr12	-----LTPEMFGYCFFCSDLTTTGTISRQMYE---FQWERHRPA-----	349
AgamOr19	-----LTPEMFGYCFFCSDLTTTGTISRQMYE---FQWERHRPA-----	349
AgamOr20	-----MTLEMFGYCFFCTELATTGLIACQSYE---FRWEEHDPK-----	349
AgamOr21	-----MTLEMFGYCFFCTELDTTGTKIVSRQMYE---FRWEQHRPT-----	346
AgamOr50	-----MTSEMFGYCLFCTELTNTATTISQIYV---FQWEKHSVA-----	348
AgamOr29	-----VTVETYTYCTLGTQLTDKGEVLMALQQ---LAWYDQPSIP-----	337
AgamOr53	-----VSIETYAYCMLGSLTTQGEDLLMALQQ---LSWYDQSPV-----	327
AgamOr30	-----LTCETYSYQLGTQFTSNAEEVLDELQQ---LARYDQPSIP-----	338
AgamOr46	-----LSTETFI FCLLGNELTLKGLEISTAMYS---TNWYDQPVK-----	338
AgamOr47	-----LSTETFI FCLLGNELTLKGLEISTAMYF---TNWYDQPVK-----	338
AgamOr48	-----IFIEMMCFSYLGNQLTEENANISHSAFN---CRWYDEPIV-----	348
AgamOr49	-----LTVENLCFSYFGNRLSTENTSVIAIVYS---TDWYNPPC-----	355
AgamOr61	-----LVFQSFILCRGIEKLNLDLNEAIGQALYSG---FDWPDMLQY-DQ-RFRR	365
AgamOr62	-----LILESLLLRCGVEDLNDLNRQIGTILYN---FDWPRLLRF-SI-HYRR	362
AgamOr63	-----FLTESFLLCHGVENLRDLKPRIASTVYD---FDWMLQMRCPNP-RHRA	358
AgamOr60	-----LVAESFLFCRILSQINDLHARIGTMCE---LEWYDKLRF-ST-RFAS	359
AgamOr75	-----IYFLETFGMCMLEMLVQLNRKVSTSLYG---FSWPQYLR-----	358
AgamOr76	-----IYFFETFGMCMLEMLVQLNRKVSTSLYG---FSWPQYLR-----	358
AgamOr78	-----LFLSKTFGMCMLEMLVQLNRKVSTSLYG---FSWPQYLR-----	359
AgamOr77	-----IYLLELFQYCWQVDEMELLLHEGQAFVYS---TPWTGAIMQ-----	337
AgamOr79	-----IYLLELFQYCWQVDEMELLLHEGQAFVYS---TPWTGAIMQ-----	335
AmelOr99	-----FHLFLLSLPGQILLDHCADFANAIYD---STWYGTSL-----	355
AmelOr101	-----FHLFLLSLPGQILLDHCADFANAIYD---TTWYGTSL-----	355
AmelOr102	-----FHLFVLSLPGQVLLDHCSEFSNNIYS---CIWYRAPVR-----	354
AmelOr103	-----FHLFVLSLPGQVLLDHCSEFSNNIYN---CIWYRVPVR-----	354
AmelOr104	-----FHLFVLSLPGQVLLDHCSEFSNNIYS---STWYRIPVK-----	355

AmelOr98	-----FHLFVLSLPGQILLDHCAELSNTIYC---SMWYKLPVK-----	352
AmelOr100	-----FHLFILSIPGQILLNHYSNLKNNIFM---SSWYNMPIE-----	275
AmelOr97	-----FHLFIITLTGQVIADQSSKLSNNMYC---TTWYRMPNN-----	299
AmelOr105	-----FHLFYAISLPGETLLNQSSKLADKIYD---SEWYKIPMK-----	355
AmelOr109	-----IHLFFLTIMGQFLINANEETFKTIYE---ADWYNGSSK-----	343
AmelOr110	-----THLFFLTIMGQFLINANEEIFRTIYE---ARWYNGSSK-----	342
AmelOr111	-----THLFFLTIMGQFLINANEEIFKTIYE---ARWYNGSSR-----	343
AmelOr108	-----THLFFLTIMGQFLINANDEIFNTIYE---AHWYNGSSR-----	343
AmelOr107	-----THLLFLVMVGQFLIDSNEEVFKTIYD---ARWYYGSSK-----	343
AmelOr112	-----FHTFILTVOGQFVINELQDVYESIYE---SPWYTFSPR-----	340
AmelOr113	-----MHLCYVMIQGQFVIDSCNEIYYSIYE---ASWYNINPK-----	341
AmelOr106	-----VHIFFLTAQGQFVIDSHDNVYRDMYE---PYWYNVQYK-----	339
AmelOr122	-----MIAFYNNHCGQLIIDSNLGIFNELFA---STWYRIPLK-----	314
AmelOr125	-----MIAFYNNHCGQLIIDSNLGIFNELFA---STWYRIPLK-----	313
AmelOr123	-----MMALYNNHYGQLIINSNHGIFNELCA---STWYRIPLK-----	311
AmelOr126	-----MMALYNNHYGQLIINSNHGIFNELCA---STWYRIPLK-----	311
AmelOr127	-----MTALYNNHYGQLIINSNHGIFNELCA---STWYRIPLK-----	311
AmelOr128	-----MIAFYNNHCGQLIIDSNLGIFNELYA---STWYRIPLK-----	311
AmelOr129	-----MIAFYNNHCGQLIIDSNFGIFKELYA---STWYRIPLK-----	311
AmelOr133	-----VIMFLCNHTAQILINNNEEFFHELYI---SVWYSVPLK-----	216
AmelOr134	-----VFIFLCNHTAQILINNSEEFFYELYI---SVWYFVPLK-----	312
AmelOr131	-----MIMFLCNYNGQILINSNEEFFHELYI---PVWYFVPLK-----	314
AmelOr132	-----MIMFLCNYNGQILIDNSEELFDELYF---SIWYFVPLK-----	314
AmelOr135	-----IIMFLCNHSGQLIDNSQKLFNELYI---SIWYFVPLK-----	312
AmelOr136	-----VITFLNNCNQILIDNSQELFIELYI---SMWYFVPLK-----	314
AmelOr138	-----IITFLCNYNQILIDNSQELLDELYI---SAWYFVPLK-----	220
AmelOr130	-----VIIFLNNYNGQIVMNSSQELFDELYN---SMWYFMPLK-----	314
AmelOr137	-----	
AmelOr139	-----MIMFICNYSSQILIDNSQELLYDLYI---SMWYFVPLK-----	236
BmorOr20	-----IQLSVIVESVGTVTGRLKDAVYE---VPWEYMDTSN-----	390
BmorOr3	-----IQLSVIVESVGTVTGRLKDAVYE---VPWEYMDTSN-----	390
BmorOr18	-----IQLSVIVESVGTVTGRLKDAVYE---VPWEYMDTSN-----	390
HvirOr6	-----IQLSVIFELVGTESEKLRKDAVYG---VPWDCMDTKN-----	380
BmorOr23	-----IQISVIFELLGYMSDKLQDAVYC---VPWEYMDTSH-----	367
BmorOr16	-----IQISVIFELLGYMSDKLQDAVYC---VPWEYMDTSH-----	367
BmorOr4	-----IQISVIFELLGYMSDKLQDAVYC---VPWEYMDTCH-----	366
BmorOr5	-----IQISVIFELLGYMNDKLQEAIVYC---VPWEYMDTSH-----	367
BmorOr22	-----IQVSMIFEILGFLSDKLPNAVYS---IPWEAMNVTN-----	374
BmorOr17	-----IQVSMIFEILGFLSDKLPNAVYS---IPWEAMNVTN-----	374
BmorOr1	-----IQISIFELLGVSADRIPDAVYQ---LPWECMDVKN-----	381
BmorOr1a	-----IQISIFELLGVSADRIPDAVYQ---LPWECMDVKN-----	381
BmorOr1b	-----IQISIFELLGVSADRIPDAVYQ---LPWECMDVKN-----	381
BmorOr19	-----IFLSIVLEEIRRQNYDLCEYVYA---LPWEGMSLEN-----	359
BmorOr15	-----IFLSIVLEEIRRQNYDLCEYVYA---LPWEGMSLEN-----	359
TcasOr5	-----NAVLNAEYETVLDVFWWT-----	263
TcasOr7	-----VMNEIICERFRSKAANKYR-----	278
HvirOr4	-----CVTHMLRMIIVVVEPGHYTIAEGKRTEGLVC---RLMTSAPSTG-----	342
BmorOr13	-----CLYHTFGLVMIIEPCHRTHEEMETTRELVS---RVMCSADPRD-----	389
DmelOr10a	-----QLLVYCYGGTLVAESSTGLCRAMFS---CPWQLFKPKQ-----	359
DmelOr33c	-----QLFPSCYFASEVAEELERLPAIFIS---SRWYDQSRDHR-----	333
DmelOr7a	-----TAPCCYQATSLMLDNERLALAIQ---CQWLGQSAR-----	355
DmelOr22c	-----LFLYCFGGNHVSESSAAVADVLYD---MEWYKCDART-----	355
AgamOr1	-----QVFIFCYVGNIEISYTTDKFTEFVGF---SNYFKFDKRT-----	365
AgamOr4	-----TFLYCLLGTRLATQQQLLEHALYA---TRWYNYPIAF-----	343
DmelOr47b	-----IQLSLWCVSGTLVYTSVEVAQAAFDI---NDWHTKSPG-----	363
AmelOr73	-----QVYLXWFGNEVTLKSNKVSDAIYE---MDWTILPSN-----	314
AgamOr68	-----FVLGAIIERKVDDLHISLMH---FPWYLMDDRR-----	341
DmelOr59a	-----QIFPSCFFGTDNEYWFGRHLHYAASF---CNWHTQNRS-----	329
DmelOr23a	-----QTYPLCYGTMVQESFAELHYAVFC---SNWVDQSASY-----	327
AgamOr31	-----VTYYCYYSQLYYESTQVHDVAVFK---SKWYDASVAT-----	324
DmelOr2a	-----LEVFCVYFGDRMRTQSEALCDFAYD---CNWIEQLPKF-----	349
AmelOr62	-----LIQLYLYAYAGDALESRTTEIAQAAPH---SFWYQSRGR-----	349
AmelOr121	-----QTFLYFMAGQMLVTQSEVHNAAYE---CEWVSLKYTK-----	345
AmelOr140	-----HIFFLCLPGQRLLNHSEELHVSACE---VTWYIFPKKY-----	311
TcasOr12	-----EIYLWCFYGNVMLKSDQLTQAAYM---SEWLDGTEEF-----	341
AgamOr8	-----VFLLCYGNKLVIVASSQIPYSAFE---GNWIGASVSY-----	343
BmorOr9	-----LIMSVFGENLISESRIAEEAFL---CKWYEMDQKS-----	329
AgamOr40	-----ELYLYCFLGQTLKNQGLKVGDALWK---SPWHLCGASY-----	406
TcasOr63	-----QVATYCYGHEVMTTSDAIGMSLYL---SNWYASHVK-----	331
TcasOr4	-----WLPYNTKKYYPTVIFQVMSVSVSAYNN---SSIDVLTCLMLIT-----	333

TcasOr13	-----HVLRLLLIVEPCHGCILVAKTTTQLVCK---LLCLDLKKEVK-----	357
AgamOr24	-----SVQIFYICFLGTSLELKGVTNALTGKIGAIHWDKLSGRD-----	329
AgamOr54	-----VQLFFSFCALGETFNKISDELTVAIYN---VPWYNMEVRD-----	316
AgamOr23	-----CALGTFLLSSKNEKLVVEEIIYN---VNWYGLTTKH-----	333
AgamOr64	-----TLLFCCKSIDSVNDLHTEVGYIMYS---EYWPATLQYADQGLSTE	365
DmelOr82a	-----QLFIYCYGGEI IKAESLQVDTAVRL---SNWHLASPKT-----	337
AmelOr116	-----QIFIYCWHGNELYLHSMKICLSAYK---NNWNNNNKN-----	349
AmelOr160	-----ILLAFCYCFLGECLINESEVQMACYF---TNWYDLPEQY-----	342
TcasOr10	-----SFILSLDISNVIFYVDWLDDEVYKS-----	297
TcasOr26	-----VGTTVYN---SEWCDDVDVDF-----	290
AmelOr117	-----QLLLWCWPGEILIQESQEIGHVYILN---IPWYNLPPIIY-----	351
AmelOr120	-----QLLLFCFPDILIRQSFNISIAAYS---MQWYQLPTFI-----	352
BmorOr7	-----ELFLYCYGNEVSTESDRLVTSIYS---MEWVGARLG-----	341
AgamOr6	-----ESRVEAFAFKTHQSLGVIDAAYG---CEWYREGSVA-----	353
DmelOr45a	-----LSSYCYGGEYIKQQSLAIAQAVYG---QINWPEMTPKK-----	330
DmelOr67d	-----LYTFCGLGTLVENSNEFLSVIYTN---CLWYELPVKE-----	342
DmelOr83c	-----AYSMSIYICLGTILEFAYDQVYESICN---VTWYELSGEQ-----	349
AmelOr162	-----DLLFVSWTGQQLSNSTERIFEYTTN---GKWYQSSISC-----	320
HvirOr3	-----AYVYCYLGNELIIQSQGIALAAYES---TWTSWPVDL-----	220
TcasOr20	-----LFVVCYYGQKILDESLAIAADAVYT---FLWYKKSIVIV-----	337
AgamOr11	-----LFLYWHANEIHACADRLSMSAYK---SDWYRYDRGT-----	375
DmelOr56a	-----ILWIYHWHATLIVECHDELDELAYFS---CGWYNFEMP-----	369
AgamOr28	-----QLFLFCWYAQQITEEARLVSDHIYN---IPWYLADPKL-----	370
AgamOr58	-----MLNFYGLCDLLKIQVHAIKFRLYS---SQWTDYLRPVSQ-PLYP	343
AgamOr59	-----FIFCQLVEKQLDMNRSIGDRLYG---TEWMLKLQYSRDFQR--	362
DmelOr1a	-----LCIYLFGAEQVRLAERFSRLLYEV---IPWQNLPPKH-----	339
DmelOr13a	-----QLYVLCENGDALIKQSTLTAQILYECQWEGSDRIEIQSFTP----	357
AmelOr161	-----ELFMFSFSGNGLIDESEGIGESAYN---SGWIGSRFCR-----	337
AmelOr141	-----LCNWPADLLLSKSIDISRATYS---MPWYGYSYN-----	380
AgamOr52	-----WYVCKLVEDLQATNKRIGWTLYNDKWSDWLQYGREQP-----A	330
AgamOr36	-----CYWCCQLVDRLEVNVTQIGILLYS---LDWPVELQYTKATASR-	352
AgamOr25	-----CFSGNLLLIESDSLSSCVYS---IDWHTMPVPE-----	313
AgamOr45	-----QLFVICMLGNVLYIIVSDRLKDSVYG---IRWYRCTVSQ-----	339
TcasOr3	-----LMYCWFGNRITEASLKISYALYES---DWFPTSLS-----	360
DmelOr88a	-----TFEICLRGTQLEKASEGLESSLRS---QEWYLGSRRY-----	354
AgamOr22	-----KIWLFYCYGELVSVKAGEVNTGVYAN---QWYRLWNRR-----	338
DmelOr49a	-----FYVVSHTGQMLIDLSTNLAKAAFES---KWYEGSLRY-----	346
DmelOr85f	-----VYLVCYYGQQLDLSGGEVAHAVYN---HDFHDASIAY-----	343
AmelOr119	-----QLFYICWLGNELGYASSTLDKNQWFS---GWCNERLTG-----	364
DmelOr63a	-----YQIVVYCYNGQRFATASEEIANAFYQ---VRWYGESRE-----	369
DmelOr67b	-----LEITLYNVSQAQKVESQSELLFHDWYN---CSWYNESRE-----	370
BmorOr21	-----CRYAANLKCMAAETPTLIYC---CGWESVSDLR-----	343
BmorOr11	-----HFVMPCYYSNLLMERSENFRFAIYS---CGWENHHDKN-----	348
BmorOr12	-----LMAFFMWTAGDINQASQLPDAIYG---SGWYNCRGKSS-----	353
AgamOr33	-----QVFVWSFFGNRVTNMSTGISDATIS---CNWIVLADG-----	323
HvirOr1	EAAAYFLFSLVYLLSRSAVSLIASQVNSASSVPAPVLYDVPSPVYCVQVFLDQVNGD	399
HvirOr5	-----RVISVLAASSVNTHSKLALNHLYN---YETHCYN-----	281
TcasOr1	-----RICTLHHHLSKLVTRFNEIFGLGLLLMMFGVSFLITQT-----	305
TcasOr2	-----TYGIDTVAVCDACYS-----	305
TcasOr16	----KTFVQIVCQQCQKAMISGAK----FFTISLDFASVLGAVVTYFMVLVQLK---	475
AmelOr2	----KTFVQIVCQQCQKAMISGAK----FFTISLDFASVLGAMVTYFMVLVQLK---	478
AgamOr7	----KTFVQIVCQQCQKAMTISGAK----FFTISLDFASVLGAVVTYFMVLVQLK---	478
AaegOr7	----KTFVQIVCQQCQKAMTISGAK----FFTISLDFASVLGAVVTYFMVLVQLK---	462
DmelOr83b	----KTFVQIVCQQCQKAMISGAK----FFTISLDFASVLGAVVTYFMVLVQLK---	486
BmorOr2	----KTFVQIVCQQCQKAMTISGAK----FFNVSLDLFASVLGAVVTYFMVLIQLK---	472
BmorOr2a	----KTFVQIVCQQCQKAMTISGAK----FFNVSLDLFASVLGAVVTYFMVLIQLK---	472
HvirOr2	----KTFVQIVCQQCQKAMISGAK----FFTISLDFASVLGAVVTYFMVLVQLK---	472
AgamOr56	----QKDMCFLMMRANKPVKLTAAK----LFVVTRDSFTQVIKQAYTIFFTLMSQFLDNP	398
AgamOr57	----QKDMCFLMMRANKPVKLTAAK----LFVVTRDSFTQVIKQAYTIFALMSQVLDDT	398
AgamOr26	----QKDLFSVLMRAKPVRLTAAK----LFVVTRDSFTQVMKQAYTIFALMSQFLDDI	398
AgamOr27	----QKDMCFLMMRANKPVKLTAAK----LFVVTRDSFTQVIKQAYTIFFTLMSQFLDNP	398
HvirOr9	----RKGFIVIIIRAQKPCELTANG----FFKINLSAFTSILSTSWSYFALLKTMHYHPE	401
HvirOr7	----GKQILFVQTRAQEPCKLTAAK----FADVNLNFMVRLSSAWSYFALLQTVYGGK	385
DmelOr85b	----KRALVII IARSQKVTFLKATI----FLDITRSTMTDLLQISYKFFALLRMTMYTQ-	390
DmelOr85c	----RRALVFFIARPQRTTYLKATI----FMNITRATMTDLLQVSYKFFALLRMTMYIK-	389
DmelOr85d	----RKMLLIIKRAQQPSRLKATM----FLNISLVTVDLLQVSYKFFALLRMTMYVN-	412
DmelOr67a	----KKILIFISMRSQKPVCLKATV----VLDLSMPTMSIFLGMSYKFFCAVRMTMYQ--	407
DmelOr67c	----CTMLKLLIMRSQKPAISIRPPT----FPPISLVTYMKVISMSYQFFALLRMTYSNN	404

Dme1Or92a -----KRILQFIIARSQKPASIRPPT----FPPISFNTFMKVISMSYQFFALLRRTTYG- 408
Dme1Or69a -----RRMLLILMMRATKPYMWKTYK----LAPVSIITTYMATLKFYSYQMFCTVRSK--- 393
Dme1Or69b -----RRMLLILMMRATKPYMWKTYK----LAPVSIITTYMATLKFYSYQMFCTVRSK--- 393
TcasOr11 -----KKQIARLLNGSQ--RFWDLGQ----FGARYGNSFGKTHKYLKSFLLYKVMLTFT 373
TcasOr11 -----KI IAMIRGQRA--AKLTLGG----FGDLDESFNLVVKNAFSFFTFVNAMNQK- 332
AgamOr41 -----KQIFRLLLLSSQQPQTLTLCAG----MTCISLNLFVNMSQKFYSIFMMLRNM---- 382
AgamOr42 -----QGMFKYVLKSAQPKQLTCGR----FAVINMNLFLAIHKKIYSFFMMLQNM---- 387
AgamOr43 -----KKDFLIMFHKCQHAKEMTVAS----MAPLNIVLFIAIMQKIYALAMMMRFSE-- 386
AgamOr44 -----KKDFLIMFHKSQHAMEMVAS----MAPLNIVLFIAIMQKIYAYAMMLMNFFE-- 386
AgamOr66 -----QKQFKFMLARSQLSAEIMIRS----VGPMMNETFTDIMQKMYSAFAMMYSFLVDL 392
AgamOr67 -----QKQFKFMLARSQLSAEIMIRS----VGPMMNETFTDIMQKMYSAFAMMYSFLVDL 392
AgamOr72 -----QKEFRFLMSRQQCPMILTAYG----FHPMNFAYMSVLKLVLYQFFVMIMQYIDRN 388
AgamOr73 -----QKEFRFLMSRQQCPMILTAYG----FHPMNFAYMSVLKLVLYQFFVMILQYIGRN 388
AgamOr71 -----QKEFRFLMSRQQYPMMLTAYG----FHPMNFAYMSVLKRLYQFFVMLMQYVG-- 386
AgamOr74 -----QKDFRFLMSRQQNPMLTAYG----FHPMNFAYMSVLKRLYQFFVMIMQYVG-- 386
AgamOr70 -----QKEFRFLMSRQQCPMMLTAYG----FHPMNFAYMSVLKRLYQFFVMVMQYVG-- 386
AgamOr69 -----QKEFAFLMCRQRPMLTAYG----FLTMNFESYMSVLKGLYQFFVMIMQYVE-- 390
TcasOr9 -----QRTFHVQMRASKIVNVKAGN----YFTMSASSYITFMKSLGIVYSALEGVN-- 294
TcasOr18 -----QKMLILVQMRVKRMVSTKAGN----FFTMIAPSFIAFQRAVFSYITLLKEVTDLG 408
Dme1Or83a -----RSDYMFMLNSRRQFQLTAGK----ISNLNVDRFRGTITTAFSFLTLLQKMDARE 453
Dme1Or85e -----RQDILIFLVNSRRRAHVHTAGK----FYVMDVNRRLRSVITQAFSFLTLLQKLAACK 462
TcasOr24 -----MSYSILTLIQ----- 343
TcasOr25 -----RKDLILILRAQKALFVSTGP----FNVLSFALFVSLKTSFIWPPKNEEMTPSRW 384
TcasOr19 -----RNKLILMIQRSQKPLFLATGA----FNIMSFALFVTV----- 331
TcasOr22 -----QKMLLLLLLVRSQKAFNLHATP----VGIMSFALFVALLKTSYSYFTLLHQST-- 382
TcasOr23 -----KKVLLLLLVRSQKAFNLQATP----IGIMSFDL----- 360
AmelOr168 -----QRVILMISLANELKCKISNFQ----NIDLTLPSFMSILNQAYSICLLFLKTKQD- 390
AmelOr170 -----QRVILMISLANELKCKISNFQ----NIDLTLPTFMSILNQAYSICLLFLKTKQD- 397
AmelOr169 -----QHIIILMITLANKLCKLSSFR----NIDLTLPSFMSILNQAYSICLLFLKTKQD- 403
Dme1Or65b -----VYRDLCVIIRRGDPLIMRASP----FPSFNILINYSAILNQCYGILTFLLKTLTD-- 385
Dme1Or65c -----VYRDLCLVIRRGQEPILIMRASP----FPSFNINYSAILNQCYGILTFLLKTLTD-- 385
Dme1Or65a -----IHRQFCFFIQRAQKPLIMKASP----FPPFNLENYMFILKQCYSLTILANTLE-- 417
TcasOr17 ----- 343
TcasOr21 ----- 343
TcasOr56 -----PKKTLLLLMMRAQRPCYFTAGK----FSLLSLQTFMTIVRGAGSYFMFLRQMNI-- 433
TcasOr15 ----- 340
AgamOr9 -----TRKLLIAFQQITARGIKCSAKYI-F-TIELSMQTFVTI IKTSYSYLAVLRSMTD-- 418
AgamOr65 -----CRKLLIAFQQITAVGIKCSAKYV-F-TIQLSMETFVTILKTSYSYLAVLRSMTD-- 421
BmorOr6 -----FKRNLCIAMECMAKSLTFRAG--S-YIPLSRAMFVSILRSSYSYFAFLNQANEQY 391
BmorOr10 -----FRKVLITMERMKRPIFKAG--H-YIPLSRPTFVAILRCSYSYFAVLRNRVNE- 387
AgamOr34 -----NRKSVQMFLVTRTNKPFVAAFG----YFNFNLPFAFTTILNMAYSVYCVLQRKAKNV 380
AgamOr37 -----ERKTLRMLLQRMNKPILTKAFY----FFNYNLQAFSTTILNMAYSYALLQRNALKK 392
Dme1Or94a -----IRKLLNAYMEHLKPKVTRAGN----FFAVGLPIFVKTIINAYSFLALLLNVSNN-- 387
Dme1Or94b -----TRKLLNCYMEFLKRPVKVRAGV----FFEIGLPIFVKTIINAYSFLALLLNISK-- 383
Dme1Or71a -----MRRLVLMFMVYLNRPVTLKAGG----FFHIGLPLFTKTMNQAYSLLALLLNMQ-- 378
Dme1Or46a -----SRRIALLFMQRLHSTLRIRTLN---PSLGFDLMLFSSIVNCSYSYFALLKRVNS-- 381
Dme1Or46b -----NRRIVLLMMQRFNSPMLLSTFN---PTFAFSLEAFGSIVNCSYSYFALLKRVNS-- 384
HvirOr8 -----FKSSMRFIFIERAHKPLSITGGK----MFCLSLVTFSTSIMNTAYSFFTLQNVKSRK 397
BmorOr8 -----FKRSIIFVERAKIPITITGLK----MFPLSLATFTSIMKTAYSFFTLIRNQALQ 394
AmelOr68 -----SKKDLINIMRRAMNPIELTCAY----FTIDLRTFVTILKMSYSTYFNLQRTKVN- 375
AmelOr69 -----TKRDLIMIMMRASYPIEMTSVH----VITMNLDSFVILKTSYSAYNLLQSNRE-- 369
AmelOr70 -----TKKIFLIIMTRATQPFEFTSGY----LVTNLNEFFVALIKASYSVFNLQRTK-- 370
AmelOr71 -----VQRAILLVMRRSMKPIEFTSIY----IVSVNLDSFMTLLKSSYSYFALLKRVNS-- 371
AmelOr72 -----AKKILLIIMARSLTPVEVSAH----IIPNLLESFKRLIKATYSAYNMLQQTG-- 370
Dme1Or19a -----FRLLLLMLARCQIPMILVSGV----IVPISMKTFTVMIKGAYTMLTLLNEIRKTS 385
Dme1Or19b -----FRLLLLMLARCQIPMILVSGV----IVPISMKTFTVMIKGAYTMLTLLNEIRKTS 385
Dme1Or33a -----YNRSLIILMQLTLVPVNIKAGG----IVGIDMSAFFATVRMAYSFYTLALSFRV-- 378
Dme1Or33b -----YSRILLIFMQLTLAEVQIKAGG----MIGIGMNAFFATVRLAYSFFTLAMSLR-- 379
Dme1Or22a -----YKSTLVYFLHNLQQPITLTAGG----VFPISMQTNLAMVKLAFSVVTVIKQFNLAE 394
Dme1Or22b -----YKSTLVYFLHNLQQPILLTAGG----VFPISMQTNLMVKLAFVTVIVIKQFNLAE 394
Dme1Or42b -----YKTLLYFLQNVQQPIVFIAGG----IFQISMSSNISVAKFAFSVITITKQMNIA 394
Dme1Or59b -----YKATLVLFMHVHQQPIIFIAGG----IFPISMNSNITVAKFAFSIITIVRQMNLA 395
Dme1Or59c -----YKSAVLYFLHRAQQPIQFTAGS----IFPISVQSNIAVAKFAFTIITIVNQMNLGE 398
Dme1Or98a -----YKSSLRVYFLKNAQKSIQFTAGS----IFPISVQSNIAVAKFAFSVITIVRQMNIA 392
Dme1Or42a -----YQKTLMYFLQKQQPITFMAMN----VFPISVGTNISVTKFSFSVFTLVKQMNISE 397
Dme1Or85a -----YRTTMLYFIHNVQQSILFTAGG----IFPICLNTNIKMAKFAFSVTVIVNEMDLAE 392
Dme1Or43b -----YQRTVIQFLQKQQPMTFTAMN----IFNINLATNINVAKFAFTVYAIASGMNLDQ 397
AgamOr2 -----IRKRLILIIARAQRPMVIVKGN---VYP-MTLEMFQKLLNVSSYSYFTLLRRVYN-- 378
AgamOr10 -----IKKLLMMTIRAQRPLEITVGN---VYP-MTLEMFQKLLNASYSYFTLLRRVYN-- 375
Dme1Or30a -----TQKTLKFLIMRSQKPLAILVGG---TYP-MNLKMLQSLNNAIYSFFTLLRRVYG-- 377

Dme1Or49b ----LRKNILFMMRAQRPAAILLGN---IRP-ITLELFQNLNLTYYTFFTVLKRVIY-- 375
Dme1Or43a ----FRKTLILIFLMQTHPMEIRVGN---VYP-MTLAMFQSLNNASYSYFTMLRGVTK- 376
AgamOr32 ----KLVYICLMRAQKPVIMKSGF---IEA--SLPTLKKILSSSASYITMLMSLEAD 379
AgamOr35 ----QKRLRLCIMRAQKPIVTKGGF---IKA--TLPTLKKILNSTGSIYITMLLSLEAQ 389
Dme1Or47a ASTSICRSLILISMRAHRGFRITGYF---FEA--NMEAFSSIVRTAMSYYITMLRSFS--- 385
Dme1Or98b --LQLVSSLKIAMMRSSLCGCPIDGYF---FEA--NRETITIVRTAISYVTLRLSLA--- 382
Dme1Or9a ----KRALLIAAMRAQRPCQMKGYF---FEA--SMATFSTIVRSVASYIMMLRSFNA-- 392
AgamOr38 ----RHLVQMMVRAKYGCNVDVPF---FRT--SMATFSVIVRSAMSYYITMLKSFL--- 407
AgamOr39 ----RHLIQMMMIRAQYGSNVDVPF---FET--SMASFSAIVRTASSYITMLKSFL--- 408
Dme1Or24a ----QKMTLLMVARAQRVLTIKIPF---FSP--SLETLSILRFTGSLIALAKSVI--- 387
Dme1Or45b ----RRRVFLIILRAQRPIVTRVPF---FAP--SLPVFTSVIKFTGSIVALAKTIL--- 396
AmelOr74 TGRMLRKDIRIIMMKSMPRCYLSRSG---FFP-MSLETSTA----- 382
AmelOr86 AGRMLREDVKVMIMKSMRPCHLSAGG---FFP-VSLETSTALMSSTLSYFTMLRESSKDK 400
AmelOr75 AGILVRKNLIIIVIMRSQKICCLTAGK---FFP-VSLETSTAVLSTAISYFTLLKQSSLEN 400
AmelOr84 VGRVVRKNLIIIVVARSHRVCCLTAGK---FFP-VSLETSTAVLSTAMSYYFTLLR----- 391
AmelOr87 IGRTLRRDLRMVIIIRSRKPCCLTASR---FFP-VSLETCTTVLSTAMSYYFTMLRQSFAN- 424
AmelOr76 YGKMIRKDLIVIMRSKSPCYLTALG---FFA-VSLETYTKVLSTAISYFTLLKRYEKEF 403
AmelOr85 YGKMIRKDLIVIMRSKSPCYLTALG---FFP-VSLETYISILSTAISYFTLLRNRAEQT 408
AmelOr88 YGKSLRKDLTFVIMRSRSPCCLTAGC---FFP-VSLETYTGILSVAVSWFTSLKKYEKKL 406
AmelOr91 SGRMMRKDLIIIVIMRASIPCCLSGKG---YFI-VSLETYTSVLSTAASYFTLLRNNIESD 407
AmelOr92 SGRMMRKDLIVVIMRASIPCCLSGKG---YFI-VSLETYTSVLSTAASYFTLLRNNIESE 404
AmelOr95 SGRMMKDLIVIMRSGTPCCLTGRG---FFV-VSLETYTNVLSTAASYFTLLKQHSEAH 403
AmelOr93 SRRMIRKDLIVIMRSNVPCLTGRG---FFI-VSLEMYX-VLSTAAX-FTLLKQRTEAT 379
AmelOr77 -----
AmelOr94 FGKMIKDLQFIVVRSRRACCLTGCG---FFD-ISLETYTKIMSTAMSYYFTILKQRIVEV 402
AmelOr96 FGKMLRQDLQIVVMSRRACCLTAGC---FFP-ISLETYTKIMSTTMSYFTLLKQRTVDT 402
AmelOr79 FGRMLRKDLIMVIKRSRRVCCLTANG---FFP-VSLETYTKILSTAVSYFTLLNRIENA 402
AmelOr83 FGRMLRNDLIMVIKRSRRVCCLTANG---FFP-VSLETYTKILSTAVSYFTLLNRRVENA 407
AmelOr80 FGKILRKDLIIIVIRRSRRVCCLTANG---FFP-VSLETYTKILSTALSYYFTLLSNRIENS 405
AmelOr81 FGKIFRKDLMIIVIRRSRRVCCLTANG---FFP-VSLETYTKILSTALSYYFTLLSNRIENA 402
AmelOr82 FGRMLRKDLIMVITRSRRVCCLTANG---FFP-VSLESYTKILSTALSYYFTLLSNRVETA 404
AmelOr78 FGRMLRKDLIMVIMRSRRVCCLTANR---FFP-ISLETYTKILSTAVSYFTLLSKHVDNS 404
AmelOr89 FGKMLRNDLIMVIKRSRRVCCLTANG---FFP-VSLETYTTILSTAVSYFTLLRNNEKA 401
AmelOr90 FGRMLRNDLIMVIERSRRVCCLTANG---FFP-VSLETYTTILSTAVSYFTLLRNNMEND 402
AmelOr142 ----TQRKILFIIILRSQKYESFGING---IVPALSLSYGYLYTSLSYFNALRIMVEDT 373
AmelOr146 ----LQKFVLFATIP-QTPVILKVR---IIPAFSLNYYCSFITNVLSMFTALRVLMYKD 372
AmelOr148 ----MQKDLLIILMY-QRPVILSINV---LPELTLRYCYSVVANAFSVFTALRAVVEDK 369
AmelOr158 ----MQKTLIMMAY-QKPVTFSINV---LPELTLRYCCSYVSNALSIFTALRAVVEVT 370
AmelOr147 ----MQKLVLTITLIY-QKPVITISINV---VLPTTYF-----ALLLF----- 351
AmelOr150 ----MQKDVLTVLMY-QQPIILSINC---ILPELTLHYCYC----- 353
AmelOr151 ----MQKDVLNIVLY-QQPIIFSVNC---ILPELSLRYCYCYLSNAFSIFTAIRVMIEDD 372
AmelOr152 ----MQKNLLNIVLY-QQPIILSINC---ILPELSLRYCYCYLSNAFSIFTAIRVVIENN 372
AmelOr154 ----MQKNFLNIVLY-QKPVIFISISC---IVPELSLRYCYCYLSNVFSIFTTLRVLLEDT 372
AmelOr155 ----MRKYLLNIVLY-QKPVIFISISC---IVPELTLRYCYC----- 353
AmelOr157 ----LQKALLTVLAF-QKPIAVSINV---LPELTIIRYCYSVSNALSIFAALRTVVE-- 367
AmelOr156 ----MQQNILIMLIF-QKPIISLSINF---LMPKLSLRSYCAVLSNAFSIFTALRVILKDN 372
AmelOr153 ----MQKNLLKXLI-F-QRPVIXIYRLZ---LLSKLILRYCYCLYLSNVFSIFTALHVLLEDNI 348
AmelOr144 ----MKSCVIFMMIRSQKFLFIRMSS---LLPPLSLEYCSNFVTTVSSYFAMRMTMIES- 373
AmelOr145 ----MKSCVIFMMIRSQKFLFIRMSS---LLPPLSLEYCSNFVTTISSYFAMRMTMIES- 374
AmelOr143 ----MKSCVIFMMIRSQKFLFIRMSS---LLPPLSLEYCSNFITTVSSYFAMRMTMIES- 368
AmelOr1 ----VAKNIKTIIILRASRPSLSGAK---ILE-LSLQAFCDVCKTSAAYFNFLRAMTV-- 400
AmelOr3 ----IAKNIRIIILRASRPSLSGAK---MLD-LSLRVFCDFVKTSAAYLNFLRTMTV-- 403
AmelOr6 ----KARCLILIIIMSNIYPVKLTAAK---VVD-VSLTTFDVMKAAMGYLNMLREVI--- 394
AmelOr7 ----KARCLILIIIMSNIYPVKLTAAK---VVD-VSLTTFDVMKAAMGYLNMLREVT--- 394
AmelOr4 ----KARYLILMIIMSNIYPVKLTAAK---VVD-VSLTTFDVMKAAMGYLNMLREVI--- 396
AmelOr5 ----KARCLILMIIMSNIYPVKLTAAK---VVD-VSLTTFDVMKAAMGYLNMLREVI--- 396
AmelOr8 ----KARSLILLIIMSNIYPVKLTAGR---LVD-VSLVTFTSIKSAVGYMNIQQVTT--- 396
AmelOr9 ----KARSLILLIIMSNIYPVKLTAGR---IVD-VSLVTFTSIKSAVGYMNIQQVTT--- 396
AmelOr11 ----KARSLILLIILSHYPIKVTAGR---IMD-LSLVTFTSIKSAVGYMNIQQVTT--- 394
AmelOr12 ----KARSLILLIILSNYPIKVTAGR---IVD-VSLVTFTSIKNSVGYMNIQQVTT--- 396
AmelOr10 ----KSRSLILLIISNIYPVKVTAGK---IID-LSLVTFITIIKTAVSYMNIQQVTT--- 395
AmelOr14 ----EARNLILVIMSSYPVKLTAGK---VVD-ISLATFTDIKTTVGYLNMLQKVT--- 398
AmelOr15 ----EARNLILVIMSSYPVKLTAGK---VVD-ISLSTYTDIKATVGYLNMLRKVTT--- 399
AmelOr13 ----EARGLILVIMSSYPVKLTAGK---IVD-ISLITFTDIVKTSVGYLNMLRTVA--- 390
AmelOr16 ----NMRCLILIIAMSNIYPVKLKA---MME-MSLTTFDVMKMSMGYLNMLREVI--- 401
AmelOr17 ----NMRCLILIIAMSNIYPVKLKA---MME-MSLTTFDVMKMSMGYLNMLREVI--- 401
AmelOr18 ----KSLAIPLMISMSHSTTKITAGN---IIE-LSISSFGDVIKTSVAYLNMLRTFTT--- 411
AmelOr19 ----KSLAISLIIISIRSTTKITAGN---IIE-LSISSFGAIIKTSFAYLNMLRTFTT--- 411
AmelOr22 ----KKLCFVLIIAMSNSSIKLTAGN---MVE-LCLTTFSDIVKTAVAFNLVLRTLTI--- 412
AmelOr24 ----KKLCFVLIIAMSNSSIKLTAGN---MVE-LCLTTFSDIVKTAVAFNLVLRTLTI--- 403

AmelOr20 ----KKLFCILIIAMSNSSIKLTAGN---IVN-LSISTFTDVKTAVTYLNVLQKTT--- 407
AmelOr25 ----KKLCCILIIAMSNSSVKFTAGN---MVE-LSIYTFSDVVKTSVAFNLNMFRAALT--- 402
AmelOr29 ----KKLCCVLI IAMSNSSIKFTAGN---MVE-LSIYTFSDVVKTSVAFNLNMLRALT--- 403
AmelOr30 ----KKLCCVLI IAMSNSSIKFTAGN---MVE-LSIYTFSDVVKTSVAFNLNMLRALT--- 403
AmelOr21 ----KKLCCVLI IAMSNSSMKLTAGN---LIE-LSMSTFSDVVKTSVAFNLNLRTLT--- 403
AmelOr23 ----KKLCCVLI IAMSNSSKLTAGN---LIE-LSMSTFSDVIKTSVAFNLNLRTLT--- 403
AmelOr35 ----KALSLLIISAANSSTKLTAGK---LVE-LSLSSFCVSVLKSSLAYLSLLRSLT--- 413
AmelOr27 ----TILNLIILRSTVVVQITAGK---LFN-MSIYTFGDVLTAFAYLNLLRQMT--- 405
AmelOr28 ----TILDLTIIARSSVVVQITAGK---LIH-MSIQTFDVIKTFAYLNLLRQVT--- 405
AmelOr33 ----DILDLIQIILRSSMVIKITAGK---LVH-MSIYTFGNVMKTAFTYLNLLRQLT--- 407
AmelOr34 ----DILNLIQIILRSSMVIKITAGK---LVH-MSIYTFGNVMKTAFTYLNLLRQMT--- 407
AmelOr32 ----DILNLVQIILRSSMVIKITAGK---LVH-MSIYTFGNVMKTAFTYLNLLRQMT--- 407
AmelOr31 ----DILDLIISRSNAVIKITAGK---LTN-MSIYTFGNVMKTTFTYFNLLRHVT--- 406
AmelOr36 ----DILNLIIMITRSSVEYKMTAGK---IID-MSVITFGNIKTVFGYLNILRQVTML- 405
AmelOr37 ----DILNLIIMITRSSVEYKMTAGK---IID-MSVITFGNIKTVFGYLNILRQVTML- 406
AmelOr38 ----DILNLIIMITRSSVEYKMTAGK---IID-MSVITFGNIKTVFGYLNILRQVTML- 407
AmelOr39 ----DILNLIIMIVRSSVEYKMTAGK---IMD-MSVITFGNIKTVFGYLNILRQVTML- 407
AmelOr47 ----DILNLIIMITRSSVEYKMTAGK---IID-ISVITFGNIKTVFAYLNILRQVTIL- 406
AmelOr48 ----DIFNLIMIVRSSVEYKMTAGK---IID-ISVITFGNIVKTVFVYLNILRQVTIL- 406
AmelOr40 ----DILNLIIMITRSSVEYKMTAGK---IID-MSVITFGNIKTVFAYLNILRQVTIL- 406
AmelOr43 ----DILNLIIMIRSGMEYKMTAGK---IIN-MSVVTFGNIKTVFAYLNILRQVTIL- 407
AmelOr45 ----DILNLIIMITRCSMEYKMSAGK---MID-MSVITFGNIVKTVFAYLNILRQVTIL- 406
AmelOr41 ----DILNLIIMIRSSVEYKMTAGK---IID-MSVITFSNIKTVFAYLNILRQVTIL- 406
AmelOr42 ----DILNLIIMIRSSVEYKMTAGK---IID-MSVITFSNIKTVFAYLNILRQVTIL- 406
AmelOr44 ----DILNLIIMIRSGVEYKMTAGK---IVN-MSVITFGNIKTVFAYLNILRQVTIL- 406
AmelOr46 ----DIFNLMMIISRSSISVNMSAGK---LID-MSVLTFGNTVKSIVFVYLNMLRQVTMI- 405
AmelOr49 ----NILNLMIMITRSSMNIINMTAGK---MTN-MSVLTFGNIVKSIFAYLNILRQVTMI- 406
AmelOr50 ----DILNLIIMIRSSVEYKMTAGK---IIT-MSIYTFGNIVKTVFAYLNMLRQVTMM- 408
AmelOr26 ----TALGLVLIISRSSMVIKITAGK---LIQ-LSIATFAAVFKASFAYLNLMIRTIAM-- 410
AmelOr53 ----EAYDLILLISISQHPKLTAGK---IEE-LSLNTFSTVAKTSVVYLNLLRVTVDW- 412
AmelOr54 ----EAYDLILLISISQYPPKLTAGK---IEE-LSFNTFSSVAKTSVVYLNLLRVTVDW- 410
AmelOr52 ----KAHDLILLISISQYPPKLTAGK---IID-LSFNTFSSVVKTSVIYLNLLRVTVD-- 406
AmelOr51 ----KARDIILLLVISKYPPKLTAGK---IFI-LSMNTFSSVVLKSSVVYLNMLRVTITEL- 409
AmelOr55 ----TIQNLIILIMAMSNPAKLSVGR---IVD-LSLSTFGNVLKTTFVYLNFLQTAVMQ- 408
AmelOr57 ----TIQNLIILIMAMSNTPAKLSVGR---ILD-LSLSTFGNVLKTTFVYLNFLQTAVM- 407
AmelOr56 ----TIQNLIILIMAMSNTPAKLTVGR---IVD-LSLSTFGNVLKTTFVYLNFLQTAVMQ- 408
AmelOr58 ----TIQGLILMIAMSNPAKLSAAG---IAD-LSLSTFGSVLKTSAFAYLNLRVTIM-- 409
AmelOr59 ----TIRGLILMIAISSNPTKISAGG---IVD-LSLSTFGNVLKTSAFAYLNFRFTIM-- 410
AmelOr60 ----TIQGLILIIAISNSPTKISAGG---IVD-LSLFTFANILKTSFVYLNFIIRAAIM-- 410
AmelOr61 ----TIHDLILIIAMSNNPKISAGS---IVD-LSLYTFGGVLKTSLVYLSFLRFTIM-- 410
AmelOr63 ----VSHNTFIIIMRAQHPVLLTAGK---FFV-INMETYMSILRISMSYLSVLRVMVNS- 397
AmelOr64 ----VTQNIIFIIIMRAQHPVLLTAGK---FFV-VNMETYMSILKTSMSYLSVLRVMVNS- 393
AmelOr66 ----VSNITFIIIMRAQHPVLLTAGK---FFV-VNMETYMSILKTSMSYLSVLRVMVNS- 392
AmelOr65 ----VSKDIIFIIIMKAQRPVLLTAGK---IFV-VNMETYISILKTSMSYLSVLRVMVNS- 393
AmelOr67 ----VSKDIIFIIIMKQRPVLLTAGK---FFV-INMETYMSILKTSMSYLSVLRVMVNS- 393
AmelOr114 ----ITKMLIIVMCRAKSPLTVTAGR---FCS-FTLQLFSEVLKTSMRYSVLVYAVKDKI 373
AmelOr115 ----RAVLLMIVIRANVSFQITAGK---FSP-FSLEFFNAVLKTSAGYLSVLLAMKDRL 396
AmelOr118 ----DVRIMLMIILRSQKQLTLTAGK---FIC-LSLEAFANMLKASASYVSVLYARY--- 371
AmelOr164 ----EIRVLLLLIMRSQKPLTLTIGK---YMK-LSLETANMLKISASYASVLYALE--- 383
AmelOr163 ----DSRIVLLILIIQAQRKLILSAGN---FVT-LSVQTFASMQKVSASYISILMTIY--- 385
AmelOr165 -----
AmelOr166 ----ESRLLIPIILRAQRGFTTFGK---FAT-LSMESFTA----- 358
AmelOr167 ----NRGVMILLMVRSQRLTITAGK---FMD-LSMQGFAN----- 369
DmelOr35a ENLRLKLLINLAIEMNSKPFYVTLGK---YFR-VSLQAGLKILQASFSYFTFLTSMQRRQ 406
DmelOr74a ENVKLMKLVTLAIQLNSRPFITGLN---YFR-VSLTAVLKI IQGAFSYFTFLNSMR--- 404
AgamOr3 ----MRRKLRLLLQRSQKPLGVTAGK---FRFVNVAQFGKMLKMSYSFVVLKQF--- 408
AgamOr5 ----IQRKLRMVLQRAQKPVGISAGK---FCFVDIEQFGNMAKTSYSFYIVLKDQF--- 389
AgamOr13 ----IQKDLQLIIARAQRPVGITAGK---FCYMNMEQLGIIVKTTYSIYIILRDQF--- 388
AgamOr15 ----IQKDLQLILVRAQSPVGITAGK---FYYMNMEQFGIIVKTTYSFFVILRDQI--- 387
AgamOr17 ----VQKDLQVLIARAQKTVGITAGK---FCYMNMAQLGIIVKTTYSFFVILRDQI--- 387
AgamOr16 ----LRKDLQLIIMLRAQRSVGITAGK---FCFMNMEQFGEVVKTTYSFFVILRDQF--- 385
AgamOr55 ----IAKHLQLILLRAQKPIGITAGK---FCFINMEQFVAKLLKTTYSVFVILRDLL--- 388
AgamOr18 ----MRKHI SFMIMRSQRVGLTAAK---FCFVDMEQFGAMLNMSYSFFVILKDAF--- 395
AgamOr14 ----IQQGLRMVLRHTQSPVGIQAGK---FCFVDVELFQNMVNKSYSCFIVLKDAL--- 409
AgamOr51 ----IQQRLRMVLRHTQSPVGIQAGK---FCFVDMELFQKMNKSYSCFIVLKDAL--- 397
AgamOr12 ----IQKTVAMVIARGQARLRITAWG---IIPIDLELFAKVVKASYTVLLVVKDFI--- 398
AgamOr19 ----IQKTVAMVIARGQARLRITAWG---IIPIDLELFAKVVKASYTVLLVVKDFI--- 398
AgamOr20 ----IQKMISTIVARSQPLRITACG---FITVNVLELFAKVVKTTYSGFIVLKDFI--- 398
AgamOr21 ----VQKMVAMIIARSQPLQITACG---FIPINLELFTKVVKHSYTVLAVLKDLI--- 395
AgamOr50 ----VQKMVAMIIARGQAPLQIKACG---FIPINLELFAKVVKTSYSVLIIVLRDFV--- 397

AgamOr29 ----IQKQLLFMIRRSQKPIILSAGK----IFYANVLQFSEMVOQSYSFYLVLVKNVF--- 386
AgamOr53 ----IQRQILLMIRRSQTPLILRAGK----LFSANVVQFGDIVQKSYSFFLVLVKNVF--- 376
AgamOr30 ----IQKQIYFMIHRSQTRIELTAGK----LFPVNI AQFSEIVKKSYSYLLVKDIF--- 387
AgamOr46 ----LQKMVVP I IQSSQQRIGITAAK----FYYIDYNRYGQSLKTAYSFYLLKLDIF--- 387
AgamOr47 ----LQKMVVP I IQSSQQRIGITAAK----FYYIDYNRYGQSLKTAYSFYLLKLDIF--- 387
AgamOr48 ----IRKYFLRIILQAHRKATITAGK----FYNVNI VTF AQLIKTSYTYMIMKEMF--- 397
AgamOr49 ----LQKQFQQMIRHAYIPRGITVVGK----FHFVDMASFGQLLKAIFSYYLILKELF--- 404
AgamOr61 QYVTVRHTLMLVIGRSQKGFQCSYGG----LGSISMERFAQLMQKSYSLLTILLQFAK-- 419
AgamOr62 QYFSVRRTILLVILQSQSLRFSYGA----HGEISMHSFAELMQKSYSMLTFMLQFQN-- 416
AgamOr63 QYRHVRRLLLLTAQSDQTIQFSFAG----IGEISMNSFAQLLEKSYSMLTFLLQFAK-- 412
AgamOr60 AYRQMRASFLIIIRSQKPLSFSISA----AGTISMARFADLLNSSYSMLTMVFMQLKERI 415
AgamOr75 -GRTIKRPMMLMIMQANMTKDFSAGG----LTTVSAELFAKTCRMIYTMMMFMANMAT-- 411
AgamOr76 -GRTIKRPMMLMIMQANMTKDFSAGG----LTTVSAELFAKTCRMIYTMMMFMANMAT-- 411
AgamOr78 -GRTIKRPMMLMIMQANMTKDFSAGG----LTTVSAELFAKTCRMIYTMMMFMANMAT-- 412
AgamOr77 ----SKPFLITIRMAQVPLRFMCGR----MYQLSTELFTSVVQFIYSLIMMLLQFK--- 386
AgamOr79 ----SRPFLITIRMAQVPLRFMCGG----MYQLSTELFASVVQFIYSLIMMLLQFK--- 384
AmelOr99 ----IQKMLYMMQIRSKKLCALTAGG----LYDMNIENFGITFKTCMSYFTMIMSFK--- 404
AmelOr101 ----IQKMLYMMQIRSKKLCALTAGG----LYDMNIENFGITFKTCMSYFTMIMSFK--- 404
AmelOr102 ----IQKVLVIMQIRSKKCLTSLAGG----LYEMNIENFGITFKTCMSYFTMIMSFK--- 403
AmelOr103 ----IQKVLVIMQIRSKKCLTSLAGG----LYEMNIENFGITFKTCMSYFTMIMSFK--- 403
AmelOr104 ----IQKVLHMMQIRSKKPCSLTAGG----LYEMNMENFGITFKTCMSYFTMMLMSLKK-- 405
AmelOr98 ----IQKMFNIMLMRSKSKCALTVYG----LYELNMENFGITFKACISYFTMMLSLK--- 401
AmelOr100 ----VQKMFVVMQIRCKKPCSLTAGG----LYEMNMENFGTALKTCMSYITMILSLK--- 324
AmelOr97 ----VQKIFHIIQIKSSKPKCLTAGG----LLELNLENFGIALKTCMSYFTIFLSLQD-- 349
AmelOr105 ----VQKVLHIMQIRSNKPCILTAAG----LYEMKIESFGITIKTCMSYFMMFSLRE-- 405
AmelOr109 ----MQSLYVVLVRKCLSPKLTGGG----FVALNLDSFVQILKASFSYTVFRS----- 390
AmelOr110 ----TQSLYVVLVRKCLTFFPKLTGGG----LILNLNLSFVQILKASFSYTVFRS----- 389
AmelOr111 ----TQSLYVVLVRKCLSPKLTGGG----LVALNLDSFVQILKASFSYTVFRS----- 390
AmelOr108 ----TQSLYVVLVRKCLNPPKLTGGG----LIVNLNLSFVQILKLSFSYTVFRS----- 390
AmelOr107 ----TQSLYVVLVRKCLNPPKLTGGG----LIALNLDSFVQILKLSFSYTVFRS----- 391
AmelOr112 ----IRSLYVLSLRSCNPPKLTAGG----LIVNLNLSFVQILKASFSYTVFRS----- 388
AmelOr113 ----IQALYILALRRSLTPPRLTAGG----LIELNMQSFSEVIKLSISYTVLRST--- 389
AmelOr106 ----IQAMFVILRRNLNPPKLTAGG----LMQLNLNTFAQVVKTSVSYFTVLKSV--- 387
AmelOr122 ----AQKLLLFMILRSMGCEICLSG----LFTPSYAGLTSMMSSSFYSYCAVIYSIQ--- 363
AmelOr125 ----AQKLLLFMILRSMGCEICLSG----LFTPSYAGLTSMMSSSFYSYCAVIYSIQ--- 362
AmelOr123 ----AQKLLLFMILRSMGCEICLSG----LFTPSYAGLTSMMSSSFYSYCAVIYSIQ--- 360
AmelOr126 ----AQKLLLFMILRSMGCEICLSG----LFTPSYAGLTSMMSSSFYSYCAVIYSIQ--- 360
AmelOr127 ----AQKLLLFMILRSMGCEICLSG----LFTPSYAGLTSMMSSSFYSYCAVIYSIQ--- 360
AmelOr128 ----AQKLLLMMLRSTVGCCELHLSG----LFTPSYAGFTSMSSSFYSYCAVIYSIQ--- 360
AmelOr129 ----AQKLLLFMMFKSSVGCCELRLCG----LFTASYAGFTSMSSSFYSYCAVIYSIQ--- 360
AmelOr133 ----VQKILLLIMIRSSMACIFHICG----VFVPCFAGFTTMLSTSFYFTLMYSIQ--- 265
AmelOr134 ----IQKILLLIMIRSSMACIFHIFG----VFVPCFAGFTTMLSTSFYFTLMYSIQ--- 361
AmelOr131 ----VQKILLLIMIRSSMACIFHIFG----VFIPCYVGF TMLSTSFYFTLTIYSIQ--- 363
AmelOr132 ----VQKILLLIMIRSSMACIFHIFG----VFVPCYTGFTTMLSTSFYFTLTIYSIQ--- 363
AmelOr135 ----VQKILLLIMIRSSTRCMFHILD----IFTPCYAGFSKMLSTSFYFTLIYSMQ--- 361
AmelOr136 ----VQKILLLIMIRSSSTACMINILG----VFTPCYIGFSKMLSTSFYFTLMHSIQ--- 363
AmelOr138 ----VQKILLLIMIRSSSTCTPHILG----VFIPCYTGFSKMLSTSFYFTLTIYSIQ--- 269
AmelOr130 ----AQKILLLIMLQSTTKHAFNILG----LFTPCYAGFSTMLSSSFYSYFTLMYSIQ--- 363
AmelOr137 -----
AmelOr139 ----VZKILLLIMI QSSITYMISILG----VFILCHIGFSTMLNTSFYFTLIXSTQ--- 285
BmorOr20 ----RKTVAIFLMNVQEPHLVNALG----LAKVGVQSM AAILKTSFYSYFTFLRTVSE-- 439
BmorOr3 ----RKTVAIFLMNVQEPHLVNALG----LAKVGVQSM AAILKTSFYSYFTFLRTVSE-- 439
BmorOr18 ----RKTVAIFLMNVQEPHLVNALG----LAKVGVQSM AAILKTSFYSYFTFLRTVSE-- 439
HvirOr6 ----RKVVMFFLMNVQEPVHVKAMG----LANVGVTTMASILKTSLSYFTFLLSQTKEE 431
BmorOr23 ----RKMVYMMFRQSQIPLQLKAMN----MLSIGVKTMVSI LKTSVTTYLLILKTVTTD- 417
BmorOr16 ----RKMVYMMFRQSQIPLQLKAMN----MLSIGVKTMVSI LKTSVTTYLLILKTVTTD- 417
BmorOr4 ----RKMVYMMFRQSQIPLQLKAMN----MLSIGVKTMVSI LKTSVTTYLLILKTVTTDE 417
BmorOr5 ----RKMVYMMFRQSQIPLQLKAMN----MLSIGVKTMASILKTSVTTYLLMLKTITANE 418
BmorOr22 ----RKLQVLLQKSQKPIQFKAMN----MMSVGVQTMAS I IKTSISYFIMLRTIARD- 424
BmorOr17 ----RKLQVLLQKSQKPIQFKAMN----MMSVGVQTMAS I IKTSISYFIMLRTIARD- 424
BmorOr1 ----RRVYGFLLRRTQNPVRFKAMG----MLDVGVQTMAS I LKTSISYFVMLRTVAT-- 430
BmorOr1a ----RRVYGFLLRRTQNPVRFKAMG----MLDVGVQTMAS I LKTSISYFVMLRTVAT-- 430
BmorOr1b ----RRVYGFLLRRTQNPVRFKAMG----MLDVGVQTMAS I LKTSISYFVMLRTVAT-- 430
BmorOr19 ----QKIFVVFLQRTQPDLEFETVC----GMKAGVKPAFS I V KSMFSYVMMINSRF--- 407
BmorOr15 ----QKIFVVFLQRTQPDLEFETVC----GMKAGVKPAFS I V KSMFSYVMMINSRF--- 407
TcasOr5 ----FTVYVWLWIPMALGFIALTVWY-----FEDILHHVGLQLVIL----- 299
TcasOr7 ----CEAKLLLR-GKVNPLKFTICG-----FLPLDYCLAYTVS----- 311
HvirOr4 ----VLPSRLEIFSRQLMLQSVSYAP-MGMCTLHRPLIASVIGAVTTYLVILIQFQRYD 396
BmorOr13 ----PISIELEMFFRQLVNLKASYAP-LKVCTLTRSLVATILGSI TTYLIVIVQLEIKN 443
DmelOr10a ----RRLVQLLILRSQRPVSMVPPF----FSPSLATFAAILQTSGSI IALVKSFQ--- 406

DmelOr33c	----FDLLIFTQLTLGNRWIKAGG----	LIELNLNAFFATLKMAYSFLFAVVRAKGI-	384
DmelOr7a	----FRKMLLYYLHRAQQPITLTAMK----	LFPINLATYFSAKFSFSLYTLIKGMNLGE	407
DmelOr22c	----RKVILMILRRSQRAKTIVAFP----	FTPSPALRSILSTAGSYITLKLKTF---	402
AgamOr1	----SQAMLFFLQMTLKDVIHKVGS----	VLKVTNLNHTFLLQIMKLSYSYLAVLQSMSE	417
AgamOr4	----RSSIRMMLRQSQRHAIITVVGK----	FFRVNLEEFSTRIVNLSYSAYVVLKDVIKMD	394
DmelOr47b	----IQRDISFVILRAQKPLMYVAEP----	FLPFTLGTMYMLVLKNCYRLLALMQESM---	412
AmelOr73	----VMKDLLLVIAARSKKPKVITSGQ----	IFILSTESFMKIMKISYSSFNILKNSTMK-	365
AgamOr68	----QKEYKLLLLRAQQPSGMSIAG----	LTPVNYETYTQIMKMLYQLFALAMNFLK--	390
DmelOr59a	----FKRKMMLFVEQSLKSTAVAGG----	MMRIHLDTFSTLKGAYSFLTIIIRMRK--	379
DmelOr23a	----RGHMLILAERTKRMQLLLAGN----	LVP IHLSTYVACWKGAYSFFTLMDRDLGLG	378
AgamOr31	----QKMLINCMMRAKKPVNAKSGFTQASLPTLNAVWVQYILNSAGSYVALLMSLME--		377
DmelOr2a	----KRELLFTLARTQRPSLIYAGN----	YIALSLETFEQVMRFTYSVFTHLLLRK---	397
AmelOr62	----ARDLILICRGNSSYHVHTAGK----	FVFMNIFTFKEILKSSASYSVLKVMMDT-	399
AmelOr121	----AKSLIIMARSKKPLYLTAGK----	LPVMTLTFCNILKISLSYISFLLTIL---	393
AmelOr140	----ONLYKFLARSLIFSKLTAFK----	VTTLSMQTFLLAIQTAMSFTVLLSTT---	359
TcasOr12	----KQNLFLMTRTQFPKLYASG-----	GKVTQSYLLNLE-----	374
AgamOr8	----QRSLFVMLRSTTVQKLTALK----	FSIVSLASYSKILSTSFYSFTLLKAMYEPN	394
BmorOr9	----KKTILTIMIRSHKPKLTAYK----	FSVISYGSFSKIISTSWSYFTLLKMTYTPP	380
AgamOr40	----RRRLVILMNAQRPVRLTGLK----	LYELNLETYYTVLKAAFSYYTIIKKFR---	454
TcasOr63	----IRKIVMIFLEKTKKPTIVKAGN----	FITLSLATLTQILRSAYSFAVLQRLYKDS	383
TcasOr4	----VASAEFNLLKGALKTIDFHPKG-----	HNTKQLIEAKFENCVNHHKEIVK-----	378
TcasOr13	----KSLEFFMTYLAECQIRFTAYG----	FTKLHRGLLTTITGAVTTYLVILFQFN---	405
AgamOr24	----MKFMKVMLMMSQKPKMLMAAT----	LPLNITAFLLQIHKFIYSLIMMLNTKVG--	377
AgamOr54	----QKAMRLLLMASQNPGRLSYGF-----	TVMRAFFEIFRKTYSIAMMMSYNEEEE	366
AgamOr23	----QKTLQQILLTSQHPVVLSDGFS-----	PIDLFNFVEIYKKIYSYLMVLQKVS---	380
AgamOr64	TLRPLRRSILIVLQOTLRPLRFGYGVS----	GSLSMQRFGEFMQQIYSLIMFLAQLN---	418
DmelOr82a	----RTSLSLILQSQKEVLIRAGF-----	FVASLANFVGI CRTALS LITLKSIE---	384
AmelOr116	----FNYALLIIMIRTQIPLIIIVGK----	VMELSLQNFLLILRTSYSIFTLLKTFTT--	399
AmelOr160	----TRSLIFCIARAQKPLYLTAGK----	FYVFSLETFAVIVKASMAYSVLKSI---	390
TcasOr10	----KTARLVIMNKAQSPVKLTIGK----	FTGMDLRTFLLV-----	330
TcasOr26	----QKGVILITIRAQKPVRIYAGP----	FSYVSHLLILTVFQTSYSYINLLNASS---	338
AmelOr117	----QKYLYFMIVRSQQYCRITALT----	FQTLSECTLSNVFNSTSVSYFTLLRQMQQ--	400
AmelOr120	----KDEICMIILRSQRPSFITAGK----	LYIMHLENFTAILSTAFSYFMMLQSFNTEA	403
BmorOr7	----FQRGLLVLLERARRPVRPAAGL----	VIPLSLQTFLLKIIKSSYTFYAVLRQTK---	390
AgamOr6	----FHRSVLQI IHRSQQSVILTAWK----	IWPIQMSTFSQILQASWSYFTLLKTVYGN-	404
DmelOr45a	----RRLWQVMIMRAQRPAKIFGFM----	FVVDLPLLLWVIRTAGSFLAMLRTFER--	378
DmelOr67d	----EKLIIMMLAKAQKPVVLTAAAD----	MAPLSMNTALQLTKGIYSFMMMLNLYG--	391
DmelOr83c	----RKLFGFLLRESQYPHNIQILG----	VMSLSVRTALQIVKLIYSVSMMMNRA---	397
AmelOr162	----RKLLAIMLSKSIAPLRLTACK----	LYTLNLESFTTIAKTSVSYTMVLCSLQ---	368
HvirOr3	----QKDLLIVILAAQRPLKLSAGG----	MALLCIQTFSQLYNGYSIFAVLNDAVN--	269
TcasOr20	----QRYVLLILLRSQKPLTLRACG----	VKVMSLATFLGLVLSAYSFTLLKLKLP--	386
AgamOr11	----NRMLQIFILYSNRPLKMHAF-----	ISMSLDTFLLAILRASYSYFTILKQLPTNF	425
DmelOr56a	----LQKMLVFMMMHAQRPMKMRALL----	VDLNLRTFIDIGRGAYSFNNLRSSHLY-	419
AgamOr28	----QKDILTFMVKAQKPVVLTAAAD----	FYMVTLQTFQRISSTSYFTLLQTNINQY-	420
AgamOr58	RCRRIRSSILIVMTRAEHELRI SCGS----	VYDMSLTTCWAVLQFSYSVFTLLLSFFENE	399
AgamOr59	EYRSAALTIRLLIMRSQHRVRFCTCGS----	INPVSMKEKTEFLNLSYSIVMFLLSIN---	415
DmelOr1a	----RKLFLEPIERAQRETVLGAYF-----	FELGRPLLWVIFRTAGSFTTLMNALYAKY	389
DmelOr13a	TTKRIRNQIWFMLCSQQPVRITAFK----	FSTLSLQSF TAILSTSI SYFTLLRSVYFDD	413
AmelOr161	----SVQIMMRSKIPSKITAAK----	FYSMSLESFSAVLSTSFYSFTVLTATKNE-	385
AmelOr141	----LQKITNILLMIRSQAQVRLTAGK----	FIGLSLETFAASMI STAASFYFTMVRSMN--	429
AgamOr52	ALREFRTTLLSILLATQRSLSLRGSD----	IVEVSWQTFASMLKTSYSVMMFLIELRRLN	386
AgamOr36	-YRQARSSLLIMMSKTQKSLGIRCGG----	MFEMSSEAFASLVKLTYTMLMFLRDTQKPN	407
AgamOr25	----QKLLMVMIAHAQKPVLRGIF-----	MPLIMSSFLSVIKASYSYFTLLH-----	357
AgamOr45	----QKRLMFLLANAQPEIVMGAVF-----	IPVTMTSFVTIIRAAYSFTTILY-----	383
TcasOr3	----FKKQIIFTMTRMQKPINVTIGK----	ITPLAFSTFLTIARGAYSFFTFKQRHGIN	412
DmelOr88a	----RKFYLLWTOYQCRTQQLGAF-----	LIQVNMVHFTEIMQLAYRFLTFKLSH---	401
AgamOr22	----DLHDILFMLRNAQRNYGFSIG-----	FGFLSFATFTAVMKTAYSNAFLHRVMN--	388
DmelOr49a	----KKEILILMAQAQRPLEISARG----	VIIISLDTFKILMTITRFFFAVIRQTVKE-	396
DmelOr85f	----KRYLLIIIRAQQPVELNAMG----	YLSISLDTFKQLMSVSYRVITMLMQMIQ--	392
AmelOr119	----IGQVFTLSTVFTRKSIILRASV----	FYVLSLETFAI IKRSYSFTLLNMDLTD	416
DmelOr63a	----FRHLIRMMMLRTNRGFRDLVSW----	FMQMSLPTLMAMVRTSGQYFLLQLQNVNQ-	420
DmelOr67b	----FKFMKMMMLFSRRTFVLSVGG----	FTSLSHKFLVQVFRLSANFFLLLRNMNKK-	421
BmorOr21	----IKRMMPFMVARSQVIVETAFF-----	MFAFDMELFVWIMKTSYSMFTLMRS----	390
BmorOr11	----IRQMMLFMLTRATEPLGIATVF-----	TNNSLDTFEAMCRQSYTIFNLMNAAWA--	397
BmorOr12	--ARIRSLVTISMNKAQQPILMWALG----	FVELSHKNFVAI IKSAYSVFSVY-----	401
AgamOr33	----LKKDLRF TTMRSQKPFVIDVYW----	LFPLTYETFAIILRSYSIFTLLRMTIE--	373
HvirOr1	KVALSGLQFFSVTRGLLLTVAGTIVTYELVMFQFNSSTPSLNITSPTSATHIITTLAT--		457
HvirOr5	----VEVERLQDQLTKDYIALSGMG----	FFYLNKTILLQAGAI VTYELVLIQFDDQG	332
TcasOr1	-----IFIICVIVQSEQIAWLHLLY----	IFLVGIMYAADVFIYICHVCCSTIHEVRE--	353
TcasOr2	-----	TIEEVISGI-----	314

TcasOr16	-----	
AmelOr2	-----	
AgamOr7	-----	
AaegOr7	-----	
DmelOr83b	-----	
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BmorOr2a	-----	
HvirOr2	-----	
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AgamOr57	MG-----	400
AgamOr26	AN-----	400
AgamOr27	VN-----	400
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TcasOr6	CLQFLAVKIIFKIPKPIAISFGETKGLEPLYDHLVVLHAMITLVTINLVNGFDGLFFYF	433
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AgamOr67	G-----	393
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TcasOr18	KD-----	410
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DmelOr85e	TESEL-----	467
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TcasOr25	FYIKLAVLLTVSVIILYVPVCIHIHKLFERDLDAEDFALMFSSYYGFLSTMIFYSKNHKK	444
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BmorOr6	HVLDQQKSAENKDSK-----	406
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AgamOr34	-----	
AgamOr37	V-----	393
DmelOr94a	-----	
DmelOr94b	-----	
DmelOr71a	-----	
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DmelOr46b	-----	
HvirOr8	-----	
BmorOr8	EE-----	396

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DmelOr22b	KFQ-----	397
DmelOr42b	KFKTD-----	399
DmelOr59b	QFQ-----	398
DmelOr59c	KFFSDRSNGDINP-----	411
DmelOr98a	RLTKN-----	397
DmelOr42a	KLAKSEMEE-----	406
DmelOr85a	KLRRE-----	397
DmelOr43b	KLSIKE-----	403
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DmelOr49b	-----	
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AgamOr32	NEKKT-----	384
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AmelOr76	KSDSS-----	408
AmelOr85	IMDA-----	412
AmelOr88	LQYACIANQSLKKEESKIIFYHQNI-----	432
AmelOr91	N-----	408
AmelOr92	IMKHD-----	409
AmelOr95	S-----	404
AmelOr93	S-----	380
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AmelOr94	ENT-----	405
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AmelOr79	NGL-----	405
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AmelOr90	KDD-----	405
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BmorOr4	A-----	418
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DmelOr13a	EKKLD-----	418
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HvirOr5	NDALNATKI-----	341
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Figure S1.