CLUSTAL 2.0.9 multiple sequence alignment

CSHUA   --
NP_839944   --
NP_115861   --
NP_570981   --
NP_057143   --
CSHUB   --
S66681   --
A57545   --
A41581   --
A54204   --
S64705   --
D38552   --
NP_624311   --
G2708309   --
A45981   --
U40763   --
A47328   --
XP_531396   --
XP_525294   --
XP_523512   --
XP_507866   --
XP_517783   --
XP_517773   --
XP_526904   --
XP_516556   ----------------------------KLLREKGNNKPWPWMPMLAALVAVTAIVLYVPG
XP_526001   MSYVFQEHSCSSEAHGFGYSCVSAQHKPTTEKTQTRSTTVLCHLVAKSEMALKAQKIENR
XP_516021   --
XP_515886   --
XP_525218   --
XP_507684   ---MQNGPKIVAVRNGN
XP_524688   --
XP_513346   --
XP_524598   --
XP_515004   --
XP_523437   --
XP_520485   ---MPIWDLVVSVHFLAVHAD-
XP_519076   --
XP_527705   --
XP_527529   -------------------QLGSPAPARRPEGTAGNRGRRRRDDAKGVAPRVTRGVD
XP_518678   ---HNKRGVLGMANKGR-
CSMSA   --
NP_598845   --
AAH58369   --
A56861   --
A40047   --
NKCR_MOUSE   --
AAH61645   --
BAC41068   --
BAC34686   --

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BAB30711     ------------------------------------------------------------
BAB25645     ------------------------------------------------------------
BAB23880     ------------------------------------------------------------
NF00527760   ------------------------------------------------------------
NF01138503   ------------------------------------------------------NEKPSKE
NF00510830   ------------------------------------------------------------
NF00510932   ------------------------------------------------------------
NF01595779   ------------------------------------------------------------
NF02014914   ------------------------------------------------------------
NF01930249   ------------------------------------------------------------
NF01929278   ------------------------------------------------------------
NF00523006   ------------------------------------------------------------
NF00508381   ------------------------------------------------------------
NF01215170   ------------------------------------------------------------
CSRTA        ------------------------------------------------------------
NP_783638    ------------------------------------------------------------
NF01612782   ------------------------------------------------------------
NF01612825   ------------------------------------------------------------
NF01607941   ------------------------------------------------------------
NF01607846   -----------------------------------------------------------M
NF01609144   ------------------------------------------------------------
NF01608897   ------------------------------------------------------------
NP_758443    ------------------------------------------------------------
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G2828710     ------------------------------------------------------------
B38388       ------------------------------------------------------------
AF132148     ------------------------------------------------------------
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NP_611695    ------------------------------------------------------------
NP_610590    ------------------------------------------------------------
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NP_523874    ------------------------------------------------------------
NP_523773    ------------------------------------------------------------
NP_610224    ------------------------------------------------------------
NP_733246    ------------------------------------------------------------
NP_611935    ------------------------------------------------------------
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EAA03948     ----------------------------------------------------------MK
EAA04625     ------------------------------------------------------------
EAA06299     ------------------------------------------------------------
EAA08127     ------------------------------------------------------------
EAA09839     ------------------------------------------------------------
EAA10133     --------------------------------------------MERDVFNEKPSKE
EAL39647     ------------------------------------------------------------
EAA13913     ------------------------------------------------------------
EAA13914     ---------------------------------------------------------LLA
EAA14200     ----------------------------------------------------------QP
EAA01474     ------------------------------------------------------------
XP_321072    ------------------------------------------------------------
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XP_320182         --------------------------------------MVQASTSKTDSEVCLFPTVPKNRRAFTPVYKSN
XP_319131         ----------------------------------------------------------------------
XP_311949         ----------------------------------------------------------------------
CAI11739          ----------------------------------------------------------------------
AAQ91263          ----------------------------------------------------------------------
NP_001004626      -------------------------------------------------------------MLQMKSR
NP_001002065      ----------------------------------------------------------------------
NP_957499         ----------------------------------------------------------------------
AAQ94596          ----------------------------------------------------------------------
NP_998184         ---------------------------------------------------------------------S
NP_001002146      ----------------------------------------------------------------------
AAQ91264          ----------------------------------------------------------------------
AAH59458          --------------------------------------------------------------------KH
AAH56814          ----------------------------------------------------------------------
AAH62863          -------------------------------------------------------------------VKH
NP_998629         ----------------------------------------------------------------------
NP_957285         -------------------------------------------------------------------ELY
NP_506749         ----------------------------------------------------------------------
NP_506561         ----------------------------------------------------------------------
NP_504522         ----------------------------------------------------------------------
NP_506751         ----------------------------------------------------------------------
NP_497745         ----------------------------------------------------------------------
NP_499828         ----------------------------------------------------------------------
NP_497257         ----------------------------------------------------------------------
NP_509506         ----------------------------------------------------------------------
NP_503034         ----------------------------------------------------------------------
NP_501118         ----------------------------------------------------------------------
NP_496562         ----------------------------------------------------------------------
NP_495855         ----------------------------------------------------------------------
NP_496337         ----------------------------------------------------------------------
NP_495417         ----------------------------------------------------------------------
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NP_492343         ----------------------------------------------------------------------
NP_493624         ----------------------------------------------------------------------
T06073            ----------------------------------------------------------------------
NP_175776         ----------------------------------------------------------------------
NP_567029         ----------------------------------------------------------------------
NP_201554         ----------------------------------------------------------------------
NP_200679         ----------------------------------------------------------------------
NP_181407         ----------------------------------------------------------------------
NP_191166         ----------------------------------------------------------------------
NP_171696         ----------------------------------------------------------------------
NP_195222         ----------------------------------------------------------------------
NP_195213         ----------------------------------------------------------------------
NP_196816         ----------------------------------------------------------------------
NP_188932         ----------------------------------------------------------------------
NP_191762         ----------------------------------------------------------------------
NP_190046         ----------------------------------------------------------------------
NP_180557         ----------------------------------------------------------------------
NP_181157         ----------------------------------------------------------------------
NP_179251         ----------------------------------------------------------------------
NP_179709         ----------------------------------------------------------------------
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P82869      ------------------------------------------------------------
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E313994     ------------------------------------------------------------
E1335804    ------------------------------------------------------------
E1331567    ------------------------------------------------------------
S62327      ------------------------------------------------------------
S62590      ------------------------------------------------------------
E1294518    ---------------------------------------------------------ENG
T39728      ------------------------------------------------------------
E1263915    ------------------------------------------------------------
CSBY        ------------------------------------------------------------
S30507      ------------------------------------------------------------
S12324      ------------------------------------------------------------
S57050      ------------------------------------------------------------
S48567      ------------------------------------------------------------
CSBYC3      ------------------------------------------------------------
S63359      ------------------------------------------------------------
S38324      ------------------------------------------------------------
TcCyP19     ------------------------------------------------------------
TcCyP20     ------------------------------------------------------------
TcCyP21.1   -----------------------------------------------MRYLLLSKVTQ
TcCyP21.3   ----------------------------------------------------------MF
TcCyP24.3   ----------------------------------------------GGSVHAAGAYTSP
TcCyP26     ---------------------------------------------------MVYLTR
TcCyP28     -------------------------------------------------------MRK
TcCyP30     ------------------------------------------------------VCVFLFF
TcCyP35.1   ------------------------------------------------------------
TcCyP35.3   ------------------------------------------------------------
TcCyP40     ------------------------------------------------------------
TcCyP110    -----------------------------------------------EHEIDGDLEE
AAT44353    ------------------------------------------------------------
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EAL37232    ------------------------------------------------------------
EAL37110    ------------------------------------------------MRFIFAFISLLLGLI
EAL36265    ------------------------------------------------------------
EAL35294    ------------------------------------------------------------
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J68269      ------------------------------------------------------------
AAQ15626    ------------------------------------------------------------
AAB07896    ------------------------------------------------------------
AAK14937    ------------------------------------------------------------
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J50388      ------------------------------------------------------------
L46884      ------------------------------------------------------------
M93420      ------------------------------------------------------------
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J50389        --------------------------------------------------------------
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CAB58298      --------------------------------------------------------------
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AAD46565      --------------------------------------------------------------
A53522        --------------------------------------------------------------
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NP_701512     --------------------------------------------------------------
NP_701389     --------------------------------------------------------------
NP_701030     --------------------------------------------------------------
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NF01065889    -----------------------------------------------------KNDVN
NF00926916    --------------------------------------------------------------
S52760        ----------------------------------------------MNKLVSIILVI
J10322        --------------------------------------------------------------
CAB39039      --------------------------------------------------------------
CAD51648      --------------------------------------------------------------
NF01497907    --------------------------------------------------------------
NF01497552    -----------------------------------------------------------S
NF01497379    ------------------------------------------MNKLIATVLFI
NF01497199    --------------------------------MKSNSKDSENKKVENLV-LDDN
NF01496968    --------------------------------------------------------------
NF01495390    --------------------------------------------------------------
NF01495324    -------------------------------------MFTLCKGYSDDEEEESNAINVV
NF01493974    --------------------------------------------------------------
NF01493918    --------------------------------------------------------------
E316521       --------------------------------------------------------------
CAC35733      --------------------------------------------------------------
J47812        --------------------------------------------------------------
J47813        --------------------------------------------------------------
G2624966      --------------------------------------------------------------
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E1319851      --------------------------------------------------------------
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AAB81959      --------------------------------------------------------------
AF023860      --------------------------------------------------------------
AAB81961      --------------------------------------------------------------
AAF22215      --------------------------------------------------------------
AF243140_1    --------------------------------------------------------------
AF252388      --------------------------------------------------------------
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CSHYAC        --------------------------------------------------------------
NF00071027    --------------------------------------------------------------
NF01951405    --------------------------------------------------------------
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NF01059378    ---------------------------------------------------------------------------
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NF00495096    ---------------------------------------------------------------------------
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CSPGA         ---------------------------------------------------------------------------
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NF00909389    ---------------------------------------------------------------------------
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NF01737225    ---------------------------------------------------------------------------
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AAH51602      ---------------------------------------------------------------------------
AAT69672      ---------------------------------------------------------------------------
AAH54186      ------------------------------------------------------------------------RVQ
AAH54168      ---------------------------------------------------------------------------
NF01208049    ---------------------------------------------------------------------------
NF01844632    ---------------------------------------------------------------------------
NF01844615    ---------------------------------------------------------------------------
NF01915773    ---------------------------------------------------------------------------
NF01915657    ---------------------------------------------------------------------------
NF01557564    ---------------------------------------------------------------------------
AAH41536      ---------------------------------------------------------------------------
AAH85963      ---------------------------------------------------------------------------
AAH64250      ---------------------------------------------------------------------------
AAH61335      ---------------------------------------------------------------------------
AAH59741      ---------------------------------------------------------------------------
AAH67931      ---------------------------------------------------------------------------
AAH44993      ---------------------------------------------------------------------------
A40516        ---------------------------------------------------------------------------
CYPB_BOVIN    ---------------------------------------------------------------------------
AAR19276      ---------------------------------------------------------------------------
A46579        ---------------------------------------------------------------------------
AAV40687      ---------------------------------------------------------------------------
NF01637248    ---------------------------------------------------------------------------
CYPR_BOVIN    ---------------------------------------------------------------------------
CYPR_CALVI    ---------------------------------------------------------------------------
E1317906      ---------------------------------------------------------------------------
AAB87888      ---------------------------------------------------------------------------
AAB87889      ---------------------------------------------------------------------------
Q9XZZ5        ---------------------------------------------------------------------------
S63995        ---------------------------------------------------------------------------
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J36797        ---------------------------------------------------------------------------
AF017738      ---------------------------------------------------------------------------
L37292        ---------------------------------------------------------------------------
AAS01736      ---------------------------------------------------------------------------
AAO61985      ---------------------------------------------------------------------------
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AAO63777      ---------------------------------------------------------------------------
B53522        ---------------------------------------------------------------------------
E280557       ---------------------------------------------------------------------------
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J70884        --------------------------------------------------------------------------------
J55771        ------------------------------------------------------ALCR------
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227879        --------------------------------------------------------------------------------
AAD48910      --------------------------------------------------------------------------------
AAO51811      --------------------------------------------------------------------------------
AAF76472      --------------------------------------------------------------------------------
AAP80861      --------------------------------------------------------------------------------
AAP73848      --------------------------------------------------------------------------------
BAB62329      --------------------------------------------------------------------------------
AAL75728      --------------------------------------------------------------------------------
S48017        --------------------------------------------------------------------------------
S48018        --------------------------------------------------------------------------------
BAD53622      --------------------------------------------------------------------------------
BAD53621      --------------------------------------------------------------------------------
BAD53620      --------------------------------------------------------------------------------
XP_507188     --------------------------------------------------------------------------------
XP_483750     -------------------------------------------------------------------------------E
XP_483749     --------------------------------------------------------------------------------
XP_482125     --------------------------------------------------------------------------------
XP_478742     --------------------------------------------------------------------------------
XP_478741     --------------------------------------------------------------------------------
NP_385690     --------------------------------------------------------------------------------
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NP_349373     --------------------------------------------------------------------------------
BAD45990      --------------------------------------------------------------------------------
BAD45991      --------------------------------------------------------------------------------
NP_908419     --------------------------------------------------------------------------------
NP_919903     --------------------------------------------------------------------------------
BAD35839      ----------------------------------------------------------------------------MEG
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CAG90469      ------------------------------------------------------------------MKLLTSLFAILSI
CAG88330      --------------------------------------------------------------------------------
CAG88054      --------------------------------------------------------------------------------
CAG86818      --------------------------------------------------------------------------------
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NF00686348    --------------------------------------------------------------------------------
NF00686217    --------------------------------------------------------------------------------
NF02138644    --------------------------------------------------------------------------------
NF00926921    ----------------------------------------------------------------MARIGRILTLVV
NF00909931    --------------------------------------------------------------------------------
NF00956595    --------------------------------------------------------------------------------
NF02035209    --------------------------------------------------------------------------------
NF01329591    ----------------------------------------------------------------------------MKKLF
CAG86678      --------------------------------------------------------------------------------
CAG86274      --------------------------------------------------------------------------------
CAG85447      --------------------------------------------------------------------------------
CAG85287      ------------------------------------------------------------------------------MFK
CAG84900      --------------------------------------------------------------------------------
CAG84822      --------------------------------------------------------------------------------
CAG84723      --------------------------------------------------------------------------------
CAG79895      --------------------------------------------------------------------------------
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CAG78939      ------------------------------------------------------------
CAG82238      ------------------------------------------------------------
CAG81980      ------------------------------------------------------------
CAG81971      ------------------------------------------------------------
CAG81844      ------------------------------------------------------------
CAG84141      ------------------------------------------------------------
CAG84091      ------------------------------------------------------------
CAG83821      ------------------------------------------------------------
CAG76968      -------------------------------------------------------MFKRT
CAG62671      ------------------------------------------------------------
CAG76052      ------------------------------------------------------------
CAG59915      ---------------------------------------------------------MLS
CAG58658      ------------------------------------------------------------
G3777556      ------------------------------------------------------------
AAF65770      ------------------------------------------------------------
BAA25755      ------------------------------------------------------------
CSTO          ------------------------------------------------------------
CSRP          ------------------------------------------------------------
CSZM          ------------------------------------------------------------
CYPH_ALLCE    ------------------------------------------------------------
AAG01536      ------------------------------------------------------------
AAB51386      ------------------------------------------------------------
G54833        ------------------------------------------------------------
K85185        ------------------------------------------------------------
Y08273        ------------------------------------------------------------
Y08320        ------------------------------------------------------------
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CAA10766      ------------------------------------------------------------
AAF69796      ------------------------------------------------------------
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NF01488902    ------------------------------------------------------------
NF00648058    ------------------------------------------------------------
NF01487278    ------------------------------------------------------------
NF01486260    ----------------------------------------------------------EKP
NF00904102    --------------------------------------------------MFSLRRLLLAAT
NF01484914    ------------------------------------------------------------
NF01484255    ------------------------------------------------------------
NF01483993    ------------------------------------------------------------
NF01533203    ------------------------------------------------------------
NF01483647    ------------------------------------------------------------
G71849        ------------------------------------------------------------
J17900        ------------------------------------------------------------
NF00873669    ------------------------------------------------------------
NF01527595    ------------------------------------------------------------
NF01539217    ------------------------------------------------------------
O1035365      ------------------------------------------------------------
YP_116397     ------------------------------------------------------------
YP_119877     ------------------------------------------------------------
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CAD25897   ----------------------------------------------------------------
CAD26352   ----------------------------------------------------------------
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G2959712   ----------------------------------------------------------------
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AJ006689   ----------------------------------------------------------------
AAF28343   ----------------------------------------------------------------
AAD50375   ----------------------------------------------------------------
AAK21908   ----------------------------------------------------------------
AAG13968   ----------------------------------------------------------------
BAB58884   ----------------------------------------------------------------
E1363908   ----------------------------------------------------------------
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G1764137   ----------------------------------------------------------------
Z32674     ----------------------------------------------------------------
UT0686     ----------------------------------------------------------------
CSCK       ----------------------------------------------------------------
NP_986490  ----------------------------------------------------------------
NP_985014  ---------------------------------------------------------MLA
NP_984799  ----------------------------------------------------------------
NP_984183  ----------------------------------------------------------------
NP_982586  ----------------------------------------------------------------
NP_982486  -----------------------------------------------------------M
AAT09096   ------------------------------------------------------MFSPL
YP_014938  ----------------------------------------------------------------
NP_951950  ----------------------------------------------------------------
NP_935388  ----------------------------------------------------------------
NP_907765  -----------------------------------------------------MRAST
BAC91249   ----------------------------------------------------------------
BAC90551   ----------------------------------------------------------------
BAC89441   ----------------------------------------------------------------
BAC88914   ----------------------------------------------------------------
AAV50868   ----------------------------------------------------------------
AAV82698   ----------------------------------------------------MTFLKYF
AAV81872   ----------------------------------------------------------------
NP_736022  ----------------------------------------------------------------
NP_734780  ----------------------------------------------------------------
YP_085398  ----------------------------------------------------------------
NP_643098  ----------------------------------------------------------------
NP_641352  ----------------------------------------------------------------
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YP_129479  ----------------------------------------------------------------
YP_129310  ----------------------------------------------------------------
YP_129032  ----------------------------------------------------------------
YP_101389  ----------------------------------------------------------------
YP_087816  ----------------------------------------------------------------
YP_087815  ----------------------------------------------------------------
YP_076496  ------------------------------MYNNRSPAGQQGGAGQGG
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AAT91260   ----------------------------------------------------------------
NP_868477  ------------------------------------------MTVRAFVLSLVGIAT
NP_867717  ----------------------------------------------------------------
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NP_867158     ------------------------------------------------------------------VAN
NP_865515     ---------------------------------------------------------------------
NP_992233     ---------------------------------------------------------------------
NP_991569     ------------------------------------------------------MSASHRKEPLMFKRT
NP_280624     ---------------------------------------------------------------------
BAC18575      ------------------------------------------------------------------TYE
BAC16839      ---------------------------------------------------------MFSFAPKHFLE
BAB82272      ---------------------------------------------------------------------
BAB99042      ---------------------------------------------------------------------
BAB97427      ----------------------------------------------------------MVGIS------
BAC08372      ---------------------------------------------------------------------
BAC07690      ---------------------------------------------------------------------
YP_072215     ---------------------------------------------------------------MFKRT
YP_069574     ---------------------------------------------------------------------
NP_778719     ---------------------------------------------------------------------
NP_245881     ---------------------------------------------------------------------
NP_245880     ---------------------------------------------------------------------
NP_354667     -------------------------------------------------------------MKLVRF
NP_354666     ---------------------------------------------------------------------
NP_298502     ---------------------------------------------------------------------
AAN39296      ---------------------------------------------------------------------
AAQ24380      ---------------------------------------------------------------------
ZP_00353225   ---------------------------------------------------------------------
ZP_00244808   ---------------------------------------------------------------------
ZP_00244807   -----------------------------------------------------------------MI
ZP_00358245   ---------------------------------------------------------------------
ZP_00350273   ---------------------------------------------------------------------
ZP_00129494   ---------------------------------------------------------------------
ZP_00130259   ---------------------------------------------------------------------
ZP_00136576   -----------------------------------------------------------MLKRL
NF01760157    ---------------------------------------------------------------------


CSHUA         ----------------MV--NPTVFFD--------IAVDG--------------EPL
NP_839944     ----------------MV--NSVVFFD--------ITVDG--------------KPL
NP_115861     ---------------------MSVTLH-----------------------TDV
NP_570981     ---------------------MSVTLH-----------------------TDV
NP_057143     ------------MAAIPPDSWQPPNVYLE----------------------TSM
CSHUB         ----------DEKKKGPKVTVKVYFD--------LRIG--------------DEDV
366681        ------EPIAK------KARSNPQVYMD--------IKIG--------------NKPA
A57545        LMKLQKGHVSLAAELSKET--NPVFFD--------VCADG--------------EPL
A41581        ---------DPSSSSSSG--NPLVYLD--------VDANG--------------KPL
A54204        -----------GFRKRGPSVTAKVFFD--------VRIG--------------DKDV
364705        -----------LRYQFVKKKG-YVRLH-----------------------TNK
D38552        EVMAATQA--EGPKR-----VSDSAIIH-----------------------TSM
NP_624311     --------------------MAVLLE-----------------------TTL
G2708309      -----------MAVANSSPVNPVVFFD--------VSIG--------------GQEV
A45981        -----------PQAKPSNPSNPRVFFD--------VDIG--------------GERV
J40763        --------------MGIKVQ-RPRCFFDIA-----INNQ--------------PA
A47328        -----------TSVAMGAQDRPQCHFDIE-----INRE--------------PV
XP_531396     -CSFSDAAAEENRVLLAMV--NPTVFFD--------IAVDG--------------QPL
XP_525294     --------------MPPP--LGALYYQ--------PWSTPLFFN-------ISDEGKPL
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KP_523512      --------------MPLP--PGAPYYQ--------PWSTP------------------
KP_507866      --------------SSSSG--NPLVYLD-------VDANG--------------KPL
KP_517783      -MGFADATAARSPVLSAMV--NPTMFFDTD------ISVDG--------------EPL
KP_517773      ----------------MV--KPIVFFD--------IAVDA--------------KPS
KP_526904      ----------------MV--NPTVFFH--------IPVDS--------------EPL
KP_516556      YTRFADAAATGSPILPAMV--SPTMVFD-------IAVNN--------------KPL
KP_526001      CFLNYTAAATRSPILPAMI--NPIVFN-------IIVNG--------------KPL
KP_516021      --------RKLLCVTSGPASALRSVTLH--------------------------TDV
KP_515886      ----------------MGIKVQ-RPRCFFDIA------INNQ--------------PA
KP_525218      ------------------M--PALIYRS-------FGDRQ--------------QVM
KP_507684      SRRFADAAAEENRVLLAMV--NPTVFFG-------IAVDG--------------EPL
KP_524688      -----------MAVANSSPVNPVVFFD-------VSIG--------------GQEV
KP_513346      -----------------------------------G-------------NKPA
KP_524598      -------ATAGSPVLSATV--NPTVFID--------DES--------------------L
KP_515004      --------------------------------------------------------
KP_523437      ------TSAVGNPVLSAMV--NPTVFFD--------IAANG--------------GPL
KP_520485      -------------APAIV--NPTVFFD--------IAVDG--------------GPL
KP_519076      --------------VLLAMV--NPTVFFD--------IAVDG--------------EPL
KP_527705      ----------------MV--NHTMFFD--------VAVDS--------------EPL
KP_527529      DADGLRLSPPPPRVCSGGGAGAMAVLLE-------------------------TTL
KP_518678      -------------HSNGSQFYITLQAT---------------------------PYL
CSMSA          ----------------MV--NPTVFFD--------ITADD--------------EPL
NP_598845      -----CSDGGARGANSSSG--NPLVYLD-------VGADG--------------QPL
AAH58369       -----------MAAIPPDTWQPPNVYLE-------------------------TSM
A56861         -----------NDKKKGPKVTVKVYFD-------LQIG--------------DESV
A40047         -----------GVRKRGPSVTDKVFFD-------VRIG--------------DKDV
NKCR_MOUSE     -----------ALAMGAQDRPQCHFDIE------INRE--------------PV
AAH61645       --------------------MSVTLH--------------------------TDV
BAC41068       --------------------------------------------------------
BAC34686       ---------------PSNSKNPRVFFD-------VDIG--------------GERV
BAB30711       -----------------MAVLLE------------------------------TTL
BAB25645       -----------MAVANSSPVNPVVFFD-------VSIG--------------GQEV
BAB23880       -----------MAVANSSPVNPVVFFD-------VSIG--------------GQEV
NF00527760     -------HTSLAAELSKDT--NPVVFFD-------VCADG--------------EPL
NF01138503     EVMAATQA--EGPKR-----VSDSAIVH-------------------------TSM
NF00510830     --------------------PQVYMD--------IKIG--------------NKPA
NF00510932     ----------MAAIPPDTWQPPNVYLE-------------------------TSM
NF01595779     ----------------MV--NPTMFFD--------IMADD--------------EPL
NF02014914     ----------------MV--NPTVFFD--------ITADD--------------EPL
NF01930249     --------------MILV--ARSENAN-------SAAATRLCRR--CVLPHHRRWQAL
NF01929278     ----------------MV--NPTVFFD--------ITADDD--------------EPL
NF00523006     ----------------MV--NPTVFFD--------ITANE--------------EPL
NF00508381     ----------------MV--NPTVFFD--------ITADD--------------EPL
NF01215170     --------------------MSVTLH--------------------------TDV
CSRTA          ----------------MV--NPTVFFD--------ITADG--------------EPL
NP_783638      --------------------MSVTLH--------------------------TDV
NF01612782     -------MSHPSPAAKPSNSKNPRVFFD-------VDIG--------------GERV
NF01612825     ------EPAAK------KARSNPQVYMD-------IKIG--------------NKPA
NF01607941     ---------PSPAAKPSNSKNPRVFFD-------VDIG--------------GEXV
NF01607846     ASPVEQPLRKGPHVIADTV--NPTVFFN-------ITADG--------------EPL
NF01609144     --------GSSGVRKRGPLVTDKVFFD-------VRIG--------------DKDV
NF01608897     -----------------MV--NLTMFFN-------ITADG--------------EPL
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NP_758443       ----------ARGANSSSQ--NPLVYLD--------VGADG----------------QPL
AAH61971        VVFLLLPGPSVANDKKKGPKVTVKYFD-------FQIG---------------DEPV
G2828710        --------------MGIKVQ-RPRCFFDIA------INNQ---------------PA
338388          ---------------MST-LPRVFFD--------MTADN---------------EPL
AF132148        --------------------MSVVIE--------------------------TTM
NP_611113       ------------------KG-YVRLN----------------------------TNL
NP_611695       -----------ADDSKGPKVTEKVFFD-------ITIG---------------GEPA
NP_610590       --------------MRQNSRLKSVTLH--------------------------TDV
NP_648697       -----------------MS--LPRVYFD--------IAAGG---------------EKL
NP_648508       ----------MSNIYIQEPPTSGKVLLK-------------------------TTV
NP_648338       -------MEERKLLRAVKS-TNPLVYLD-------ISIGK--------------EDA
NP_476656       ------ASGLSFTVTSRIYMDVKHNK-------------------------KPV
NP_523874       --------NNAGGIPDKAWQPHFVTLE-------------------------TSM
NP_523773       ------AVIEK----AE--KRNPQVFFD--------IRIG--------------GNDA
NP_610224       -----MPNWNQIQSQLRSSNNPVVFFD--------IAVG--------------TTEI
NP_733246       ----------MTVNKRDAGATRPRCFFDIS------LGGL----------------GM
NP_611935       ---------------------YENVVLH-------------------------TTK
EAA03569        --------DVIKVQRAVHDPKNPLVYLD--------VKVGE---------------ESV
EAA03948        LFVVLSVLIAGALASGEGPKVTDKVYFD-------ITIG---------------GKPE
EAA04625        ------MPTWTQMQGQLRNPNNPVVFMD--------ITVG--------------TAEI
EAA06299        -----------------MS--LPRCFFD--------MTVDN--------------QPL
EAA08127        ---------------------RCFFDVS------LGGL----------------PA
EAA09839        -------------RYERVKKKG-YVRLL------------------------TNF
EAA10133        DIISVTEG--QGVQK-----IYDNAVLH-------------------------TTM
EAL39647        --------------------MSVVIE-------------------------TTI
EAA13913        --------------------QSVTFH--------------------------TDV
EAA13914        IYASLPGDIEAATFTVTSQVYMDVSIDG-------------------------EKI
EAA14200        MDTGTDEVQPKEPKAAEEKKRNPQVFFD-------IRIG--------------NSDV
EAA01474        --------------LANYCISQLVEIN-------------------------GQPF
KP_321072       ---------VSLVPAAPASSGSSSIVIN-------------------------GQPF
KP_320182       NLVMLAIQTPNSGGIPDKLWQPHFVAFE------------------------TTM
KP_319131       -YASLPGDIEAATFTVTSQVYMDVSIDG-------------------------EKI
KP_311949       ----DSDAGGAAAEPPPPQQEKIRCFFDVS------LGGL----------------PA
CAI11739        -----MALAEEFYISNLRSTGHIFVYMD-------IENGG---------------EAV
AAQ91263        ----------------MA--NPKVFFD--------ITIDG--------------KEA
NP_001004626    LKYCSVSLAASRLLSGPGK--NPVVFMD-------IAADG---------------EFI
NP_001002065    -------MSNPTPEAKPGNAENPRVFFD-------VEIG--------------AERV
NP_957499       -----------MNVQPSNPNNPIVFFD-------VSIG--------------GQEV
AAQ94596        -----------MNVQPSNPNNPIVFFD-------VSIG--------------GQEV
NP_998184       VVFLLFPSETEADEKKKGPKVTAKVYFD-------IKIG---------------DEDA
NP_001002146    --------------------MAVTLH-------------------------TDL
AAQ91264        ----------------MA--RPKVFFD--------LTAGG--------------NPV
AAH59458        GSRALAQHPANGKESKAMA--RPKVFFD-------LTAGG--------------NPV
AAH56814        ----------------------------------------------------
AAH62863        GSRALAQHPANGKESKAMA--RPKVFFD-------LTAGG--------------SPV
NP_998629       --------------MGVKAQ-RPRCFFDIG------ISNV----------------PA
NP_957285       RDYKGDELLASTMKEPEAKKTDKFNAAH-------------------------YST
NP_506749       ----------------MS--RPRVFFD-------ITIAG--------------KPT
NP_506561       ----------------Q--RPKVFFD-------VSIGE--------------EPA
NP_504522       ------------------NKFQPNRWFDS----------------------IHYVTNT
NP_506751       ----------------MS--RSKVFFD-------ITIGG--------------KAS
NP_497745       ---------------MAAEKR--VFLDIS------VDEN-----------------LI
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NP_499828       ------------------------MP--RVKVFFD---------ITIGG-----------------KKG
NP_497257       ---------------RGPRVTDKVFFD-------MEIG-----------------GRPV
NP_509506       ------------------VRGNKRAFFDIS------INGE-----------------PA
NP_503034       ------------------STKLPRVYLG-------VKIG-----------------IRYI
NP_501118       ----------MPAPIND--QAPYVILD----------------------------TTM
NP_496562       ---------MSNQYINEPITTGKVTLE----------------------------TTA
NP_495855       ----------------LRHPDNPIVFLE-------VTAG-----------------GAPI
NP_496337       ------------RYSRVKKNA-FVRLV----------------------------TNF
NP_495417       --------------------MSVTLH----------------------------TTS
NP_493378       ----------EGGEK----VLNKEAIIH----------------------------TSF
NP_492343       -----------------MAVLIE----------------------------TTL
NP_493624       -----------DDAKGPKVTDKVYFD-------MEIG-----------------GKPI
T06073          ------------------MA--FPKVYFD---------MTIDG-----------------QPA
NP_175776       -------------------MSVLIV----------------------------TSL
NP_567029       ----------NQVGEDLEGVTHKVYFD-------IQIN-----------------GSPA
NP_201554       --------FELIKVEKNPKKG-YVQFQ----------------------------TTH
NP_200679       ------------------------HKVYFD---------VEID-----------------GKAA
NP_181407       ---------------RPPNPKNPVVFFD---------VSIG-----------------GIPA
NP_191166       -------------------MA--NPKVFFD---------ILIGK-----------------MKA
NP_171696       ---------------MVSRLSISVTLH----------------------------TNL
NP_195222       ----------KQVIEDHEITNRVFLD-------VDID-----------------GQRL
NP_195213       --------------MS--NPRVFFD---------MSLSG-----------------TPI
NP_196816       -----------------THKVYFD---------ISVGNPV-------------GKLA
NP_188932       ------------------MANPKVFFD---------LTVDG-----------------KPA
NP_191762       ---------------QAKVTNKVYFD-------VEIG-----------------GEVA
NP_190046       -----------ATTS-----LPENVIMH----------------------------TTL
NP_180557       ----------SIQAKEDLKEVTHKVYFD-------VEID-----------------GKSA
NP_181157       ----------MSARPEG--SPPEVTLE----------------------------TSM
NP_179251       ----------------MAT--NPKVYFD-------MTVGG-----------------KSA
NP_179709       ----------------MAS--HPKVFFD---------MTIGG-----------------APA
AAK02067        -----------------MGRSKCFMD---------ISIGG-----------------ELE
P82869          ---------------------------------------------------------------
T05352          ----------------MAKKKNPQVFMD-------VSIDG-----------------DPA
T49181          ---------------MTKKKNPNVFLD-------VSIGG-----------------DPV
T05314          ----------MSTVYVLEPPTKGKVIVN----------------------------TTH
CSZPA           -----------------MS-NCFFD-------VIANGQ-----------------PL
E313994         ------------------MANVELQ----------------------------TSL
E1335804        ------------NRGPKVTDTVYFD-------LQQG-------------DEFL
E1331567        -----------------MSTEPVVFMD---------IAIDGR-----------------LL
S62327          --------------MS------TYAYFK-------ISID-----------------GKIQ
S62590          ------AEEDYMLNHTRIKHKG-YARIV----------------------------TNH
E1294518        NILLG------------------KAAIIH----------------------------TTQ
T39728          ---------------------MSVLIE----------------------------TTV
E1263915        -------------------PLATGTVILK----------------------------TTR
CSBY            -------------------MS-QVYFD---------VEADGQ-----------------PI
S30507          ----------SRLFSNSASRLGKKVFFD-------PAVNGT-------------KI
S12324          ---------------DEVITQKVFFD-------IEHG-----------------EEKV
S57050          ----------------MIQDPLVYLDIS------IDK-----------------KPI
S48567          -------------MT-----RPKTFFD-------ISIG-----------------GKPQ
CSBYC3          ------------------HRGIITIEYFD--------PVSK-----------------SMKE
S63359          ---------------------NIGIVFTD--------PESS-----------------EEAG
S38324          ------------------DPEITHKVYFD-------INHG-----------------DKQI
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TcCyP19      -------MSYKPHHATVPT--NPKVFFD--------VSIGG----------------QSA
TcCyP20      --------------------MSVVIS-------------------------------TTR
TcCyP21.1    LLLLLLLMLSAAVSARADPVVTDKVYFD--------ITIG----------------DEPV
TcCyP21.3    SRTWFWAQRKLPFYPINPK--NPLVFFE--------ISIGA---------------QPA
TcCyP24.3    YPQNARNSVVYLDTAVQEGYTWFGSASM----------------------------KPI
TcCyP26      LVRRVHRGPIRNIFSYPLNEVNPVVFFE--------ITVEG---------------DAL
TcCyP28      INVPSKGERRRGIPVEVSR--NPKVFFD--------ISIDN---------------KPS
TcCyP30      LSFFFEGIKKMLHSSRHHLASAGRVFMDVA------IGS-----------------CSP
TcCyP35.1    -------PADYAHSYEKMAYASWKKFLQERGNRYCWMSVSIDN-------------VPC
TcCyP35.3    ----------------SMVQQRQDLLASTK-----GAGEP----------------EII
TcCyP40      ------------------MG-KLCWLQ--------ISIGGK---------------PAK
TcCyP110     QRVQHIITAATGRAMEWESSVIHVSLFV----------------------------DVF
AAT44353     ------------------MG--KPQVFFD--------ISIGG--------------QPA
EAL37431     -------------------MPNPVVYFD--------ISIGQ---------------TPA
EAL37232     ---------------------MSVRII--------------------------------TNY
EAL37110     VSVFAEKGVRPS-TVTPSVVVELTVSID----------------------------KEE
EAL36265     --------------------MSVLIE------------------------------TTL
EAL35294     -------MIKDPELRPQRHKDNPVVFLD--------ICLLDE-------------NNKI
J68268       -------MSYKPHHPTVPT--NPKVYFD--------ITIGG--------------TPA
J68269       -------MSYEPHHPIVPS--NPKVYFD--------ISIGG--------------QGA
AAQ15626     -----AAQRKIPFYPVNPS--NPLVYFD--------ISIGS--------------QKA
AAB07896     -------MSYRPHHATVPT--NPKVYFD--------VSIAG--------------QAA
AAK14937     -----FFDLFSQTLPEMSK-RPRVYFD--------LTVGG--------------AKA
CAC18541     --------PAPMVSERMNNPKNPVVFFD--------ISIG--------------GQDI
A45000       -------------------GVKCFFD--------ISIGG---------------KPA
Q9Y0F5       --------------------MSVRII------------------------------TNY
J47811       ----------------MS--RPKVFFD--------ITIDG--------------SNA
J50388       -------MRTK-----KQKRNLPRVFFD--------IRIG--------------NGDA
L46884       -------------------MAAKAFFD--------IKAGDE-------------RL
M93420       ----------K-----KQKRNLPRVFFD--------IRIG--------------NADR
J50389       --------------GNGPKVTEKVFFD--------IEVD--------------EQPL
G992633      -------------ANGPKVTDKVFFD--------IEVD--------------GKPL
E323073      -----EEMRTK-----KQKRNLPRVFFD--------IRIG--------------NGDA
S52758       ----------LSQASADPEVTAKVYFD--------VMID--------------SEPL
E1203753     -------MPYTPHYPVVES--NPKVWMD--------IDIGG--------------KPA
CAB58290     -------------------MGQVARVVQVQ-------------------------SSA
CAB58298     ------------------TT--NPKVFFD--------ISIDN--------------KAA
AAF69736     ------------------MPNTYCYLD--------IAIGGK-------------PKR
AAD46565     -----------------AAEPEVTAKVYFD--------VMID--------------SEPL
A53522       ----LAVSGAVAENAGVRKAYMDIDIDG----------------------------EHA
NP_702112    ---------MSEVYSIEPKTHGKVIIY----------------------------TSL
NP_701512    -----------------KSIRDYVFFD--------IAIEN--------------KYV
NP_701389    --MNIPNPRVFLDIAIGG----------------------------------RNA
NP_701030    ------------------MSLSIH-------------------------------TNY
NF01067443   ------------------MKKKKYVYLE--------FSIN--------------RITL
NF01067965   EEHNNNNIVPYYLSNLLTNPSNPVVFMD--------INLG--------------NHFL
NF01065889   SLISNPLKNIETIHKN----TPKSAIIY----------------------------TTM
NF00926916   ------------------SKRSKVFFD--------ISIDN--------------SNA
S52760       FFLFHKYALCAEEHEITHKTYFDITIDD----------------------------KPL
J10322       ---------YYLSNLLTNPSNPVVFMD--------INLG--------------NHFL
CAB39039     ------------------MSKRSKVFFD--------ISIDN--------------SNA
CAD51648     KEQKKSFEEKINYYKLKGNIERSHITIY----------------------------TNL
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NF01497907    ------------------MSRAKVFFD--------ISIDN---------------KNA
NF01497552    SLLST--KSIENIEKNNNTKTPKSAIIY----------------------------TTM
NF01497379    LALFQTY-INAETPEITHKAYFDISIND----------------------------KPI
NF01497199    DE---NTIIPYYLSNLLTNPSNPVVFMD--------INLG---------------NNFL
NF01496968    ------------------MGKKKKYVYLE--------FSIN---------------TIRL
NF01495390    ------------------KAIRDYFFD--------IAVEN---------------KYI
NF01495324    SEKTKSLEEKIAYYKMKGHTERGYITIY----------------------------TNL
NF01493974    ----------------------------------------------------------
NF01493918    ----------MSEVYSIEPKTCGKVIIY----------------------------TSL
E316521       -----------------------MANVFFD--------VQFGGD---------------AP
CAC35733      ---------------------MSIVLE----------------------------TSL
J47812        -------------------MT--RPRVFFD--------ITIGG---------------QQS
J47813        -------------------MS--RPKVYFD--------ITIDG---------------SNA
G2624966      ------------------MARPKVFFD--------ITIG---------------GEKA
E1317902      -----VLDADTVKYARVSKNG-YVRII----------------------------TNY
E1319851      ------ILDADTVKYARVNKNG-YVRIL----------------------------TNY
G3057040      ------ALDADTVKYARVNKNG-YVRIL----------------------------TNY
AAB81959      ------------------MV--NPTVFFD--------IAVDG---------------EPL
AF023860      ------------------MV--NPTVFFD--------IAVDG---------------EPL
AAB81961      ------------------MV--NPTVFFD--------IAVDG---------------EPL
AAF22215      ------------------MV--NPTVFFD--------IAVDG---------------EPL
AF243140_1    -------------------------D--------IAVDG---------------EPL
AF252388      -----------SSSSSSG--NLLVYLD--------VGADG---------------QPL
CSBOAB        -----------------V--NPTVFFD--------IAVDG---------------EPL
NF01922219    ----------------MAVELHSTVYMD--------LSIGG---------------MDA
NF01725587    ----------------MS--NPRVFFD--------VTANG---------------KPV
NF01897292    NILKAEEDAPQIRVTKIAHLDITVNGEP----------------------------QEQ
CSHYAC        ------------------MV--NPTVFFD--------ISADG---------------EPL
NF00071027    ------------------MV--NPTVFFD--------IAVDG---------------EPL
NF01951405    TTHEAAAIEDDVVRYQYVKKKG-YVRLH----------------------------TNK
NF01059378    -----------------V--NPTVFFD--------IAVDG---------------EPL
NF01105745    ----------------MP--NPQVFFD--------MTVGG---------------APA
NF00495096    ------------------MV--NPTVFFD--------ISADG---------------EPL
NF01053198    ---------------MAS--NPKVFFD--------MEVGG---------------QPV
CSPGA         -----------------V--NPTVFFD--------IAVDG---------------EPL
NF01950932    ---------------------MAVTLH----------------------------TDV
NF01951326    -------MSHPSPVERPGNPRNPRAFFD--------VDIG---------------GERV
NF00909389    ----------------MP--NPKVFFD--------MTIGG---------------QSA
NF01286555    ----------------MA--NPKVYFD--------MTIGG---------------APA
NF01737225    ---------------MAA--NPKVFFD--------MTVGG---------------SPA
NF01590839    --------MNNLKNIEALKEDGLYAAID----------------------------TDK
AAH51602      ---------HASAGIPHDTWQPPHVLVE----------------------------TSM
AAT69672      ----------------MA--LPRVFFD--------VAADG---------------CPL
AAH54186      EAAIYAPGKHCLLSFCTMA--LPRVFFD--------VAADG---------------CPL
AAH54168      --------SSVADDKKKGPKVTDKVYFD--------LKIG---------------DEEV
NF01208049    -THEAAAIAEDTVRYQYVKKKG-YVRLH----------------------------TNK
NF01844632    ---------------MGVKVQ-RTRCFFDIA------VNNV---------------PA
NF01844615    ----------MSNIYIQEPPSNGKVLLK----------------------------TTA
NF01915773    ----------MSGIPHDTWQPPHVLLE----------------------------TSM
NF01915657    -------------------MSVTLH----------------------------TDL
NF01557564    -------MSNPSPVAKPSNPSNPKVFLD--------VEIG---------------GERV
AAH41536      ------------------MA--LPRVFFD--------IAANE---------------CPM
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AAH85963     -------------MGIKVQ-RPRCFFDIA------INNQ----------------PA
AAH64250     -----------MAVPASNANNPIVFFD-------ISIG--------------GQEV
AAH61335     -------MSNPSPVAKPSNPSNPKVFLD-------VEIG--------------GERV
AAH59741     ----------------MA--LPRVFFD-------IAVDG-------------CPM
AAH67931     ------------------------CFFDIA------INNA----------------PA
AAH44993     -----------TVRYQYVKKKG-YVRLH-----------------------TNK
A40516       -----------DERKKGPKVTAKVFFD-------LRVG--------------EEDA
CYPB_BOVIN   -----------DEKKKGPKVTVKVYFD-------LRIG--------------DEDI
AAR19276     ---------------------SAITAG---------ADG--------------QAL
A46579       -----------PQAKPSNPSNPRVFFD-------VDIG--------------GERV
AAV40687     ------------MDD----RPIVFFD-------IAIG--------------GQLA
NF01637248   ------------------RPLANVYFD-------ITINNQ---------------PA
CYPR_BOVIN   --------DSLTAEFSKET--NPVFFD-------ICADD--------------EPL
CYPR_CALVI   -----------LSFTVTSKIYMDVKHQK-----------------------KPL
E1317906     -----VLDDDTVRYSRVKKNG-FVRLV-----------------------TNF
AAB87888     ------------------MST-LPRVFFD-------MTADG--------------EPL
AAB87889     ------------------MST-LPRVFFD-------MTADG--------------EPL
Q9XZZ5       ------------------MA--LPKVFFD-------ITIGG--------------NAT
S63995       ------------------MA--HPRVFFD-------MSADG--------------QPV
G1703696     ------------------MA--KPQVFFD-------LQANG--------------ENL
J36797       ------------------------------------------------------
AF017738     -------------------------MK-----------------------TTV
L37292       --------------MSKKDRRRVFLDVT------IDGN--------------LA
AAS01736     --------------------PNPFFD--------MTVGG--------------QPV
AAO61985     ----MGLFLGFELTSAKFYYKLPIVFYIINGSMWFIYSYSYIFYISN---------YSVS
CAC80550     ---------------MAA--NPKVFFD-------MTVGG--------------APA
AAO63777     ----------------MA--NPKVYFD-------MTIGG--------------APA
S53522       -----------YSSRLSTMPNPRVFFD-------ISIDK--------------KPA
E280557      --------ETNYDPVVTHKAFFDISIGS-----------------------KPI
J70827       --------------MSKKDRRRVFFDVT------IDGN--------------LA
J70884       --------------MSKKDRRRVFLDVT------IDGS--------------LA
J55771       ----KPKPVEPSHKVTHHVHLEVQTG-E-----------------------KAT
D1024669     ----------TEKKPKGPKVTDIVYFD-------ITIG--------------GKPA
Z27879       ----------------E--NPRVFFD-------ITIGG--------------VEA
AAD48910     -----------SEAGKDPKITNKVFFD-------IEID--------------NKPA
AAO51811     --------STSLAPNNTLNNENPIVFMD-------VAIVNQQN-----------PVHL
AAF76472     --------------------MSVTLH-------------------------TNL
AAP80861     ------------------VTHKVYFD-------IEID--------------GKPA
AAP73848     -----------VDWHLRPPNPKNPVVFFD-------VTIG--------------SIPA
BAB62329     ----------MWGSADG--GTPEVTLE-----------------------TSM
AAL75728     -----------MAPAASSKSNPRVFLD-------IAIGG--------------EWV
S48017       ----------------MS--NTRVFFD-------MTVGG--------------APA
S48018       ----------------MASKNPKVFFD-------ILIGK--------------ARA
BAD53622     ----------KKSKADLTEVTHKVYFD-------VEID--------------GKPA
BAD53621     ------LIHLAKKSKADLTEVTHKVYFD-------VEID--------------GKPA
BAD53620     --AATLSLAQAVESEAELTKVTTKVFFD-------ITIN--------------GKPA
XP_507188    ----------------RTLGAELATCPD-----------------------SEPL
XP_483750    ELLAVSDLGKTATTS-----LPDNLVMH-----------------------TSM
XP_483749    -----------------VGKEAAAEEE-----------------------EMI
XP_482125    --------------------IKDNPN-----------------------LED
XP_478742    -----------SVEKGDGSTFFPTAGGEP-----------------------KSV
XP_478741    -------VEFSVEKGDGSTFFPTAGGEP-----------------------KSV
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NP_385690       ------------------MAEIKDPENTIIMET----------------------------------TKG
NP_385689       AVAGALALAAFTGGALAQSGENILTVQL---------------------------------------EDG
NP_349373       ------------------MKNPIVTIEM---------------------------------------ENG
BAD45990        ---------------------MSVLIV----------------------------------------TSV
BAD45991        ---------------------MSVLIV----------------------------------------TSV
NP_908419       ------------LPVTAKAFLDVSIGG----------------------------------------EPA
NP_919903       ----------VSDKAFGDLLKLVKNILPG--------------------------------------GNKL
BAD35839        GGEGAESAAVASAAAAEVEVKNPRCFMD-------VSIGG---------------EIE
AAU87301        -------------------MP--NPKVFFD-------MQVGG--------------------------APA
CAG90469        AVLFFGKYINASKDLAENPPITHKVFFD-------VTEE---------------GKPI
CAG88330        --------------------MS-QVYFD-------ISADGN---------------KL
CAG88054        --------------------MSVLLE-----------------------------------------TTE
CAG86818        ----GKKQKPVAVNK------SSKIILH---------------------------------------TTL
NF01109982      -------------------MA--NPKVFFE-------VSANG--------------------------EPL
NF00686348      ------------------MTPENTLNLDL--------------------------------------STG
NF00686217      ------------------------------------------------------------------
NF02138644      -------------------MS--NPKVFFD-------IVIGK-------------------------MKA
NF00926921      FAAVGLFLFMGQTVEAKGPKITSKVYFD-------IEHD---------------GQPL
NF00909931      -------------------MP--NPKVFFD-------MTIGG--------------------------QPA
NF00956595      ----------------------QVYMD-------IKIG---------------NKPA
NF02035209      -------MDAAATSLPTNP--NPKVFFD-------MSIGG--------------APA
NF01329591      LATSLVLASG-------QLFANTIIDMK---------------------------------------TSM
CAG86678        --------------------MSVTFH-----------------------------------------TKT
CAG86274        ----LITHKVHIEITKLAKRKNKDGVKP---------------------------------------VVI
CAG85447        ------------MSSLEPATTAKVALI----------------------------------------TTK
CAG85287        PVN---FTRQTRLFSSSARNWGTKVFIT-------PSIGGV---------------KQ
CAG84900        --------------MSDKLN-RPKVFFD-------ISAD---------------GKPK
CAG84822        ------------------MKVELLRPCSYIDIS------IGG---------------SKT
CAG84723        --------------------MNPVVFLD-------VNKG---------------DVPL
CAG79895        -----LAFFVQPAQAEPDAEITHKVYFD-------IKQG---------------EESL
CAG78939        ------------------NCQG---------------------------------------------KR
CAG82238        --------------MTN-----PRVFFE-------VAIG---------------GKTI
CAG81980        --------------------MSNQVYFD-------VSADGQ---------------PL
CAG81971        -------MFRQIRHFSTSPLVRNNVYFN-------VSANGN---------------PL
CAG81844        --------------------MT-ITFLD-------VTYD---------------GQRI
CAG84141        ------------------MEPQTTAKVVLT-------------------------------------TTK
CAG84091        --------------------MSAFVYMDFA------VGG---------------EPV
CAG83821        --------------------MRAYLD-----------------------------VQSPA
CAG76968        LVAAAALISLTAFSPAFAASGTTHVLLT---------------------------------------TSA
CAG62671        ----------------------MKVYLDIA------IAG---------------EQI
CAG76052        ---------------------MITLH----------------------------------------TNH
CAG59915        RIS-----MQKRFLSSTVAKLGKKVYFE-------PSVNGS---------------RI
CAG58658        --------------------MS-KVYFD-------IEADGQ---------------PL
G3777556        --------------------MVKCFFD-------VSIA---------------GKPS
AAF65770        --------------------------------------GG---------------APV
BAA25755        -------------------MS--NPKVFFD-------MTVGG--------------------------QNA
CSTO            -------------------MA--NPKVFFD-------LTIGG--------------------------APA
CSRP            -------------------MV--NPKVFFD-------MTVGD--------------------------KAA
CSZM            -------------------MA--NPRVFFD-------MTVGG--------------------------APA
CYPH_ALLCE      ------------------------------------------------------------------
AAG01536        -------------------MA--NPKVFFD-------LTIGG--------------------------QPA
AAB51386        -------------------MA--NPRVFFD-------LTIGG--------------------------APA
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554833          -------------------MP--NPKVFFD--------MTIGG----------------QPA
K85185          -------------------MP--NPRVFFD--------MSVGG----------------QPA
Y08273          -------------------MS--LPKVFFD--------MSIGG----------------QPC
J08320          -------------------MS--NPKVFFD--------MTIGG----------------QPC
E1226445        -------------------MS--NPKVFFD--------MAIAG----------------NPA
L32095          --------------------VTSKIFFD--------IEIG------------------GESA
CAA10766        ----------VEWHQKLPNPKNPVVFFD--------VTIG-----------------TIPA
AAF69796        ---------------------MSQVYFD--------IAINNA-----------------PA
AAF69795        ---------------------MSDVYFD--------IAINSQ-----------------PA
CSNCM           ----------------TSSIMSKVFFD--------LEWEGPVLGPNNKPTSEIKA--QS
NF01287451      -------------------MSVLLE-------------------------------TSA
NF01527836      -------------------MSVTLH-------------------------------TTL
NF01488902      -------------------------------------------------------M
NF00648058      -----------MSSTDDVKQARSRVFFD--------ITIG----------------GKAA
NF01487278      --------------GPKITHKVYFD--------IEQG-------------------DKPL
NF01486260      TVLGGP----KKVEQKKAAETGTSAVIH---------------------------TTY
NF00904102      LFLGAMLLFAQSAEAAKGPKITHKVYFD--------IEQG---------------DKPL
NF01484914      --------------------MSVLLE-----------------------------TSA
NF01484255      -----------MAPTVLPASGNPLVFFD--------ITLG---------------GEPL
NF01483993      ---------MSAIYNLEPQPTASAIIH----------------------------TTQ
NF01533203      -----------------MA--NPRVYFD--------MSVGG--------------SPA
NF01483647      ----------LKPSHRIKNKG-YVRME---------------------------TNL
571849          ----------------SAIMGNKVFFD--------IEWEGPVMQG-GKPTSTVKE--QS
J17900          -------ATLVS---ASTNPKVTNKVYFD--------IKQG--------------DKDL
NF00873669      -------------------MS-NVFFD--------ITKNGA--------------PL
NF01527595      -------------------MS-NVFFD--------ITKNGS--------------PL
NF01539217      ---------------KSNMAIKTYFD--------VTWEGPVLDASGKPTSTVQE--QA
D1035365        --------LFMGQTVEAKGPKITSKVYFD--------IEHD--------------GQPL
YP_116397       --------------------MTKVNLE---------------------------TNF
YP_119877       ----------------TTGGDATVSVSVE-------------------------TNQ
CAD25897        -----EVLKALAMHGTPYLDVEYNVGGE------------------------KRS
CAD26352        -----------------MAKEASGNVYFD--------VYANEE------------SL
AAD17998        --------ALVNASEPRGPKITNKVYFD--------IQHG--------------DESL
G2959712        -------------------MP--NPIVFFD--------ITADG------------APV
CSNCC           -------------------MSKVFFD--------LEWEGPVLGPNNKPTSEIKA--QS
AJ006689        --------------FHQTPSAMSQVFFD--------VEYA--------PVGTAET--KV
AAF28343        ---------------------TVTLQ---------------------------TTV
AAD50375        ------------MTG--IIRNKVFFQ--------IKQG---------------NTPL
AAK21908        --------------------------------------------------
AAG13968        --------NTTRVRFYSSTMSKPNVFFD--------ISFNG--------------VT
BAB58884        --------------------MSKPNVFFD--------ISFNG--------------VT
E1363908        -------------------MS-NVFFD--------ITKNGA--------------PL
AAD16142        -----------------MSGNTKAFFD--------IQYA--------PVGSSAP--KT
G1764137        --------------------MANCYFD--------VSSNGK-------------PL
Z32674          --------------------MGNKVFFD--------IEWEGPVMQG-CKPTSTVKGSLVA
JT0686          --------------------GNKVFFD--------ITWEGPVFQN-GKPTSTVKE--QS
CSCK            -------------------MS-TVYFD--------VSADGQ--------------KL
NP_986490       -------------------MS-KVFFD--------VEADGQ--------------PL
NP_985014       NSSRSLLPSSRRLFSSSAASLGTKVFFD--------TSINGA--------------KA
NP_984799       ------------------MSGVTRVYIDIE------IGG----------------CKS
NP_984183       --------------MTE----RQKTYFD--------LSIG--------------GKPA
NP_982586       ---------------MSYFGVISAAQAKSVKMYPPNPPISQRVQML---LRYDGGEKQEE
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NP_982486    QVLFVLAQALLCAFALADPTVTHRVFFD--------LQHG----------------DEPL
AAT09096     FLLSLLAINQPGVAAKKLPKVTSKVFFD--------VEIG----------------GEKA
YP_014938    --------MTYPQLSKEVAPNEIEAEMI----------------------------TNR
NP_951950    ---------------MSEEQNPRVMLE-----------------------------TSQ
NP_935388    ---MLKVICASLVLTSSLALAGPKVEFE----------------------------TSL
NP_907765    PSLFKLFLGFMLLPAWLWSAESPVVVLE----------------------------TTS
BAC91249     --KITRAERFNLVQTGDPSGKGTGGFTD----------------------------PAT
BAC90551     ------------KTLPQLTSKAYVKLD-----------------------------TTK
BAC89441     ------------------TGKALVELT-----------------------------TTQ
BAC88914     ----------ARADLPSLAGKATVDLN-----------------------------TSK
AAV50868     ----------------NSGKNPRVYMD--------IVLN-----------------NEII
AAV82698     IGLTAAIFISVSHAEIQPDNPFPRVKII----------------------------TSM
AAV81872     -------------------MQVVLH-------------------------------TNH
NP_736022    ----------FPQLDKAVAKNEAQVLIK----------------------------TSK
NP_734780    ------ELTFPQVDIENTEGPV-AVIK-----------------------------TNH
YP_085398    -------------------MKTLGYILM----------------------------ENG
NP_643098    -----------EHVANIGTLAHERFWDG----------------------LSIYRSQ
NP_641352    ------------------MSLIATFD------------------------------TSR
BAB76758     --------------------------------------------------------
YP_129479    --------MRILIRLNLYQHSAASMIIFT---------------------------TNF
YP_129310    ---------------------MVTLH------------------------------TTF
YP_129032    ---MHRYLLAFCLLLALPVTAATQVLVT----------------------------TNL
YP_101389    -------------------EKETVLK------------------------------IETSM
YP_087816    -MKKFKFLTALFALFFVFNANAKNVTLH---------------------------TNY
YP_087815    ---------MRNQIPIHFYKENTMVTLH---------------------------TNF
YP_076496    ADQAGHKQWDKPPEMIIDPAKRYTATME---------------------------TSL
AAT91289     --------------------------------------------------------
AAT91260     --------------------------------------------------------
NP_868477    FGLTAGPASSTSAADPAKGEVTHKVYFD--------VSIG---------------SEPA
NP_867717    --------------------MKVATFD-----------------------------TDR
NP_867158    PNLVEATVLSGNRSLRLD--------M----------------------------DGF
NP_865515    ----------------IDRDALPQVLFK----------------------------TTR
NP_992233    ----------------------MVTFH-----------------------------TNH
NP_991569    LVTFIALCSLSAVAPAALAAGEPHVLLT---------------------------TSA
NP_280624    ----------MRRADCRNTMPVDATVH-----------------------------TSE
BAC18575     EAGEASREVSTPETEDVPATGTVTVNLS----------------------------TNQ
BAC16839     PQTSETCGRLVGVIVVSMLKTATAILH----------------------------TNR
BAB82272     -----------------MNPIVTIEM------------------------------ATG
BAB99042     ----------------MPATGTVTVNLT---------------------------TAQ
BAB97427     --------LDVVMMGVMTSKTATAILH----------------------------TNR
BAC08372     ------YTPPKGYEHLPRLLGRATVEME---------------------------TTK
BAC07690     --------------------ATVVLT-----------------------------VND
YP_072215    LVTFIALCSLSAVAPAALAAGEPHVLLT---------------------------TSA
YP_069574    ----------------------MVTFH-----------------------------TNH
NP_778719    ------------------MHLIAHLD------------------------------TVR
NP_245881    ----------------------MITLH-----------------------------TNL
NP_245880    ---MLRIITALLLAGVVCVAQAKNVVLH---------------------------TNY
NP_354667    AFAGALFAGALAASTFASAAE-LLTVQL---------------------------KDG
NP_354666    -------------MTEIKDPENTIIMET----------------------------TTG
NP_298502    ------------------MHLIAHLD------------------------------TVR
AAN39296     -----------------MA--NPKVFFE--------VSANG--------------EPL
AAQ24380     -----------------MA--LPRVFFD--------ITAGG--------------QPL
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ZP_00353225      ------------------------------------------------------------
ZP_00244808      ------------------MTKTIELH-----------------------------TNH
ZP_00244807      SRTWAAFALAAAVFAAPLTAAAQKVRLA--------------------------TSE
ZP_00358245      -----------MQIDVSKT--YRVTME---------------------------TTR
ZP_00350273      -----------------------MIKLH--------------------------TNF
ZP_00129494      ----------MSN--------PMVLLE---------------------------TSS
ZP_00130259      -----------------------------------------------------M
ZP_00136576      LIATCTLLFAGSLLAATPAA-KPHVLIA-------------------------TSL
NF01760157       -----------------------MATAVLE-----------------------TNF


CSHUA            GRVSFEL---FADKVPKTAEN---FRALSTGE-----------------KGFG--------
NP_839944        GRISIKL---FADKILKTAEN---FRALSTGE-----------------KGFR--------
NP_115861        GDIKIEVF---CERTPKTCEMESRCVPQAG-------------------------VQW
NP_570981        GDIKIEVF---CERTPKTCEN---FLALCA-------------------------SNY
NP_057143        GIIVLELY---WKHAPKTCKN---FAELAR-------------------------RGY
CSHUB            GRVIFGL---FGKTVPKTVDN---FVALATGE-----------------KGFG--------
566681           GRIQMLL---RSDVVPMTAEN---FRCLCTHE-----------------KGFG--------
A57545           GRITMEL---FSNIVPRTAEN---FRALCTGE-----------------KGFG--------
A41581           GRVVLEL---KADVVPKTAEN---FRALCTGE-----------------KGFG--------
A54204           GRIVIGL---FGKVPKTVEN---FVALATGE-----------------KGYG--------
564705           GDLNLELH---CDLTPKTCEN---FIRLCK-------------------------KHY
D38552           GDIHTKLF---PVECPKTVEN---FCVHSR-------------------------NGY
NP_624311        GDVVIDLY---TEERPRACLN---FLKLCKIKY-----------------------
32708309         GRMKIEL---FADVVPKTAEN---FRQFCTGEFR-----------KDGVP------IG
A45981           GRIVLEL---FADIVPKTAEN---FRALCTGEKG---------IGHTTGKP------LH
J40763           GRVVFELF---SDVCPKTCEN---FRCLCTGEK--------------GTGKSTQKPLH
A47328           GRIMFQLF---SDICPKTCKN---FLCLCSGEK--------------GLGKTTGKKLC
KP_531396        GRVSFEL---FADKVPKTAEN---FRALSTGE-----------------KGFG--------
KP_525294        GRVSFNL---FADKIPKTAEN---FHALSTGE-----------------KGFG--------
KP_523512        ----------PDKLPKTAEN---FHALSTGE-----------------KGFG--------
KP_507866        GRVVLEL---KADVVPKTAEN---FRALCTGE-----------------KGFG--------
KP_517783        GRVSFEL---FADKFPQIAG-------------------------------------
KP_517773        GCVSIKL---FADKIPKTAG-------------------------------------
KP_526904        GRVSFKL---LADKFPKTAEN---FRALSTGE-----------------KGFG--------
KP_516556        GHISFEL---FADKFPKTAEN---FHALSTGE-----------------KRFG--------
KP_526001        GHIPFEL---FADKIPKTGG-------------------------------------
KP_516021        GDIKIEVF---CERTPKTCEN---FLALCA-------------------------SNY
KP_515886        GRVVFELF---SDVCPKTCEN---FRCLCTGEK--------------GTGKSTQKPLH
KP_525218        GHAKEIK---MSSDNQGSAD-------------------------------------
KP_507684        GRVSFEL---FADKVPKTAEN---FRALSTGE-----------------KGFG--------
KP_524688        GRMKIEL---FADVVPKTAEN---FRQFCTGEFR-----------KDGVP------IG
KP_513346        GRIQMLL---RSDVVPMTAEN---FRCLCTHE-----------------KGFG--------
KP_524598        GHVSFKL---SADKFPNTAEN---VHAMSTGE-----------------KGFG--------
KP_515004        ------TLL--PCATPKTCEN---FIRLCK-------------------------KHY
KP_523437        GRISFEL---FADKFPTTAEN---FHALSTGE-----------------KG---------
KP_520485        DRVSLEL---FADKFPKTAGN---FHALSTGE-----------------KGFG--------
KP_519076        GRVSFEL---FADKVPKTAEN---FRALSTGE-----------------KGFG--------
KP_527705        DHVSFEL---FAEKFPKTAEN---VRALSTEE-----------------KGFG--------
KP_527529        GDVVIDLY---TEERPRACLN---FLKLCKIKY-----------------------
KP_518678        DRKFVAFG---QLIEGTEVLK---QLELVPTQNER----------------------P
CSMSA            GRVSFEL---FADKVPKTAEN---FRALSTGE-----------------KGFG--------
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NP_598845        GRVVLEL---KADVVPKTAEN---FRALCTGE---------------KGFG--------
AAH58369         GVIVLELY---WKHAPKTCKN---FAELAR------------------------RGY
A56861           GRVVFGL---FGKTVPKTVDN---FVALATGE---------------KGFG-------
A40047           GRIVIGL---FGNVVPKTVEN---FVALATGE---------------KGYG-------
NKCR_MOUSE       GRIMFQLF---SDICPKTCKN---FLCLCSGEK--------------GLGKTTGKKLC
AAH61645         GDIKIEVF---CERTPKTCEN---FLALCA-----------------------SNY
BAC41068         -DLNLELH---CDLTPKTCEN---FIKLCK-----------------------KQY
BAC34686         GRIVLEL---FADIVPKTAEN---FRALCTGEKG---------TGSTTGKP------LH
BAB30711         GDVVIDLY---TEERPRACLN---FLKLCKIKY-------------------------
BAB25645         GRMKIEL---FADVVPKTAEN---FRQFCTGEFR------------KDGVP------IG
BAB23880         GRMKIEL---FADVVPKTAEN---FRQFCTGEFR------------KDGVP------IG
NF00527760       GRIIMEL---FSNIVPQTAEN---FRALCTGE---------------KGFG-------
NF01138503       GDIHIKLF---PVECPKTVEN---FCVHSR----------------------NGY
NF00510830       GRIQMLL---RSDVVPMTAEN---FRCLCTHE---------------KGFG-------
NF00510932       GVIVLELY---WKHAPKTCKN---FAELAR------------------------RGY
NF01595779       GPVSFEL---FSDKVQKTAEN---CPALSTGE---------------KGFG-------
NF02014914       GRVSFEL---FADKVPKTAEN---FQALSTGE---------------KGFG-------
NF01930249       GPCLFEL---FADKVPKTAEN---FHSLSPGE---------------KGFG-------
NF01929278       GLVSFKL---FADKVPKTAGN---FRALSTGE---------------KGFG-------
NF00523006       GRVSFEL---FADKVPKTAEN---FRALSTGE---------------KGFG-------
NF00508381       GRVSFEVGWLFADKVPKTAEN---FRALSTGE---------------KGFG-------
NF01215170       GDIKIEVF---CERTPRTCEN---FLALCA-----------------------SNY
CSRTA            GRVCFEL---FADKVPKTAEN---FRALSTGE---------------KGFG-------
NP_783638        GDIKIEVF---CERTPKTCEN---FLALCA-----------------------SNY
NF01612782       GGIVLEL---FADIVPKTAEN---FRALCTGEKG---------TGLTTGKP------LH
NF01612825       GRIQMLL---RSDVVPMTPEN---FRCLCTHE---------------KGFG-------
NF01607941       GRIVLEL---FADIVPKTAEN---FRALRTGEKG---------TGWTAGKP------LH
NF01607846       GCVSFKL---FADNVPKTAEN---FHALSTGE---------------KGFG-------
NF01609144       GRIVIGL---FGKVVPRTVEN---FVTLATGE---------------KGYG-------
NF01608897       GRVSLEL---FADKVPRTAEN---FRSLTTGE---------------KGFG-------
NP_758443        GRVVLEL---KADVVPKTAEN---FRALCTGE---------------KGFG-------
AAH61971         GRVTFGL---FGKTVPKTVDN---FVALATGE---------------KGFG-------
G2828710         GRVVFELF---SDVCPKTCEN---FRCLCTGEK--------------GTGKSTQKPLH
B38388           GRIVMELR---SDVVPKTAEN---FRALCTGE---------------KGFG-------
AF132148         GDLTVDLF---ISERPIACLN---FLKLCRLK-----------------------Y
NP_611113        GPLNLELF---CDQTPRACDN---FIKHCA-----------------------NGY
NP_611695        GRIEIGL---FGKTVPKTVEN---FKELALKP---------------QGEG-------
NP_610590        GDLKIELF---CDACPKACEN---FLALCA-----------------------SDY
NP_648697        GRIVMELR---SDVVPKTAEN---FRALCTGE---------------KGYG-------
NP_648508        GDIDIELW---ARECPKACRN---FVQLCLEG-----------------------Y
NP_648338        GRMIIELR---KDVVPKTAEN---FRALCTGE--------------CGIG-TLGKPLH
NP_476656        GRITFGLF---GKLAPKTVAN---FRHICLRG------------------I-NGTS
NP_523874        GEITVELY---WKHAPNTCRN---FAELSR------------------------RGY
NP_523773        GRIVMLL---RADVVPKTAEN---FRQLCTHE---------------QGYG-------
NP_610224        GRMIFEL---FADTVPRTAEN---FRQFCTGEYR------------PDGVP------IG
NP_733246        GRIVFELF--NDVAPKTAEN---FRALCTGEK--------------GFGLITGKKLQ
NP_611935        GDIHMRLF---FKEVPKTVEN---FCVHAK-----------------------NGY
EAA03569         GRIVIELR---ADVVPRTAEN---FRALCTGE--------------RGIAPDTGTRLH
EAA03948         GRIVIGL---FGGTVPKTARN---FKELAEKTT--------------KGEG-------
EAA04625         GRMVFEL---YADVVPKTCEN---FRQFCTGEYK------------KDGVP------IG
EAA06299         GRIVIELR---PDVVPKTSEN---FRALCTGE---------------KGFG-------
EAA08127         GRIVFELF---PAVAPKTCEN---FRALCTGEK--------------GIGQKTGKPLH
```

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EAA09839         GALNLELY---CEQVPKTCEN---FLKHCQ------------------------SGY
EAA10133         GDVHLRLF---GKECPKTVEN---FCVHSK------------------------NGY
EAL39647         GDITVDLF---LKERPRAALN---FLKLCKLK-----------------------Y
EAA13913         GDIKIELF---CDDCPKTCEN---FLALCA------------------------SDY
EAA13914         GRITIGMF---GEEAPKTVAN---FRQLCTKD--------------------V-DGFS
EAA14200         GRIIMVL---RADVVPKTAEN---FRALCTGE---------------QGFG-------
EAA01474         GRILIEVR--NDVAPKMAKN---FGALCTGELG--------------------FG
KP_321072        GRILIEVR--NDVAPKMAKN---FGALCTGELG--------------------FG
KP_320182        GELTIELY---WKHAPNTCRN---FAELAR------------------------RGY
KP_319131        GRITIGMF---GEEAPKTVAN---FRQLCTKD--------------------V-DGFS
KP_311949        GRIVFELF--PAVAPKTCEN---FRALCTGEK--------------GIGQKTGKPLH
CAI11739         GRLLFELF---SDVCPKTCRN---FKALCTGEAG------------LSKSN---LELS
AAQ91263         GRIVMELR---ADVVPKTAEN---FRALCTGE---------------KGFG-------
NP_001004626     GRIIIEL---FADVVPKTVAN---FRALCTGE---------------HGFG-------
NP_001002065     GRVVFEL---FADVVPKTAEN---FRALCTGEKG---------VGKSTGKP------LH
NP_957499        GRMKIEL---FADIVPKTAEN---FRQFCTGEFK-----------KDGVP------VG
AAQ94596         GRMKIEL---FADIVPKTAEN---FRQFCTGEFK-----------KDGVP------VG
NP_998184        GRIVIGL---FGKTVPKTTEN---FLQLATGE---------------KGFG-------
NP_001002146     GDMKIELF---CEKAPKSCEN---FLALCA------------------------GGF
AAQ91264         GRVVMELR---ADVVPRTAEN---FRQLCTGQ--------------PGYG-------
AAH59458         GRVVMELR---ADVVPRTAEN---FRQLCTGQ--------------PGYG-------
AAH56814         GDIVIDLY---TEERPKASLN---FLKLCKIKY----------------------
AAH62863         GRVVMELR---TDVVPRTAEN---FRQLCTGQ--------------PGYG-------
NP_998629        GRVVIELF---SDVCPKTCEN---FRCLCTGEK--------------GVGKTTQKPLH
NP_957285        GRVSASFTS--TAMAPATNHE---ADAIAD------------------------DAV
NP_506749        GRIVMEL---YNDIVPKTAEN---FRALCTGE---------------KGVGKSG-KPLH
NP_506561        GRVTMEL---FNDVVPKTAEN---FRALCTGE---------------KGVGEQG-VALH
NP_504522        GKVIIQMN----EALKKNLTEL--FVKTARGEFVHP-----------SCG----KKIE
NP_506751        GRIVMEL---YDDVVPKTAGN---FRALCTGE---------------NGIGKSG-KPLH
NP_497745        GRIEIRLF---VEDAPKTCEN---FRALCTGEV--------------GMTPNNKARLH
NP_499828        GRIVMEL---YNDIVPKTAEN---FRALCTGE---------------KGKGKSG-KKLH
NP_497257        GKIVIGL---FGEVVPKTVKN---FVELAQRA---------------EGEG-------
NP_509506        GRIVFSLW---NHCCPRTVEN---FRAFCTGE---------------LGKMNGHYAS
NP_503034        GRIVIEL---RTDVTPKTAEN---FRCLCTGE---------------RGFG-------
NP_501118        GKIALELY---WNHAPRTCQN---FSQLAK------------------------RNY
NP_496562        GDIEIELW---TKEAPLACRN---FIQLCMEN----------------------Y
NP_495855        GTIVIEL---FADVTPRTAEN---FRQFCTGEYK-----------KDGVP------NG
NP_496337        GPLNLELF--APKVPKACEN---FITHCS------------------------NGY
NP_495417        GDIKIELY---VDDAPKACEN---FLALCA------------------------SDY
NP_493378        GDITIRLF---GDECPKTVEN---FCTHSR------------------------RGY
NP_492343        GDLIIDLF---VKERPRCSLN---FLKLCKKK----------------------Y
NP_493624        GRIVIGL---FGKTVPKTATN---FIELAKKP---------------KGEG-------
T06073           GRIVMEL---YTDKTPRTAEN---FRALCTGE---------------KGVGGTG-KPLH
NP_175776        GDIVIDLH---SDKCPLTCKN---FLKLCKIK----------------------Y
NP_567029        GRILIGL---FGNIVPKTAEN---FRSLCTGEKGVG--------N-MGKPLY--------
NP_201554        GDLNIELH---CDIAPRACEN---FITLCE------------------------RGY
NP_200679        GRIVMGL---FGKTVPKTVEN---FRALCTGEKGIG--------K-NGKALH--------
NP_181407        GRIKMEL---FADIAPKTAEN---FRQFCTGELR-----------KAGKP------LG
NP_191166        GRVVMEL---FADVTPRTANN---FRALCTGE---------------NGIGKAG-KALH
NP_171696        GDIKCEIF---CDEVPKSAEN---FLALCA------------------------SGY
NP_195222        GRIVIGL---YGTVVPKTVEN---FRALCTGEKGKT-------S-SGKPLH--------
NP_195213        GRIEMEL---FADTTPNTAEN---FRALCTGE---------------KGMGKLG-KPLH
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NP_196816        GRIVIGL---YGDDVPQTVEN---FRALCTGE---------------KGFG--------
NP_188932        GRIVIELF---ADLTPRTAEN---FRGLCTGE---------------RGIG-KCGKPIH
NP_191762        GRIVMGL---FGEVVPKTVEN---FRALCTGE---------------KKYG--------
NP_190046        GDIHMKLY---PEECPKTVEN---FTTHCR------------------------NGY
NP_180557        GRVVIGL---FGKAVPKTAEN---FRALCTGEKGVG--------K-SGKPLH--------
NP_181157        GPFTVEMY---YKHSPRTCRN---FLELSR------------------------RGY
NP_179251        GRIVMEL---YADTTPETAEN---FRALCTGE---------------RGIGKQG-KPLH
NP_179709        GKIVMEL---YTDKTPKTAEN---FRALCTGE---------------KGVGRSG-KPLH
AAK02067         GRIVIELY---DDVPKTAEN---FRLLCTGE---------------KGLGPNTGVPLH
P82869           -------------------TAGN---FAKLVTSG-------------------------A
T05352           ETMVFELF---PEVAPKTSEN---FRALCTGE---------------KGIGPRSGKPLH
T49181           QRIVIELF---ADVVPKTAEN---FRALCTGE---------------AGVGKSTGKPLH
T05314           GPIDVELW---PKEAPKSVRN---FVQLCLEG-------------------------Y
CSZPA            GRIVFKL---FDDVVPKTAAN---FRALCTGE---------------KGYG--------
E313994          GKILIELY---TEHAPKTCQN---FYTLAK-----------------------EGY
E1335804         GRVTIGL---FGKTVPKTAEN---FRALATGE---------------KGFG--------
E1331567         GRIKIRL---FSSIVPKTAEN---FRQFCTGETLG-----------VNQKP------IG
S62327           PTIYFEL---FDNVVPKTVKN---FASLCNG-------------FEKDGRC------LT
S62590           GEINIELH---TDYAPHAVYN---FVQLAK-----------------------QGY
E1294518         GDISIKLY---PEEAPKAVQN---FTTHAE------------------------NGY
T39728           GDLVIDLF---VKEAPKTCEN---FLKLCKLK-------------------------Y
E1263915         GDIQIELW---CKEVPKACRN---FIQLCLEG-------------------------Y
CSBY             GRVVFKL---YNDIVPKTAEN---FRALCTGE---------------KGFG--------
S30507           GRIEFEL---YDNVVPKTAEN---FRALCTGE---------------KGWG--------
S12324           GRIVIGL---YGKVCPKTAKN---FYKLSTTTN-------------SKKG--------
S57050           GRIVCKL---FREKAPKTTEN---FYKLCAGDV-------------KSPLKDQQYLS
S48567           GRIVFEL---YNDIVPKTAEN---FLKLCEGNAGM---------AKTKPDVP------LS
CSBYC3           ADLTFELY---GTVVPKTVNN---FAMLAHGVKAV-----------IEGKDPNDIHTYS
S63359           RLITIDLY---GTMVPKTVMT---FCQYVDSVKDR-----------LASR-----HSYS
S38324           GRIVMGL---YGLTTPQTVEN---FYQLTISRD-------------PKMG--------
TcCyP19          GRVVFEL---FADAVPKTAEN---FRALCTGE---------------KNFG--------
TcCyP20          GSLLIHLR---YTDCPKACFN---FLALCA------------------------SSY
TcCyP21.1        GRVVIGL---FGNDVPKTVEN---FKQLASGE---------------NGFG--------
TcCyP21.3        GRVEMEL---FKDAVPKTAEN---FRALCTGE---------------KGVGRSG-KALC
TcCyP24.3        GRVEVELF---DDTVPITARN---FRELCRGYQN---------------KTPEG-KPLH
TcCyP26          GQVTIELF---HDTVPKTSEN---FRSLCTGE---------------RGFI-QC--PLY
TcCyP28          GRIKMEL---YADTVPKTAEN---FRALCTGE---------------KGRGKSG-KPLH
TcCyP30          KRIEYELF---TRKCPVAVEN---FVKLCTGENVLPRVPSTAG--MGDPSFGDQFLPQVT
TcCyP35.1        GRITFELY---SXVVPKTCNN---FWHLCHGDLG-------SVSVVPDGESEAQPLELT
TcCyP35.3        LRIEFELFD---DESPKACAN---FRHLCAGQSTSR----------KGQTYCYQGLTPC
TcCyP40          EKILLELF---DDITPKTCAN---FRALCTGNE-------------GKVTDETQIPMT
TcCyP110         GTIIVRLL---PHFAPKAVVN---FVGLAQ--------------------------EGF
AAT44353         GRIVMELE---ADVVPKTAEN---FRALCTGE---------------KGFG--------
EAL37431         GRITMEL---FADKVPITAEN---FRALCTGE---------------KGMGQSG-KPLC
EAL37232         GDLKFELF---CSQCPKACKN---FLALSA------------------------SGY
EAL37110         SKLRIGLF---GVEVPKTANN---FYSLCVGGM---------------KDKDG-KEMS
EAL36265         GDLVIDLN---VDLCPKTCEN---FLKLCKLK-------------------------F
EAL35294         GRLVIEL---FQDIVPKTSEN---FRQFCTGEYK-----------KNLKS------VG
U68268           GRITFEL---FADAVPKTAEN---FRALCTGE---------------KGFG--------
U68269           GRITFEL---FADAVPKTAEN---FRALCTGE---------------KGFG--------
AAQ15626         GRVEMEL---FKDVVPKTAEN---FRALCTGE---------------KGLGRSG-KALS
AAB07896         GRITFEL---FADAVPKTAEN---FRALCTGE---------------KGFG--------
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AAK14937        GRVVFEL---FSDVVPKTAEN---FRALCTGE----------------KSTP--G-NPLH
CAC18541        GRIQLEL---FADVTPKTAEN---FRQLCTGEYR-----------KDGVP------TG
A45000          GRIVFAL----FDDVPKTVEN---FRALCTGE----------------KGFG-------
Q9Y0F5          GDLKFELF--CSQCPKACKN---FLALSA-------------------------SGY
J47811          GRIVMEL---FADIVPKTAEN---FRCLCTGE----------------RGMGRSG-KKLH
J50388          GRIVMEL---RSDIVPRTAEN---FRALCTGE----------------RGFG-------
L46884          GRIIFEL---FND-VPDTTRN---FRELCTHK----------------NNFG-------
M93420          GRIVMEL---RSDIVPRTAEN---FRALCTGD----------------RGFG-------
J50389          GRIIIGL---FGKTVPKTVEN---FKQLSIGTTLK----------DGRTAA-------
G992633         ARIIIGL---FGKTVPKTVEN---FKQLSIGTQLK----------DGRTAS-------
E323073         GRIVMEL---RSDIVPRTAEN---FRALCTGE----------------RGFG-------
S52758          GRITIGL---FGKDAPLTTEN---FRQLCTGE----------------HGFG-------
E1203753        GRVTMEL---FKDAVPQTAEN---FRALCTGE----------------KGFG-------
CAB58290        GALSIELYN------NFCADS---FWQLARSD-------------------------Q
CAB58298        GRIVMEL---YADTVPKTAEN---FRALCTGE----------------KGKGRSG-KPLH
AAF69736        ERVVLELF---ADVTPKTCEN---FRQLCLGND--------------GKKVEGTEVPMT
AAD46565        GRITIGL---FGKDAPLTTEN---FRQLCTGE----------------HGFG-------
A53522          GRIILELR---EDIAPKTVKN---FIGLFD---------------------------K
NP_702112       GELEIHLF---SNECPEACRN---FIQHCLNN-------------------------Y
NP_701512       GRVLIGLY---SDQVPLSTEN---FIQLAEGYQIK-----------DKYIG-------
NP_701389       GRMIFELF---MDKLPITCEN---FRCLCTGETG--------------LGYYL-KPRW
NP_701030       GDIKIELF---CYEVPKTCKN---FLALCA-------------------------SGY
NF01067443      GKVYFELFN--DEEIKKSVDN---FLSLCKGQ--------------DYHSIYSNDILS
NF01067965      GKFKFEL---FQNIVPRTSEN---FRKFCTGEHK------------INNLP------VG
NF01065889      GDIHISLF---YKECKKTVQN---FSVHSI--------------------------NGY
NF00926916      GRIIFEL---FSDITPRTCEN---FRALCTGE----------------K-IGSRG-KNLH
S52760          GRIVFGLY---GKVAPKTVEN---FVSICKG-----------------TVVDG-KMLH
J10322          GKFKFEL---FQNIVPRTSEN---FRKFCTGEHK------------INNLP------VG
CAB39039        GRIIFEL---FSDITPRTCEN---FRALCTGE----------------K-IGSRG-KNLH
CAD51648        GEFQVELY---WYHSPKTCLN---FYTLCT-------------------------MGY
NF01497907      GRIVFEL---FNDITPRTCEN---FKSLCVGD--------------K-VGSRG-KNLH
NF01497552      GEIHISFF---YKECKKTVLN---FATHST--------------------------NGY
NF01497379      GRIVFGLY---GKVAPKTVEN---FVSICKG-----------------TVVND-KMLN
NF01497199      GKFKFEL---FQNIVPKTSEN---FRQFCTGEYK------------VNNLP------VG
NF01496968      GKVYFELYN--DEGIEKSIEN---FLSLCKGN--------------EYHSIYSNEMLT
NF01495390      GRVLIGLY---SDQVPLSVEN---FIQLSEGYKVK-----------DKYIG-------
NF01495324      GDFEVELY---WYHSPKTCLN---FYTLCE-------------------------MGF
NF01493974      -----------------------------------------------------------
NF01493918      GELEILLF---SNECPIACKN---FIQLCLNN-------------------------Y
E316521         KKIVFKL---YDDVVPKTAAN---FRELATGS----------------RGFG-------
CAC35733        GDIIIDLH---TQVS-LAAKN---FIKLCKSK-------------------------F
J47812          GRIVMEL---FNDIVPKTAEN---FRALCTGE----------------KGVGKSG-KPLH
J47813          GRIVMEL---FADIVPKTAEN---FRCLCTGE----------------RGVGRSG-KKLH
G2624966        GRIVMEL---FNDIVPKTAEN---FRCLCTGEKG---------NG-----------LT
E1317902        GAINLELY---CKDVPRACEN---FIKHCK--------------------------NGY
E1319851        GAINLELF---CKDAPRACEN---FIKHCK--------------------------NGY
G3057040        GVINLELF---CKDAPRACGN---FIKHCK--------------------------NGY
AAB81959        GRVSFEL---FADKVPKTAEN---FRALSTGE----------------KGFG-------
AF023860        GRVSFEL---FADKVPKTAEN---FRALSTGE----------------KGFG-------
AAB81961        GRVSFEL---FADKVPKTAEN---FRALSTGE----------------KGFG-------
AAF22215        GRVSFEL---FADKVPKTAEN---FRALSTGE----------------KGFG-------
AF243140_1      GRVSFEL---FADKVPKTAEN---FRALSTGE----------------KGFG-------
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AF252388        GRVVLEL---KADVVPKTAEN---FRALCTGE--------------KGFG--------
CSBOAB          GRVSFEL---FADKVPKTAEN---FRALSTGE--------------KGFG--------
NF01922219      KRIEIEL----FADVPETAEN---FRQLCTGE--------------AGFG--------
NF01725587      GRIMMELR---GDVVPKTAEN---FRALCTGE--------------KGFG--------
NF01897292      GTVDIGLF---GDQVPKTVKN---FETLCGDGF-------------KREGDEQ-VYSY
CSHYAC          GRVSFEL---FADKVPKTAEN---FRALSTGE--------------KGFG--------
NF00071027      GRVSFEL---FADKVPKTAEN---FRALSTGE--------------KGFG--------
NF01951405      GDLNLELH---CDMTPRTCEN---FIKLCK-----------------------KNY
NF01059378      GRVSFEL---FADKVPKTAEN---FRALSTGE--------------KGFG--------
NF01105745      GRITFEL---FADKVPKTAEN---FRALCTGE--------------KGVGRSG-KPLH
NF00495096      GRVSFEL---FADKVPKTAEN---FRALSTGE--------------KGFG--------
NF01053198      GRIVMEL---YADTTPRTAEN---FRALCTGE--------------KGNGRSG-KPLH
CSPGA           GRVSFEL---FADKVPKTAEN---FRALSTGE--------------KGFG--------
NF01950932      GDIKIELF---CERTPKTCEN---FLALCA----------------------SNY
NF01951326      GRIVFEL---FADIVPKTAEN---FRALCTGEKG----------TGATTGKP------LH
NF00909389      GRIVMEL---YADVTPRTAEN---FRALCTGE--------------KGVGRSG-KPLH
NF01286555      GRIVMEL---FADTTPRTAEN---FRALCTGE--------------KGKVRSG-KPLH
NF01737225      GRIVMEL---YADTTPETAEN---FRALCTGE--------------KGMGKSG-KPLH
NF01590839      GLIVLKLF---YKETPLTVCN---FVGLAEG--------------TLDAAK-GKPF
AAH51602        GTITVELY---WLHAPVTCKN---FAELAR----------------------RGY
AAT69672        GRIVMELR---SDVVPKTAEN---FRALCTHD--------------KGFG--------
AAH54186        GRIVMELR---SDVVPKTAEN---FRALCTHD--------------KGFG--------
AAH54168        GRIVIGL---FGKTVPKTVEN---FVTLATGE--------------KGYG--------
NF01208049      GDLNLELY---CDKTPKTCEN---FIKLCK-----------------------KNY
NF01844632      GRVVFELF---SDVCPKTCEN---FRSLCTGER-------------GIGKSTQKPLH
NF01844615      GEIDIELW---SKEAPKACRN---FVQLCLEG-----------------------Y
NF01915773      GTITVELY---WLHAPMTCKN---FAELAR----------------------RGY
NF01915657      GEIKIELF---CERAPKASEN---FLALCA----------------------SNY
NF01557564      GRIVLEL---FADVVPKTAEN---FRALSTGEKG---------IGQSTGKP------LH
AAH41536        GRIIMELR---SDVVPRTAEN---FRALCTHE--------------KGYG--------
AAH85963        GRVVFELF---SDVCPKTCEN---FRCLCTGEK-------------GTGKSTQKPLH
AAH64250        GRMKVEL---FADIVPKTAEN---FRQFCTGEFR-----------KDGVP------IG
AAH61335        GRIVLEL---FADVVPKTAEN---FRALSTGEKG---------IGQSTGKP------LH
AAH59741        GRIIMELR---SDVVPKTAEN---FRALCTNE--------------KGFG--------
AAH67931        GRVVFELF---SDVCPKTCEN---FRSLCTGER-------------GIGKSTQKPLH
AAH44993        GDLNLELY---CDKTPKTCEN---FIKLCK-----------------------KNY
A40516          GRVVIGL---FGKTVPKTVEN---FVALATGE--------------KGFG--------
CYPB_BOVIN      GRVVIGL---FGKTVPKTVDN---FVALATGE--------------KGFG--------
AAR19276        GRITLEL---FADTVPKTAEN---FRVLSTGE--------------KGFG--------
A46579          GRIVLEL---FADIVPKTAEN---FRALCTGEKG---------IGPTTGKP------LH
AAV40687        GRVAFRL---YSDLVPKTAEN---FRALCTGEKG---------LGQSGKP------LW
NF01637248      GRIVFKL---FDDVVPKTARN---FRELATGQ--------------NGFG--------
CYPR_BOVIN      GRITMEL---FSNIVPKTAEN---FRALCTGE--------------KGFG--------
CYPR_CALVI      GRIVFGLF---GKRAPKTVTN---FRHICLRG--------------------I-NGTT
E1317906        GPLNLELY---CQKAPKACEN---FITHCT----------------------NGY
AAB87888        GRIIMELR---SDVVPKTAEN---FRALCTGE--------------KGFG--------
AAB87889        GRIIMELR---SDVVPKTAEN---FRALCTGE--------------KGFG--------
Q9XZZ5          GRIIMELR---SDVVPKTAEN---FRALSTGE--------------KGFG--------
S63995          GRIVMELR---SDVVPKTAEN---FRALCTGE--------------KGFG--------
G1703696        GRIVMELR---ADVVPKTAEN---FRALCTGE--------------KGFG--------
J36797          ----MELD---ADVVPKTAEN---FRALCTGE--------------KGFG--------
AF017738        GDIDIELW---SKECPLACRN---FIQLCMEG-----------------------Y
```

```
L37292          GRIVMELY---NDIAPRTCNN---FLMLCTGMA----------------GTGKISGKPLH
AAS01736        GRIVMEL---FADVVPRTAEN---FRALCTGE--------------KGVGRLG-KPLH
AAO61985        KNIIWNLY--WGEFFGGLGIS-YIFLKLANFS-------------------------QA
CAC80550        GRIVMEL---FADTTPRTAEN---FRALCTGE--------------KGVGRSG-KPLH
AAO63777        GRIVMEL---FADTTPRTAEN---FRALCTGE--------------KGKVRSG-KPLH
353522          GRIEFEL---FADVVPKTAEN---FRALCTGE--------------KGTGRSG-KPLY
E280557         GRIVFGLF--ADLCPYTVRN---FASLVLGNT---------------TNSDG-ILLA
J70827          GRIVMELY---NDIAPRTCNN---FLMLCTGMA----------------GIGKISGKPLH
J70884          GRIVMELY---NDIAPRTCNN---FLMLCTGMA----------------GIGKLSGKPLH
J55771          ETLVVGLY---GDLVPKTVNN---FVSLCEG-----------------TKIGD-KHYS
D1024669        GRIEIGL---FGKTVPKTVKN---FVETATKHLTEK-------SEDDKLVG-------
227879          GKVVMEL---YANTVPKTAEN---FRALCTGE--------------KGIGKSG-KPLS
AAD48910        GRIVFGL---YGKTVPKTVEN---FRALCTGEKGLG-------T-SGKPLH-------
AAO51811        GRIKIEL---FADIVPKTAEN---FRQFCTGEHR------------VAGLP------IG
AAF76472        GDIKCEIF---CDEVPKSAEN---FLALCA--------------------------SGY
AAP80861        GRVVMGL---FGKAVPKTAEN---FRALCTGEKGMG--------N-SGKPLH-------
AAP73848        GRIKMEL---FADIVPKTAEN---FRQFCTGEHR------------KSGLP------QG
BAB62329        GAFTIEMY---YKHAPKTCRN---FLELSR--------------------------RGY
AAL75728        GRVVIELL---ADKVPDTAEN---FRRLCTGERAGR-----------SGKS-----RLH
348017          GRIVMEL---YAKDVPRTAEN---FRALCTGE--------------KGVGKSG-KPLH
348018          GRVVMEL---FADTVPKTAEN---FRCLCTGE--------------KGLGASG-KPLH
BAD53622        GRVVMGL---FGKTVPKTAEN---FRALCTGEKGTG--------K-SGKALH-------
BAD53621        GRVVMGL---FGKTVPKTAEN---FRALCTGEKGTG--------K-SGKALH-------
BAD53620        GRIVMGL---FGNTVPKTAEN---FRAICTGEKGLG--------K-SGKPLS-------
KP_507188       GRVIFGLY---GRLLPLTTAN---FKAACTSA-------------------------A
KP_483750       GDIHLRLY---PEECPKTVEN---FTTHCR--------------------------NGY
KP_483749       GPAPVPPR--PRKKRPLQFEQ--AFLDALPSA-------------------------AM
KP_482125       CVFRIVLD---GYNAPVTAGN---FLDLVERK--------------------------F
KP_478742       ATIQVVID---GYSAPLTAGN---FAKLVLDG--------------------------A
KP_478741       ATIQVVID---GYSAPLTAGN---FAKLVLDG--------------------------A
NP_385690       -RVVIELR---PDVAPGHVAR---IKELTREG--------------------------A
NP_385689       -PVVIELR---PDIAPKHVQQ---IKELAAAG--------------------------E
NP_349373       NKIKIELY---PHIAPNTVSN---FISLIN--------------------------HNF
BAD45990        GDIEVDLH---TDMCPLTTKN---FLKLCKGNEGL----------------------V
BAD45991        GDIEVDLH---TDMCPLTTKN---FLKLCKMK-------------------------Y
NP_908419       GRITIGLF---GDAAPAGASR---FLSLVTGVG------------------------
NP_919903       PETTYEAK---KIVCPLGLEVH--KIHACPND-------------------------CIL
BAD35839        GRIVIELY---ASVVPRTAEN---FRALCTGE-------------KGVGAVTGKHLH
AAU87301        GRIVMEL---YADVVPKTAEN---FRALCTGE--------------KGTGRSG-KPLH
CAG90469        GRITIGL---FGTVVPKTAEN---FRQLAISTD-------------PKFG-------
CAG88330        GRVTFKL---YDDVVPKTAEN---FRALCTGE--------------KGFG-------
CAG88054        GNIVIDLF---IDQQPLACYN---FLKLCKLN--------------------------Y
CAG86818        GDIKLKLF---NELVPKTTEN---FIKLCE--------------------------KGY
NF01109982      GKIVMELR---KDVVPKTAEN---FRALCTGE--------------KGYG-------
NF00686348      GRVVIQLR---PDKAPKSVER---IKILVREG--------------------------F
NF00686217      --------------------------------------------------------
NF02138644      GRIVMEL---FADSTPKTAEN---FRALCTGE--------------KGIGLSG-KPLH
NF00926921      GRIVMGL---YGKTVPKTAEN---FRALATGE--------------KGFG-------
NF00909931      GKIVFEL---FADTTPRTAEN---FRALCTGE--------------KGVGRSG-KPLH
NF00956595      GRLRFLL---RADIVPMTAEN---FRCLCTHE--------------KGFG-------
NF02035209      GRIVMEL---FADVTPNTAEN---FRALCTGE--------------KEPGRSG-KPLH
NF01329591      GNIEIELF---NDKAPVSAKN---FENYVK--------------------------SNF
```

```
CAG86678       GPLKFELR-LSSIAQCKHVEN---FLRHCANG-------------------------------T
CAG86274       GEIHAGLF---GYTVPFTVNN---FIQLAN----------------KTNG-----YGY
CAG85447       GPIEIELW---AKEVPNITRV---FIQNCLDK-------------------------------K
CAG85287       SPIKFEL---YDEVVPKTTEN---FRALCTGE----------------KGFG-------
CAG84900       GRVVFEL---YNDVVPKTAEN---FRALCTGEKGA---------SESS-GKQ------LH
CAG84822       GRIVVEL---FDDLAPKTSEN---FIKLCNGS-----------------QITKEGSPLT
CAG84723       GRIKLKL---FASELPKTCEN---FRQFCTGEYR-----------ENNRP------KG
CAG79895       GKIVMGL---YGDVVPKTVEN---FRALCTGE-------------------TGKG-------
CAG78939       GQINLELY---PYNAPLTVYN---FVKLAQ--------------------------KGY
CAG82238       GKIYFEL---FADKVPKTAEN---FRALCTGEKG----------NTQAGIP------LH
CAG81980       GRIEFKL---YNDIVPKTAEN---FRALCTGE-----------------QGFG-------
CAG81971       GKISFKL---YKDQVPKTAEN---FRALCTGE-----------------KGFG-------
CAG81844       GRIKFKL---YSEDLPKTCEN---FRQFCTGEYR-----------IDNVP------QG
CAG84141       GPIEAELF---AKEVPLACTR---FLQLCKSG------------------------Y
CAG84091       GRVVFEL---FDD-TPLTSAN---FRALCKGD----------------KPTPEGSVPLT
CAG83821       GRKRLFLEL-FPDRAPQACKN---FVGLCAAPDG-------------------------
CAG76968       GNIELSLD---NQKAPISVKN---FVEYVN--------------------------NGF
CAG62671       GRIVCEL---YNDKAPKAVEN---FHRLCVG-------------------SGSVGGIHLT
CAG76052       GDIVINTF---ADKAPVTVEN---FLNYCR--------------------------SGF
CAG59915       GRIEFEL---YDDVVPKTAEN---FRALCTGE-----------------KGWG-------
CAG58658       GRVVFQL---YDDVVPKTAAN---FRALCTGE-----------------KGFG-------
G3777556       GRIVMEL---RPDVVPKTAEN---FRALCTGE-----------------KGFG-------
AAF65770       GRIVMEL---YADTTPRTAEN---FRALCTGE----------------KGVGRSR-KPLH
BAA25755       GRIIFEL---FADVTPRTAEN---FRALCTGE----------------KGVGRSG-KPLH
CSTO           GRVVMEL---YADTTPKTAEN---FRALCTGE----------------KGVGKMG-KPLH
CSRP           GRIVMEL---YADTVPETAEN---FRALCTGE----------------RGIGKSG-KPLH
CSZM           GRIVMEL---YANEVPKTAEN---FRALCTGE----------------KGVGKSG-KPLH
CYPH_ALLCE     ----MEL---FQDVVPQTAEN---FRALCTGE----------------KGMGDR--KPLH
AAG01536       GRVVMEM---FANDVPKTAEN---FRALCTGE----------------KGVGRMG-KPLH
AAB51386       GRVVMEL---FADTTPKTAEN---FRALCTGE----------------KGVGKMG-KPLH
G54833         GRIVFEL---YADVTPRTAEN---FRALCTGE----------------KGVGRSG-KPVH
K85185         GRIVMEL---FADTTPRTAEN---FRALCTGE----------------KGTGRSG-KPLH
Y08273         GRIVMEL---YADVPKTADN---FRALCTGE-----------------KGVGKSG-KPLH
Y08320         GRIVMEL---YADVVPKTAEN---FRALCTGE----------------KGVGKTG-KPLH
E1226445       GRIVMEL---YADTTPRTAEN---FRALCTGE----------------KGVGRSG-KPLH
L32095         GRIVIGL---FGDAVPKTVEN---FKTLSTGA-----------------KGYG-------
CAA10766       GRIKMEL---FADIVPRTAEN---FRQFCTGEYR-----------KAGIP------IG
AAF69796       GRITFKL---FDDVVPKTARN---FRELCTGQ-----------------NGFG-------
AAF69795       GRITFKL---FDDVVPKTAQN---FRELCTGQ-----------------NGFG-------
CSNCM          GRINFTL---YDDVVPKTARN---FKELCTGQ-----------------NGFG-------
NF01287451     GDIVIDLL---VDYAPKMCEN---FLKLCKVK-------------------------Y
NF01527836     GDLKIEIF---CESVPKTAEN---FLALCA----------------------------SGY
NF01488902     GTFTLELY---TNHAPKTCKN---FATLAD-----------------------------RGY
NF00648058     GRIVFEL---YNDIVPKTAEN---FRALCTGEKG----------VGKLGKP------LH
NF01487278     GRIVMGL---YGKTVPKTAEN---FRALATGE-----------------KGFG-------
NF01486260     GDIHIRLF---PDAAPKAVEN---FVTHAK-----------------------------RGY
NF00904102     GRIVMGL---YGKTVPKTAEN---FRALATGE-----------------KGFG-------
NF01484914     GDIVIDLL---VDYAPKMCEN---FLKLCKVK-------------------------Y
NF01484255     GRITFEL---FKDVVPRTAEN---FRQFCTGESKN----------NLGRP------QG
NF01483993     GEIAVELF---AKQTPLTCRN---FLQLALDG-------------------------Y
NF01533203     GRIVMEL---FADVVPRTTEN---FRALCTGE----------------KGKGRSG-KPLH
NF01483647     GPLTLELL---PEFAPKAVWN---FLRLSE-------------------------KGY
```

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571849          GRINFKL---YDDVVPKTAEN---FRALCTGE---------------KGFG--------
J17900          GRIVLGL---YGEVVPKTVEN---FRALATGE---------------KGYG--------
NF00873669      GTIKFKL---FDDVVPKTAAN---FRALCTGE---------------KGFG--------
NF01527595      DPIKFKL---FDDVVPKTTAN---FRALCTGE---------------KGFG--------
NF01539217      GRITFNL---YDDVVPKTAEN---FRALCTGE---------------KGFG--------
D1035365        GRIVMGL---YGKTVPKTAEN---FRALATGE---------------KGFG--------
YP_116397       GPIVLELD---DAKAPETVRN---FVDYVN------------------------SGH
YP_119877       GPLGLTLN---NAESPCTVNS---FVSLAT------------------------QGF
CAD25897        GRITFELY---WDITPKTARNFYEFVKGTEIGG---------------------KYYK
CAD26352        GRIVMKL---EDDIVPKTAKN---FRTLCERP---------------KGEG--------
AAD17998        GRIVLGL---YGKTVPETAEN---FRALATGE---------------KGFG--------
G2959712        GRIEMEL---YADDVPKTAEN---FRALCTGE---------------KGVGRSG-KPLH
CSNCC           GRINFTL---YDDVVPKTARN---FKELCTGQ---------------NGFG--------
AJ006689        GRIVFNL---FDKDVPKTAKN---FRELCKRP---------------AGEG--------
AAF28343        GDITLELY---YNHAPKACKN---FYELSK------------------------RGY
AAD50375        GRVVFEL---YNDIVPKTAEN---FRALCTGEKG----------IGKSGKP------LH
AAK21908        ------------------VVPKTAEN---FRALCTGE---------------KGVGRSG-KPLW
AAG13968        KRVEFKL---YDDVVPKTADN---FRRLCVGE---------------PGVGG-------
BAB58884        KRVEFKL---YDDVVPKTADN---FRRLCVGE---------------PGVGG-------
E1363908        GTIKFKL---FDDVVPKTAAN---FRALCTGE---------------KGFG--------
AAD16142        GRVVFNL---FEKDVPKTAKN---FRELCKLP---------------QGQG--------
G1764137        GRIVFEL---YDDVVPRTTNN---FRQLCLNP---------------PGKG--------
Z32674          STSSCTM---TSSPRPPRTSA---LSAPARRA---------------SATR--------
JT0686          GRINFNL---FNEQVPKTAEN---FKALCTGE---------------KGFG--------
CSCK            GKITFKL---YDDVVPKTAEN---FRALCTGE---------------KGFG--------
NP_986490       GRIVFQL---YNDVTPKTAEN---FRALCTGE---------------KGFG--------
NP_985014       GRIEFEL---YDDVVPKTAEN---FRALCTGE---------------KGWG--------
NP_984799       GRIVFEL---FQDKAPLSAQN---FKQLCCG-----------------GIELDGKHVS
NP_984183       GRVVFEV---YSDVTPKTAEN---FVRLCAGDAGE---------CRTKPGVP------LC
NP_982586       LEIGIELY---GSVVPDTVKN---FREIAKGVKAK----------IKGTD--QVLDIT
NP_982486       GRVVLGL---FGDVAPRTVAN---FVTLAKSQD--------------ASAG--------
AAT09096        GRIVMGL---YGKTVPKTAEN---FRALCTGEKGTG--------K-SGKPLH--------
YP_014938       GTIRIKLF---PEIAPKTVEN---FVTHSK-----------------------NGY
NP_951950       GNITIELF---RDKAPISARN---FLSYVK-----------------------DGY
NP_935388       GNFTVELN---EEKAPISVEN---FVKYVK-----------------------DGS
NP_907765       GTIELTLF---PKAAPKAVEN---FTTHVK-----------------------NGY
BAC91249        GKLRTIP----MEVRPARKEAEITASQVIQRR-------------------------VD
BAC90551        GAIVLELD---GPNAPVSAGN---FLDLVKRK--------------------------F
BAC89441        GPITIVLD---GDRAPINAGN---FIDLVQKG--------------------------V
BAC88914        GRILLEVD---GDNAPLSAGN---FVDLVKRG--------------------------F
AAV50868        GRLQIKLFR--D-AFPAGVEN---FVQLTNGK---------------TYR-VNSNGTGK
AAV82698        GNITVELN---RDAAPLTVKN---FFRYVK-----------------------KAQ
AAV81872        GDITLEMH---NETAPKTVDN---FLQYAR-----------------------DGF
NP_736022       GDINIKLF---PKYAPLAVEN---FLTHAK-----------------------EGY
NP_734780       GDMTVKLF---PDHAPKTVAN---FIGLAK-----------------------QGY
YP_085398       EKIDLEFF---PEEAPKTVEN---FKKLAE-----------------------QGF
NP_643098       DNFVVQFGD-PDGETPAKAKS------LGSAK--------------------------T
NP_641352       GPIVVELY---PDKAPLTVAN---FVNLAK----------------------R-G--F
BAB76758        -DLTVVVD---GYSAPVTAGN---FVDLVKRG--------------------------F
YP_129479       GDIEIELD---MKQTPVSSRN---FLKYCQ-----------------------DGF
YP_129310       GDIKIQLN---TEKAPETCAN---FLQYCR-----------------------DGF
YP_129032       GEFTIQLN---EEKAPISSEN---FLRYVE-----------------------DGS
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YP_101389      GDIKVKLY----NETPKHRDN---FIKLAKDG-----------------------------T
YP_087816      GDIKIALN---EKKAPVSSKN---FLDYAQ-----------------------------TGF
YP_087815      GDIKIALN---HEKAPETAAN---FEAYCK-----------------------------EGF
YP_076496      GTMTFELF---ADEVPQTVNN---FVFLAR-----------------------------EGF
AAT91289       GRIVFRL---YDQQVPITTKN---FRELATGQ---------------NGFG--------
AAT91260       GRIVFRL---YDQQVPITTKN---FRELATGQ---------------NGFG--------
NP_868477      GRIVLGL---FGKDVPKTAEN---FRALSTGEKGEG--------K-LGVPLD-------
NP_867717      GTIRIELF---DDKTPKTVEN---FETLCE-------------------------K-K--Y
NP_867158      GDMVFELF---EQRAARPTER---VIDLAN-----------------------------SGF
NP_865515      GDVLIELY---SGEAPSTVAN---FINLVEDG---------------------------F
NP_992233      GDIVINTF---ADKAPATVEN---FLNYCR-----------------------------KGF
NP_991569      GNIELELN---SQKAPISTQN---FVDYVN-----------------------------NGY
NP_280624      GEFDIELY---DERAPRTVEN---FLNLARHEPAADADPAPDTVTWEDPESGEIR-GDSL
BAC18575       GEIGMELD---RSVSPCTVNA---IEHFAA-----------------------------EGY
BAC16839       GDISIDLF--GNHAPETVAN---FIGLA----------EGTKEYKTANASGSQ-EGPF
BAB82272       EKIKIELY---PEIAPNTVRN---FVSLVK-----------------------------KGF
BAB99042       GNIGMELD---RSVSPCTVNA---VEHMAS-----------------------------EGY
BAB97427       GDITIDLF--GNHAPETVAN---FVGLA----------QGTKDYQSANAQGDS-EGPF
BAC08372       GKLTIVVD--GYSAPLTAGN---FVDLVQRH---------------------------F
BAC07690       RPITIQVK--GDAAPITAGN---FVDLVNRG---------------------------V
YP_072215      GNIELELN---SQKAPISTQN---FVDYVN-----------------------------NGY
YP_069574      GDIVINTF---ADKAPATVEN---FLNYCR-----------------------------KGF
NP_778719      GPIKINLF--ADKTPLTVAN---FVNLAK----------------------------R-G--F
NP_245881      GNIKIQLD---HEKAPNTAQN---FVNYCK-----------------------------SGF
NP_245880      GDIKMVLE--EEKAPISTQN---FLRYSQ-----------------------------AGF
NP_354667      -PVVIELM--PQVAPKHVAQ---IEALAKKG---------------------------A
NP_354666      -KVVIQLL--PEVAPGHVAR---IKELVSEG---------------------------A
NP_298502      GPIKINLF--ADKAPLTVAN---FVNLTK----------------------------R-G--F
AAN39296       GKIVMELR---KDVVPKTAEN---FRALCTGE---------------KGYG--------
AAQ24380       GRVVMELR---ADVAPKTAEN---FRALCTGE---------------KSMG--------
ZP_00353225    -----------------MAN---FVGLA----------EGTKEWQDPATGEKK-SQPF
ZP_00244808    GVIRAELD---EVKAPATVAN---FLSYVK-----------------------------AGH
ZP_00244807    GDIVLQLD---PAKAPKTVDN---FVAYVK-----------------------------SGH
ZP_00358245    GTIELDLY--PQHAPLTVNN---FVFLVR----------------------------E-G--F
ZP_00350273    GEITLELD---EEKAPVTTAN---FIQYVK-----------------------------DGF
ZP_00129494    GDMLIELY---ADKAPETVKN---FLRYVE-----------------------------EGF
ZP_00130259    GDFVVELD---AEKAPATCEN---FLQYVR-----------------------------DGF
ZP_00136576    GEIEVELD--PTKAPISVKN---FLEYVD-----------------------------SGY
NF01760157     GNIEIELF---EDDMPVTAGN---FRKLVE-----------------------------SGF


CSHUA          YKGSCFHRIIPGF-------MCQGGDFTRHNGT-------------------------
NP_839944      YKGSCFHRIIPGF-------MCQGGDFTRHNGT-------------------------
NP_115861      RDLGSLQPPPPGF----K--QVFCLSLP-RTG-------------------------
NP_570981      YNGCIFHRNIKGF-------MVQTGDPT-GTG-------------------------
NP_057143      YNGTKFHRIIKDF-------MIQGGDPT-GTG-------------------------
CSHUB          YKNSKFHRVIKDF-------MIQGGDFTRGDGT-------------------------
366681         FKGSSFHRIIPQF-------MCQGGDFTNHNGT-------------------------
A57545         FKNSIFHRVIPDF-------VCQGGDITKHDGT-------------------------
A41581         YKGSTFHRVIPSF-------MCQAGDFTNHNGT-------------------------
A54204         YKGSKFHRVIKDF-------MIQGGDITTGDGT-------------------------
364705         YDGTIFHRSIRNF-------VIQGGDPT-GTG-------------------------
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O38552          YNGHTFHRIIKGF-------MIQTGDPT-GTG-------------------------
NP_624311       YNYCLIHN------VQR-DFIIQTGDPTGTGR-------------------------
G2708309        YKGSTFHRVIKDF-------MIQGGDFVNGDGT-----------------------
A45981          FKGCPFHRIIKKF-------MIQGGDFSNQNGT-----------------------
J40763          YKSCLFHRVVKDF-------MVQGGDFSEGNGR-----------------------
A47328          YKGSTFHRVVKNF-------MIQGGDFSEGNGK-----------------------
XP_531396       YKGSCFHRIIPGF-------MCQGGDFTCHNGT-----------------------
XP_525294       FKGFCFHRIIPGF-------MYQGGDFTRHNGT-----------------------
XP_523512       YKGSCFHRIIPGF-------MCQGGGFTCHNGT-----------------------
XP_507866       YKGSTFHRVIPSF-------MCQAGDFTNHNGT-----------------------
XP_517783       -----FHRIIPGF-------MYQGGDCTQHNGT-----------------------
XP_517773       -----FHRIIPRF-------MCQGGDFTHHNGT-----------------------
XP_526904       YKCSCLHRIIPGF-------ICQGDGFTRHNGT-----------------------
XP_516556       CKGSCFHRIIPGF-------VCQGGDFTCHNGT-----------------------
XP_526001       ---------------------NFTSHNGT---------------------------
XP_516021       YNGCIFHRNIKGF-------MVQTGDPT-GTG-------------------------
XP_515886       YKSCLFHRVVKDF-------MVQGGDFSEGNGR-----------------------
XP_525218       -------EIIPGS-------LCQGGDFTRHKGT-----------------------
XP_507684       YKGSCFHRIIPGF-------MCQGGDFTRRNGT-----------------------
XP_524688       YKGSTFHRVIKDF-------MIQGGDFVNGDGT-----------------------
XP_513346       FKGSSFHRIIPQF-------MCQGGDFTNHNGT-----------------------
XP_524598       YKGSCFHRIIPGF-------MCRGGDFTHHNDT-----------------------
XP_515004       YDGTIFHRSIRNF-------VIQGGDPT-GTG-------------------------
XP_523437       -------------------------------------------------------
XP_520485       YKGSCFHKIIPGF-------MCQGGDFTHHNGT-----------------------
XP_519076       YKGSCFHRIIPGF-------MCQGGDFTRHNGT-----------------------
XP_527705       YKGPCFHRIIPAF-------MCQGGDFTHHNGT-----------------------
XP_527529       YNYCLIHN------VQR-DFIIQTGDPTGTGR-------------------------
XP_518678       IHMCRITDSGDPYAVQR-DFIIQTGDPTGTGR-------------------------
CSMSA           YKGSSFHRIIPGF-------MCQGGDFTRHNGT-----------------------
NP_598845       YKGSTFHRVIPAF-------MCQAGDFTNHNGT-----------------------
AAH58369        YNGTKFHRIIKDF-------MIQGGDPT-GTG-------------------------
A56861          YKNSKFHRVIKDF-------MIQGGDFTRGDGT-----------------------
A40047          YKGSIFHRVIKDF-------MIQGGDFTARDGT-----------------------
NKCR_MOUSE      YKGSTFHRVVKNF-------MIQGGDFSEGNGK-----------------------
AAH61645        YNGCVFHRNIKGF-------MVQTGDPT-GTG-------------------------
BAC41068        YDGTIFHRSIRNF-------VIQGGDPT-GTG-------------------------
BAC34686        FKGCPFHRIIKKF-------MIQGGDFSNQNGT-----------------------
BAB30711        YNYCLIHN------VQR-DFIIQTGDPTGTGR-------------------------
BAB25645        YKGSTFHRVIKDF-------MIQGGDFVNGDGT-----------------------
BAB23880        YKGSTFHRVIKDF-------MIQGGDFVNGDGT-----------------------
NF00527760      FKNSIFHRVVPDF-------ICQGGDITKYNGT-----------------------
NF01138503      YNGHTFHRIIKGF-------MIQTGDPT-GTG-------------------------
NF00510830      FKGSSFHRIIPQF-------MCQGGDFTNHNGT-----------------------
NF00510932      YNGTKFHRIIKDF-------MIQGGDPT-GTG-------------------------
NF01595779      YKGSFFHRITPEF-------MCQGGDFTRHNGT-----------------------
NF02014914      YKGSSFHRIIPGF-------MCQGGDFTRHNGT-----------------------
NF01930249      YKGSSFHGSTPGF-------TCQGGDFTRHNGT-----------------------
NF01929278      YKGSSFHRIIPGF-------MCQGGDFTRHNGT-----------------------
NF00523006      YKGSSFHRIIPGF-------MCQGGDFTRHNGT-----------------------
NF00508381      YKGSSFHRIIPGF-------MCQGGDFTRHNGT-----------------------
NF01215170      YNGCVFHRNIKGF-------MVQTGDPT-GTG-------------------------
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CSRTA          YKGSSFHRIIPGF------MCQGGDFTRHNGT-------------------------
NP_783638      YNGCVFHRNIKGF------MVQTGDPT-GTG-------------------------
NF01612782     FKGCPFHRIIKKF------MIQGGDFSNQNGT-------------------------
NF01612825     FKGSSFHRIIPQF------MCQGGDFTNHNGT-------------------------
NF01607941     FKGCPFHRIIKKF------MIQGGDFSNQNGT-------------------------
NF01607846     YKGSFLHRIIPGF------MCQGGNVICHNDT-------------------------
NF01609144     YKGSIFHRVIKDF------MIQGGDFTARDGT-------------------------
NF01608897     YKGSSFHRIIPGF------MCQGGKVTCHNGT-------------------------
NP_758443      YKGSTFHRVIPAF------MCQAGDFTNHNGT-------------------------
AAH61971       YKNSKFHRVIKDF------MIQGGDFTRGDGT-------------------------
G2828710       YKSCLFHRVVKDF------MVQGGDFSEGNGR-------------------------
338388         YKGSIFHRVIPNF------MCQGGDFTNHNGT-------------------------
AF132148       YNFNLFHT------VQQ-GFIAQTGDPSGAGD-------------------------
NP_611113      YNNVMFHRSIRNF------IVQGGDPT-GSG-------------------------
NP_611695      YKGSKFHRIIKDF------MIQGGDFTKGDGT-------------------------
NP_610590      YSGCVFIRNIKGF------IVQTGDPT-NTG-------------------------
NP_648697      YKGSPFHRVIPNF------MCQGGDFTNQNGT-------------------------
NP_648508      YKNTEFHRLVKG------FIVQGGDPNGDTGG-------------------------
NP_648338      YKGTKFHKIKRVF------VVQSGDVVKNDGS-------------------------
NP_476656      YVGSRFHRVVDRF------LVQGGDIV-NGDG-------------------------
NP_523874      YNNVVFHRIIRDF------MIQGGDPT-GTG-------------------------
NP_523773      YKGCSFHRVIPEF------MCQGGDFTNNGT-------------------------
NP_610224      YKGASFHRVIKDF------MIQGGDFVQGDGT-------------------------
NP_733246      YKGVIFHRVVKDF------MVQAGDFSAGNGT-------------------------
NP_611935      YNGHIFHRVIKGF------MVQTGDPT-GTG-------------------------
EAA03569       YKGSPFHRVKSLF------MSQGGDIVHFNGT-------------------------
EAA03948       YKGSKFHRVIRDF------MIQGGDFTKGDGT-------------------------
EAA04625       YKGSSFHRVIKDF------MIQGGDFVNGDGT-------------------------
EAA06299       YKGSIFHRVIPNF------MCQGGDFQNHNGT-------------------------
EAA08127       YKGIIFHRVVKDF------MIQSGDFSNGNGT-------------------------
EAA09839       YNGCLFHRSIRNF------MIQGGDPT-GVG-------------------------
EAA10133       YNGHLFHRVIKGF------MIQTGDPT-GTG-------------------------
EAL39647       YNYNLFHT------IQS-DFIAQTGDPTGAGD-------------------------
EAA13913       YNGNLFHRNIKGF------IVQTGDPT-GTG-------------------------
EAA13914       YKGSRFHRVIQKF------MIQGGDVV-SGDG-------------------------
EAA14200       YKGSTFHRIIPEF------MCQGGDFTANNGS-------------------------
EAA01474       YKGCSIFQCWENE------SIITGDFELNNGR-------------------------
KP_321072      YKGCSIFQCWENE------SIITGDFELNNGR-------------------------
KP_320182      YNGTQFHRIIRDF------MVQGGDPT-GTG-------------------------
KP_319131      YKGSRFHRVIQKF------MIQGGDVV-SGDG-------------------------
KP_311949      YKGIIFHRVVKDF------MIQSGDFSNGNGT-------------------------
CAI11739       YKGSIFHRVVPNG------WIQGGDISPEKKG-------------------------
AAQ91263       YKGSGFHRVIPQF------MCQGGDFTNHNGT-------------------------
NP_001004626   YKGSVFHRIIPEF------MCQGGDFTNHNGT-------------------------
NP_001002065   FKGCPFHRIIKSF------MIQGGDFSNQNGT-------------------------
NP_957499      YKGCTFHRVIKDF------MIQGGDFVNGDGT-------------------------
AAQ94596       YKGCTFHRVIKDF------MIQGGDFVNGDGT-------------------------
NP_998184      YKGSKFHRVIKDF------MIQGGDFTRGDGT-------------------------
NP_001002146   YNGCIFHRNIKGF------IVQTGDPT-GTG-------------------------
AAQ91264       YKGSSFHRVIPGF------MCQGGDFTNHNGT-------------------------
AAH59458       YKGSSFHRVIPGF------MCQGGDFTNHNGT-------------------------
AAH56814       YNYCLIHN------VQR-DFIIQTGDPTGTGR-------------------------
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AAH62863      YKGSSFHRVIPGF-------MCQGGDFTNHNGT-------------------------
NP_998629     YKGTPFHRIVKDF------MIQGGDFSEGNGR-------------------------
NP_957285     RYQYVKKKGYVRL-------HTNKGDPT-GTG-------------------------
NP_506749     FKGSKFHRIIPEF-------MIQGGDFTRGNGT-------------------------
NP_506561     FKGSKFHRIIPEF-------MIQGGDFTRHNGT-------------------------
NP_504522     YTGTILHQISTSKN------MIMGGDVLNGNGC-------------------------
NP_506751     FKGSKFHRIIPNF-------MIQGGDFTRGNGT-------------------------
NP_497745     YKQNEFHRIVKKF-------MIQGGDITEGDGR-------------------------
NP_499828     FKGSKFHRIIPEF-------MIQGGDFTEGNGT-------------------------
NP_497257     YVGSKFHRVIENF-------MIQGGDFTRGDGT-------------------------
NP_509506     YQGSVFHRVIKGF-------MIQGGDITHGNGT-------------------------
NP_503034     YEGSIFHRIIPKF-------MLQGGDFTKGDGT-------------------------
NP_501118     YNGTIFHRIIADF-------MIQGGDPT-GTG-------------------------
NP_496562     YKGTVFHRLVKN-------FILQGGDPTATGTGG-------------------------
NP_495855     YKNCTFHRVIKDF-------MIQGGDFCNGDGT-------------------------
NP_496337     YNNTKFHRLIKNF-------MLQGGDPT-GTG-------------------------
NP_495417     YNGCIFHRNIKDF-------MVQTGDPT-HSG-------------------------
NP_493378     YNGLTFHRVIKSF-------MIQTGDPS-GKG-------------------------
NP_492343     YNLNQFHS------IER-NYVAQTGDPTGTGK-------------------------
NP_493624     YPGSKFHRVIADF-------MIQGGDFTRGDGT-------------------------
T06073        FKGSKFHRVIPNF-------MCQGGDFTAGNGT-------------------------
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NP_567029     FKGSSFHRIIPGF-------MIQGGDFTRGDGR-------------------------
NP_201554     YNGVAFHRSIRNF-------MIQGGDPT-GTG-------------------------
NP_200679     YKGSSFHRIIPSF-------MLQGGDFTHGNGM-------------------------
NP_181407     YKECQFHRVIKDF-------MVQSGDFLKNDGS-------------------------
NP_191166     YKGSAFHRIIPGF-------MCQGGDFTRGNGT-------------------------
NP_171696     YDGTIFHRNIKGF-------MIQGGDPK-GTG-------------------------
NP_195222     YKGTPFHRIISGF-------VIQGGDIIHGDGK-------------------------
NP_195213     FKGSIFHRVIPGF-------MCQGGDFTAKNGT-------------------------
NP_196816     YKGSTFHRVIRDF-------MIQGGDFEKGNGT-------------------------
NP_188932     YKGSTFDHIVPDL-------MWCGGDIIFE-------------------------
NP_191762     YKGSSFHRIIKDF-------MIQGGDFTEGNGT-------------------------
NP_190046     YDNHLFHRVIRGF-------MIQTGDPL-GDG-------------------------
NP_180557     YKGSKFHRIIPSF-------MIQGGDFTHGNGM-------------------------
NP_181157     YDNVLFHRIVKDF-------IVQGGDPT-GTG-------------------------
NP_179251     YKGSSFHRVIPKF-------MCQGGDFTAGNGT-------------------------
NP_179709     FKGSSFHRVIPNF-------MCQGGDFTKGNGT-------------------------
AAK02067      YKGNRFHRVIKGF-------MIQGGDISANDGT-------------------------
P82869        YDGAKLNTVNQA-------VITEDGSGKV-------------------------
T05352        YKGSFFHRIMKGS-------SAQAGDFVNRNGT-------------------------
T49181        FKGSSFHRVIKGF-------MAQGGDFSNGNGT-------------------------
T05314        FDNTIFHRVIPG-------FLVQGGDPTGSGTGG-------------------------
CSZPA         YAGSTFHRVIPQF-------MLQGGDFTRGNGT-------------------------
E313994       YDGVIFHRVIPDF-------VIQGGDPT-GTG-------------------------
E1335804      YEGSIFHRVIPNF-------MIQGGDITKGDGT-------------------------
E1331567      YKNSTFHRIIQGF-------MIQGGDFVSGDGT-------------------------
S62327        YKGSRFHRVIKNF-------MLQGGDFTRGNGT-------------------------
S62590        YRNTIFHRNIARF-------MIQGGDPS-GTG-------------------------
E1294518      YDNTIFHRIIKNF-------MIQGGDPL-GDG-------------------------
T39728        YNFCPFYN------IQH-NYTCQTGDPLGPTG-------------------------
E1263915      YDGTIVHRVVPE-------FLIQGGDPTGTGMGG-------------------------
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630507          YKGVPFHRIIPDF-------MIQGGDTDLTNGF-------------------------
612324          FIGSTFHRVIPNF-------MVQGGDFTDGTGV-------------------------
657050          YKGNGFHRVVKNF-------MIQAGDIVFG-TQKD-----------------------
648567          YKGSIFHRVIKDF-------MCQFGDFTNFNGT-------------------------
CSBYC3          YRKTKINKVYPNK-------YIQGG-VVAPDVG-------------------------
663359          PER-DFDKILPNG-------AIEGSSVSSSSIE-------------------------
638324          YLNSIFHRVIPNF-------MIQGGDFTHRSGI-------------------------
TcCyP19         YAGSGFHRIIPQF-------MCQGGDFTNHNGT-------------------------
TcCyP20         YDGCLFHRCVTNA-------FVLTGDPT-GTG--------------------------
TcCyP21.1       YKGSIFHRVIRNF-------MIQGGDFTNFDGT-------------------------
TcCyP21.3       YKGSKFHRVIPQF-------MCQGGDFTNGNGT-------------------------
TcCyP24.3       YKGSVFHRIIPGF-------MIQGGDITKGNG--------------------------
TcCyP26         YKGIPFHRIIPGF-------IVQGGDILTKDGR-------------------------
TcCyP28         YKGCVFHRVIPGF-------MIQGGDITRGNGT-------------------------
TcCyP30         YKNSTFHRVHRGY-------LIQGGDVVSGQGT-------------------------
TcCyP35.1       YRGSTFFRILRGA-------WVMGGDISRDHNG-------------------------
TcCyP35.3       YRGTYFHKIIPAF-------CVQGGDLTMRVNKG------------------------
TcCyP40         YKGSTFHRIIAGF-------MIQGGDFTKHNGT-------------------------
TcCyP110        YNGLTFHRVVPGF-------MIQGGCPV-GDG--------------------------
AAT44353        YKGSGFHRVIPQF-------MCQGGDFTNHNGT-------------------------
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EAL37110        YIGSIFHRVIPGF-------MAQGGDFT-NGNG-------------------------
EAL36265        YNNCEFYK------IEK-DFIARTGRSKQYGN--------------------------
EAL35294        YKGSAIHRVIKDF-------VIQGGDFVNGDGT-------------------------
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AAQ15626        YKGSKFHRVIPQF-------MCQGGDFTSGNGT-------------------------
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AAK14937        YKGSTFHRVIPHF-------TCQGGDFTNHNGT-------------------------
CAC18541        YKGCTFHRIIKDF-------MVQGGDFVNGDGT-------------------------
A45000          YKGSKFHRIIPGF-------MCQGGDFTAGNGT-------------------------
Q9Y0F5          YKNTIFHKNIKGF-------IIQGGDPT-GTG--------------------------
J47811          YKGSKFHRVIPNF-------MLQGGDFTRGNGT-------------------------
J50388          YHNCCFHRVIPQF-------MCQGGDFVKGDGT-------------------------
L46884          YKGSVFHRIIPGF-------MCQGGDFTNGDGT-------------------------
M93420          YHNCCFHRVIPQF-------MCQGGDFVKGDGT-------------------------
J50389          YKGSTFHRVIKSF-------MIQGGDFTNHDGT-------------------------
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652758          YKDSIFHRVIPNF-------MIQGGDFTNFDGT-------------------------
E1203753        YANSPFHRVIPDF-------MCQGGDFTNGNGT-------------------------
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CAB58298        YKSSVFHRVIPNF-------MIQGGDFTRGNGT-------------------------
AAF69736        YQGSTFHRVIPGF-------MIQGGDFTKHNGT-------------------------
AAD46565        YKDSIFHRVIQNF-------MIQGGDFTNFDGT-------------------------
A53522          YKGSVFHRIIPDF-------MIQGGDFE-NHNG-------------------------
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NP_701389       YKNSPIHRIVTDF-------MFQGGDFNFGNG--------------------------
NP_701030       YDNTKFHKNIKGF-------AIQGGDPT-NTG--------------------------
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NF01065889       YNNCIFHRVIKHF-------MVQTGDPS-GDG-------------------------
NF00926916       YKNSIFHRIIPQF-------MCQGGDITNGNGS------------------------
G52760           YTNSIFHRIIPNF-------MAQGGDIT-NFNG------------------------
J10322           YKNTTFHRVIKDF-------MIQGGDFVNYNGS-------------------------
CAB39039         YKNSIFHRIIPQF-------MCQGGDITNGNGS------------------------
CAD51648         YDNTIFHRVIPDY-------IIQGGDPT-GTG-------------------------
NF01497907       YKNSIFHRIIPQF-------MCQGGDITNGNGS------------------------
NF01497552       YNNCIFHRVIKHF-------MIQTGDPG-GDG-------------------------
NF01497379       YTNSIFHRIIPNF-------MAQGGDIT-NFNG------------------------
NF01497199       YKNTIFHRVIKEF-------MIQGGDFINHNGS------------------------
NF01496968       YKNCKIEKIKKNK-------SIKCGYLRNKVHLGN------KNNN----------FEYIS
NF01495390       YRNTYIHKIYPGI-------GLIGGNVLNDK-E------------------------
NF01495324       YDNTIFHRVIPNF-------VIQGGDPT-GTG-------------------------
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NF01493918       YNKNKFFRIIPK-------FLIQTGDHTNTGLCNT----------------------
E316521          YKGSVFHRVITDF-------MAQGGDFTNFNGT------------------------
CAC35733         YNGALIYN------VQK-DY-LASIKSVNPAT-------------------------
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AF243140_1       YKGSCFHRIIPGF-------MCQGGDFTRHNGT------------------------
AF252388         YKGSTFHRVIPSF-------MCQAGDFTNHNGT------------------------
CSBOAB           YKGSCFHRIIPGF-------MCQGGDFTRHNGT------------------------
NF01922219       FKGSKFHRIIPGF-------MAQGGDFTKGNGT------------------------
NF01725587       YKGSPFHRVIPSF-------MCQGGDFTRQNGT------------------------
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CSHYAC           YKGSSFHRIIPGF-------MCQGGDFTRHNGT------------------------
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CSPGA            YKGSCFHRIIPGF-------MCQGGDFTRHNGT------------------------
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NF01951326       YKGCPFHRIIKQF-------MVQGGDFSNQNGT------------------------
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NF01915657      YTGCLFHRNIKGF-------MVQTGDPT-GTG------------------------
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AAH59741        YKNSGFHRIIPEF-------MCQGGDFTNHNGT-----------------------
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CYPR_CALVI      YVGSEFHRVISRF-------LIQGGDIV-NNDG-----------------------
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S63995          YKGSRFHRVIPNF-------MCQGGDFTNHNGT-----------------------
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KP_483749       YEKSYMHRDVVTH------VAVSPADYFITGSA------------------------
KP_482125       YDGMEIQRADG--------FVVQTGDPEGPA-----------------------EGF
KP_478742       YDGIKLKCASQA-------IIADNENGK-----------------------------
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Z32674          ARPSTVS--SPSS-------CSRAATSPAVTGT------------------------
UT0686          YKGSSFHRIIPDF-------MLQGGDFTRGNGT------------------------
CSCK            YKGSIFHRVIPQF-------MLQGGDFTNFNGT------------------------
NP_986490       YAGCPFHRVIPDF-------MLQGGDFTHGTGV------------------------
NP_985014       YKGVPFHRIIPDF-------MLQGGDTDLTNGF------------------------
NP_984799       FRGNRFHRVIKNF-------MVQAGDIMYG-MEG------------------------
NP_984183       YQGSLFHRVIKGF-------MCQFGDFTNGDGT------------------------
NP_982586       YKNTVFHRVVPEK-------YICGGKVLDY----------------------------
NP_982486       YINSTFHRVIPNF-------MIQGGDFTHGTGV------------------------
AAT09096        YKGSSFHRIIPQF-------MIQGGDFTQGNGR------------------------
YP_014938       YDGLIFHRVIPEF-------MIQGGDPD-GRG------------------------
NP_951950       YDGLIFHRVIKGF------MVQGGGMDE-NMQ------------------------
NP_935388       YVGSQFHRVIPGF------MAQGGGFDE-KMN------------------------
NP_907765       YDGLIFHRVIKRF-------MLQGGDPT-GTG------------------------
BAC91249        YVQDRFELDPIKLR-------EEMSNLHKRYIAD------------------------
BAC90551        YDGLVFHRVVPD-------FVIQGGDPKGNG--------------------------TGGF
BAC89441        YTGTAFNRFEKG-------YLVQVSDPQGKN-------------------------DGGY
BAC88914        YNNLAFHRVVSG-------FVIQGGDPLGNG--------------------------TGGF
AAV50868        YKYNRHINRTYEG-------CKFHNVLHNNYIVSG--------------------DIY
AAV82698        YNGTIFHRLVPGF------VIQGGGYDE-DFQ------------------------
AAV81872        YDGTIFHRIISNF------MVQGGGFEP-GMK------------------------
NP_736022       YNGLSFHRVIKDF-------MIQSGDPN-GDG------------------------
NP_734780       YDGIIFHRIIPDF-------MIQGGDPT-GTG------------------------
YP_085398       YDGVTFHRVIPGF-------VSQGGDPT-GTG------------------------
NP_643098       HLPAEFER-----------ASQGLDFQPLPDS------------------------
NP_641352       YNGLSFHRVIADF-------MIQGGCPE-GSG------------------------
BAB76758        YNGLEFTRSEES-------YVLQTGDPPGKE--------------------------QGF
YP_129479       YDGTIFHRVIKGF------MIQGGGFTV-DMQ------------------------
YP_129310       YNDTIFHRVIDGF------MVQGGGMSS-GMV------------------------
YP_129032       YVDTIFHRVIPGF------MAQGGGFDQ-EMK------------------------
YP_101389       YNGTLFHRVIKDF------MVQAGDPESKNAP------------------------
YP_087816       YDNTIFHRVIDGF------MIQGGGFEP-GMN------------------------
YP_087815       YNNTIFHRVIDGF------MIQGGGMEP-GMR------------------------
YP_076496       YDGVTFHRIIKDF------MIQGGDPT-GTG------------------------
AAT91289        YEGSSFHRVIPQF-------MLQGGDFTKGNGT------------------------
AAT91260        YEGSSFHRVIPQF-------MLQGGDFTKGNGT------------------------
NP_868477       FEGSAFHRVIPGF-------MLQGGDFTAGNGT------------------------
NP_867717       YDGLVFHRVIPNF-------MVQGGCPE-GSG------------------------
NP_867158       YDGLIFHRVVNGF-------VIQGGDPT-GTG------------------------
NP_865515       YDGMDFSQVVPNM------LALSGDPTGDGRG------------------------
NP_992233       YDNTIFHRVIDGF------MIQGGGFEP-GMS------------------------
NP_991569       YNNTIFHRVIPGF------MIQGGGFTA-DFK------------------------
NP_280624       YAGVSFHRIIEGF-------MIQGGDPT-GTG------------------------
BAC18575        YDDVVCHRLTTSG-----IYVLQCGDPS-GTG------------------------
BAC16839        YDGAVFHRVIDRF-------MIQGGDPT-GTG------------------------
BAB82272        YDGLTFHRIIPGF-------MIQGGCPE-GTG------------------------
BAB99042        YNDTVCHRITTSG-----IYVLQCGDPS-STG------------------------
BAB97427        YNGSVFHRVIDGF-------MIQGGDPT-GTG------------------------
BAC08372        YDGLPFTRAEES-------YVLQAGDPPGPE-------------------------VGF
BAC07690        YDGTIFHRVVREP---R-PFVVQGGDPQTKDPKVSPQLYG---------------TGSF
YP_072215       YNNTIFHRVIPGF------MIQGGGFTA-DFK------------------------
YP_069574       YDNTIFHRVIDGF------MIQGGGFEP-GMS------------------------
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NP_778719        YDGLNFHRVIANF-------MIQGGCPE-GSG-----------------------------
NP_245881        YDNTIFHRVIDGF------MIQGGGMDE-AMR-----------------------------
NP_245880        YNGTIFHRVIPGF------MIQAGGFEV-GMK-----------------------------
NP_354667        YDNVAFHRVIDG-------FMAQTGDVQYG-------------------------------
NP_354666        YDGVVFHRVIED-------FMAQTGDVKFGK------------------------------
NP_298502        YDRLNFHRVIANF-------MIQGGCPE-GSG-----------------------------
AAN39296         FKGSSFHRVIPGF-------MCQGGDFTNHNGT----------------------------
AAQ24380         YKGSTFHRVIPGF-------MCQGGDFIRGDGT----------------------------
ZP_00353225      YDGLTFHRVIDGF-------MIQGGCPR-GDG-----------------------------
ZP_00244808      YDGTVFHRVIKGF------MVQGGGFEP-GLK-----------------------------
ZP_00244807      YDGTIFHRVIDGF------MIQGGGFDK-DMK-----------------------------
ZP_00358245      YDGLTFHRVIKDF-------VIQGGDPT-GRG-----------------------------
ZP_00350273      YDNTIFHRVIDGF------MIQGGGFTP-DMQ-----------------------------
ZP_00129494      YENTIFHRVIKNF------MIQGGGVTM-RME-----------------------------
ZP_00130259      YDGTIFHRVMDGF------MVQGGGFTE-NMK-----------------------------
ZP_00136576      YDGTLFHRVIPGF------MVQTGGFSA-GMQ-----------------------------
NF01760157       YNGTIFHRVIKDF------VIQ-GGDPT-GTG-----------------------------


CSHUA            --------------GGK-SIYG-----------------------EKFEDENFIL-
NP_839944        --------------GDK-SIYG-----------------------EKFDDENLIR-
NP_115861        --------------RGGNSIWG-----------------------KKFEDEY----
NP_570981        --------------RGGNSIWG-----------------------KKFEDEY----
NP_057143        --------------RGGASIYG-----------------------KQFEDEL----
CSHUB            --------------GGK-SIYG-----------------------ERFPDENFKL-
566681           --------------GGK-SIYG-----------------------KKFDDENFIL-
A57545           --------------GGQ-SIYG-----------------------DKFEDENFDV-
A41581           --------------GGK-SIYG-----------------------SRFPDENFTL-
A54204           --------------GGV-SIYG-----------------------ETFPDENFKL-
564705           --------------TGGESYWG-----------------------KPFKDEF----
D38552           --------------MGGESIWG-----------------------GEFEDEFHS--
NP_624311        -------------GGESIFG-----------------QLYGDQASFFEAEKVPRI
G2708309         -------------GVA-SIYRG-----------------------PFADEN----
A45981           -------------GGE-SIYG-----------------------EKFEDEN----
J40763           -------------GGE-SIYG-----------------------GFFEDESFAV-
A47328           -------------GGE-SIYG-----------------------GYFKDENFIL-
XP_531396        -------------GGK-SIYG-----------------------EKFEDENFIL-
XP_525294        -------------GGK-SIYR-----------------------EKFGDENFIL-
XP_523512        -------------GGK-SIYE-----------------------EKLDDENFIL-
XP_507866        -------------GGK-SIYG-----------------------SRFPDENFTL-
XP_517783        -------------GGK-SIYG-----------------------EKFDDENFIL-
XP_517773        -------------GGK-SIYG-----------------------EKFHDENLIR-
XP_526904        -------------GGK-SVYG-----------------------EKFDDENFIL-
XP_516556        -------------GGT-SIYR-----------------------EKFDCKNFIL-
XP_526001        -------------GGK-SIYG-----------------------EKFDEENFIL-
XP_516021        -------------RGGNSIWG-----------------------KKFEDEY----
XP_515886        -------------GGE-SIYG-----------------------GFFEDESFAV-
XP_525218        -------------GDK-SIYG-----------------------EKFDYENLIR-
XP_507684        -------------GGK-SIYG-----------------------EKFEDENFIL-
XP_524688        -------------GVA-SIYRG-----------------------PFADEN----
XP_513346        -------------GGK-SIYG-----------------------KKFDDENFIL-
XP_524598        -------------GGK-SVHQ-----------------------EKFDDENFIL-
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KP_515004      --------------TGGESYWG-----------------------------KPFKDEFR---
KP_523437      ------------------------------------------------------KFEDETFIL-
KP_520485      --------------GSK-SIYG------------------------------EKFDDENFIL-
KP_519076      --------------GGK-SIYG------------------------------EKFEDENFIL-
KP_527705      --------------GGK-SIYG------------------------------EKFEDEKFIL-
KP_527529      ---------------GGESIFG------------------QLYGDQASFFEAEKVPRI
KP_518678      ---------------GGESIFG------------------QLYGDQASFFEAEKVPRI
CSMSA          --------------GGR-SIYG------------------------------EKFEDENFIL-
NP_598845      --------------GGR-SIYG------------------------------SRFPDENFTL-
AAH58369       --------------RGGASIYG------------------------------KQFEDEL----
A56861         --------------GGK-SIYG------------------------------ERFPDENFKL-
A40047         --------------GGM-SIYG------------------------------ETFPDENFKL-
NKCR_MOUSE     --------------GGE-SIYG------------------------------GYFKDENFIL-
AAH61645       --------------RGGSSIWA------------------------------KKFEDEY----
BAC41068       --------------TGGESFWG------------------------------KPFKDEF----
BAC34686       --------------GGE-SIYG------------------------------EKFEDEN----
BAB30711       ---------------GGESIFG------------------QLYGDQASFFEAEKVPRI
BAB25645       --------------GVA-SIYRG-----------------------------PFADEN----
BAB23880       --------------GVA-SIYRG-----------------------------PFADEN----
NF00527760     --------------GGQ-SIYG------------------------------DKFDDENFDL-
NF01138503     --------------MGGESIWG------------------------------GEFEDEFHS--
NF00510830     --------------GGK-SIYG------------------------------KKFDDENFIL-
NF00510932     --------------RGGASIYG------------------------------KQFEDEL----
NF01595779     --------------GCR-SIYG------------------------------EKFEDENFIL-
NF02014914     --------------GGR-SIYG------------------------------EKFEDENFIL-
NF01930249     --------------GGR-SIYG------------------------------EKFEGKNFIL-
NF01929278     --------------GGR-SIYG------------------------------ERFEDEDFIL-
NF00523006     --------------GGR-SIYG------------------------------EKFEDENFIL-
NF00508381     --------------GGR-SIYG------------------------------EKFEDENFIL-
NF01215170     --------------RGGSSIWA------------------------------KKFEDEY----
CSRTA          --------------GGK-SIYG------------------------------EKFEDENFIL-
NP_783638      --------------RGGSSIWG------------------------------KKFEDEY----
NF01612782     --------------GGE-SIYG------------------------------EKFEDEN----
NF01612825     --------------GGK-SIYG------------------------------KKFDDENFIL-
NF01607941     --------------GGE-SIYG------------------------------EKFEDEN----
NF01607846     --------------GGM-SLYG------------------------------EKFEDENVIL-
NF01609144     --------------GGM-SIYG------------------------------ETFPDENFKL-
NF01608897     --------------GGK-SIYG------------------------------EKFENDSFIL-
NP_758443      --------------GGK-SIYG------------------------------SRFPDENFTL-
AAH61971       --------------GGK-SIYG------------------------------ERFPDENFKL-
G2828710       --------------GGE-SIYG------------------------------GFFEDESFAV-
B38388         --------------GGK-SIYG------------------------------NKFPDENFEL-
AF132148       ---------------GGSSIWG------------------VVEGP--QKRFFEAEFLPKI
NP_611113      --------------SGGESIWG------------------------------KKFEDEF----
NP_611695      --------------GGR-SIYG------------------------------ERFEDENFKL-
NP_610590      --------------KNGQSIWG------------------------------QKFDDEF----
NP_648697      --------------GGR-SIYG------------------------------NKFPDENFEL-
NP_648508      -----------------ESIYG------------------------------QPFKDEFHSRL
NP_648338      ---------------SGESIYG------------------------------PVFDDENFELS
NP_476656      --------------TGSISIYG------------------------------DYFPDEDK---
NP_523874      --------------RGGASIYG------------------------------SEFADEL----
NP_523773      --------------GGK-SIYG------------------------------KKFNDENFNL-
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NP_610224        ---------------GVT-SIYGN------------------------TFGDEN----
NP_733246        ---------------GGE-SIYG-------------------------GTFEDESFEK-
NP_611935        ---------------TGGKSIWG-------------------------SDFKDEFVP--
EAA03569         ---------------GGESIYG-------------------------KTFEDENFTLL
EAA03948         ---------------GGR-SIYG-------------------------ERFADENFKL-
EAA04625         ---------------GVM-SIYGT------------------------PTFPDEH----
EAA06299         ---------------GGK-SIYG-------------------------NKFEDENFIL-
EAA08127         ---------------GGE-SIYG-------------------------GTFDDEEFTL-
EAA09839         ---------------NGGTSAWG-------------------------KKFADEI----
EAA10133         ---------------TGGQSIWG-------------------------GEFKDEFCS--
EAL39647         --------------GGSSVWG--------------ILEGA--EKRYFEGESVPKI
EAA13913         --------------KGGQSIWK-------------------------RKFEDEF----
EAA13914         --------------HGAISMYG-------------------------KYFDDE-----
EAA14200         ---------------GGK-SIYG-------------------------KKFADENFIL-
EAA01474         --------------GGR-------------------------------SVFEEGFFMP-
XP_321072        --------------GGR-------------------------------SVFEEGFFMP-
XP_320182        --------------RGGQSIYG--------------------------ATFADEI----
XP_319131        --------------HGAISMYG-------------------------KYFDDE-----
XP_311949        ---------------GGE-SIYG-------------------------GTFDDEEFTL-
CAI11739         --------------TGGESIYG-------------------------PTFEDENFVI-
AAQ91263         --------------GGK-SIYG-------------------------NKFEDENFTL-
NP_001004626     --------------GGK-SIYG-------------------------KKFNDENFKL-
NP_001002065     ---------------GGE-SIYG-------------------------DKFEDEN----
NP_957499        --------------GIC-SIYRG------------------------PFADEN----
AAQ94596         --------------GIC-SIYRG------------------------PFADEN----
NP_998184        --------------GGK-SIYG-------------------------DRFPDENFKL-
NP_001002146     --------------KGGTSIWG-------------------------RKFEDEF----
AAQ91264         --------------GGK-SIYG-------------------------NKFADENFNL-
AAH59458         --------------GGK-SIYG-------------------------NKFADENFNL-
AAH56814         -------------GGESVFC--------------KLYGDQARFFESEKMPRI
AAH62863         --------------GGK-SIYG-------------------------NKFADENFNL-
NP_998629        --------------GGE-SIYG-------------------------GFFEDGSFSM-
NP_957285        --------------TGGESFWG-------------------------KPFKDEF----
NP_506749        --------------GGE-SIYG-------------------------EKFPDENFKE-
NP_506561        --------------GGE-SIYG-------------------------NKFKDENFDL-
NP_504522        --------------GRCAPVSR-------------------------KLFQENNFSS-
NP_506751        --------------GGE-SIYG-------------------------EKFPDENFKE-
NP_497745        --------------GGF-SIYG-------------------------RYFDDEKFKL-
NP_499828        --------------GGE-SIHG-------------------------EKFDDENFKE-
NP_497257        --------------GGR-SIYG-------------------------ERFEDENFKL-
NP_509506        --------------GGY-SIYG-------------------------RTFDDENLAL-
NP_503034        --------------GGK-SIYG-------------------------TKFDDENFTL-
NP_501118        --------------RGGASIYG-------------------------DKFSDEI----
NP_496562        ----------------ESIYG-------------------------KPFKDEIHQRL
NP_495855        --------------GLM-SIYGS------------------------KFRDEN----
NP_496337        --------------HGGESIWD-------------------------KPFSDEF----
NP_495417        --------------KGGESIWG-------------------------GPFEDEF----
NP_493378        --------------TGGESIWG-------------------------EDFEDEFHP--
NP_492343        -------------GGESVYS--------------DMYGE--QGRYFEREDLPKM
NP_493624        --------------GGR-SIYG-------------------------EKFADENFKL-
T06073           --------------GGE-SIYG-------------------------SKFEDENFER-
NP_175776        ----------------GDSIY-----------------KFLYGEQA-RFYKDEIHLDL
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NP_567029      ------------------GGE-SIYG-----------------------DKFADENFKL-
NP_201554      ------------------KGGESIWG-----------------------KPFKDEP----
NP_200679      ------------------GGE-SIYG-----------------------EKFADENFKL-
NP_181407      ------------------GCM-SIYGH----------------------KFEDEN----
NP_191166      ------------------GGE-SIYG-----------------------SKFEDENFKL-
NP_171696      ------------------KGGTSIWG-----------------------KKFNDEI----
NP_195222      ------------------SSD-SIYG-----------------------GTFPDENFKI-
NP_195213      ------------------GGE-SIYG-----------------------AKFKDENFIK-
NP_196816      ------------------GGK-SVYG-----------------------RTFKDENFKL-
NP_188932      -----------------NEPIHS-------------------------EELDDEYFILN
NP_191762      ------------------GGI-SIYG-----------------------AKFEDENFTL-
NP_190046      ------------------TGGQSIWG-----------------------REFEDEFHK--
NP_180557      ------------------GGE-SIYG-----------------------QKFADENFKL-
NP_181157      ------------------RGGESIYG-----------------------SKFEDEI----
NP_179251      ------------------GGE-SIYG-----------------------SKFKDENFIK-
NP_179709      ------------------GGE-SIYG-----------------------AKFEDENFER-
AAK02067       ------------------GGE-SIYG-----------------------LKFDDENFEL-
P82869         ------ESVSVPLEVMP-SGQFEP------------------------LYRTPLSVQD
T05352         ---------------AGESIYA--------------------------GKFP-------
T49181         --------------GGESIYG---------------------------GKFSDENFRLD
T05314         ---------------DSIYG----------------------------GVFADEFHSRL
CSZPA          --------------GGK-SIYG--------------------------EKFPDEN----
E313994        --------------RGGTSIYG--------------------------DKFDDEI----
E1335804       --------------GGK-SIYG--------------------------SRFPDENFKL-
E1331567       --------------GSA-TIFNS-------------------------RTFPDEN----
S62327         --------------GGE-SIYG--------------------------EKFEDEN----
S62590         --------------RGGQSIWG--------------------------KPFKDEF----
E1294518       --------------TGGESIWK--------------------------KDFEDEISP--
T39728         --------------DGGRCVWN----------------VLN---KGTRFFKAEFNPSL
E1263915       ---------------ESIYG---------------------------EPFAVETHPRL
CSBY           --------------GGK-SIYG--------------------------GKFPDEN----
S30507         --------------GGK-SIYG--------------------------SKFADEN----
S12324         --------------GGK-SIYG--------------------------DTFPDENFTL-
S57050         --------SSSSSVGKGGCSIYADKEEVKTD-----------DESFCYGNFEDENLGE-
S48567         --------------GGE-SIYD--------------------------EKFEDEN----
CSBYC3         ---------------PFTVYG--------------------------PKFDDENFYL-
S63359         ---------------ETEMLA--------------------------PKLPEENHSL-
S38324         --------------GGK-SIFG--------------------------NTFKDENFDV-
TcCyP19        --------------GGR-SIYG--------------------------EKFADESFAG-
TcCyP20        --------------KGGESVFAPEQ-----------------------RYFDDEG----
TcCyP21.1      --------------GGK-SIYG--------------------------TRFDDENLKI-
TcCyP21.3      --------------GGE-SIYG--------------------------MKFPDESFAG-
TcCyP24.3      --------------TGGCSIYG--------------------------VRFKDESFDSK
TcCyP26        --------------GNVSVFG---------------------------FPFLDESFKGK
TcCyP28        --------------GGE-SIYG--------------------------MNFRDESFSG-
TcCyP30        --------------EQLSIYG---------------------------ETFDAPDEVS-
TcCyP35.1      --------------NGGYSCYG--------------------------RYFPNESYAIP
TcCyP35.3      --------------ANHFSSFG--------------------------WGWFSDENKRR-
TcCyP40        --------------GGVSIYG---------------------------ERFDDENFDVP
TcCyP110       --------------SGGK--------SVF-------------------GERFEDEGMNAM
AAT44353       --------------GGK-SIYG--------------------------NKFPDENFQL-
EAL37431       --------------GGE-SIYG--------------------------SKFRDENFVY-
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EAL37232       ---------------KGGESIYG-----------------------RYFDDEI----
EAL37110       ---------------TGGKSIYG-----------------------DSFEDEN----
EAL36265       -----------------SSLYQ---------------LLNNQKKDSISLELETTPKL
EAL35294       -------------GSI-SIYNT------------------------SYFNDEN----
J68268         -------------GGK-SIYG-------------------------EKFPDESFAG-
J68269         -------------GGK-SIYG-------------------------AKFEDESFAG-
AAQ15626       -------------GGE-SIYG-------------------------LKFPDESFAG-
AAB07896       -------------CGK-SIYG-------------------------EKFPDESFAG-
AAK14937       -------------GGK-SIYG-------------------------AKFEDENFTL-
CAC18541       -------------GSC-SIYGG------------------------SKFSDEN----
A45000         -------------GGK-SIYG-------------------------SKFEDENFNH-
Q9Y0F5         ---------------KGGESIYG-----------------------RYFDDEI----
J47811         -------------GGQ-SIYG-------------------------EKFPDENFQE-
J50388         -------------GGK-SIYG-------------------------RKFDDENIQL-
L46884         -------------GGK-SIYG-------------------------NKFKDEN----
M93420         -------------GGK-SIYG-------------------------RKFDDENFQL-
J50389         -------------GGF-SIYG-------------------------ERFPDENFKL-
G992633        -------------GGF-SIYG-------------------------DRFPDENFKL-
E323073        -------------GGK-SIYG-------------------------RKFDDENFQL-
S52758         -------------GGK-SIYG-------------------------EKFADENLKV-
E1203753       -------------GGK-SIYG-------------------------SKFADESFLG-
CAB58290       ---------------ASEVDAA-----------------------AQSPDDVPLL-
CAB58298       -------------GGE-SIYG-------------------------TTFRDESFSG-
AAF69736       --------------GGVSIYG-------------------------EKFEDENFTIP
AAD46565       -------------GGK-SIYG-------------------------EKFADENLNV-
A53522         -------------TGGHSIYG-------------------------RRFDDEN----
NP_702112      ----------------EYAFS------------------------SPFKNEYNSRL
NP_701512      --------------GLSIYG-------------------------KKFPDENFDM-
NP_701389      ------------YGGESIYG-------------------------QYFRNEKFIYK
NP_701030      ------------KGGQSIYG-------------------------KYFEDEF----
NF01067443     NSLKNKMKNSKKNKYEKVECIYG----------------------NYYNKEYSKR-
NF01067965     -------------GCI-SIYG-------------------------EHFDDEN----
NF01065889     -------------TGGESIWG-------------------------NEFEDEFFD--
NF00926916     -------------GGE-SIYG-------------------------RSFTDENFNM-
S52760         -------------TGGLSIYG-------------------------KKFEDEN----
J10322         -------------GCI-SIYG-------------------------EHFDDEN----
CAB39039       -------------GGE-SIYG-------------------------RSFTDENFNM-
CAD51648       -------------KGGKSIYG-------------------------EYFEDEI----
NF01497907     -------------GGE-SIYG-------------------------RSFTDENFKM-
NF01497552     -------------TGGESIWG-------------------------SEFEDEFFD--
NF01497379     -------------TGGLSIYG-------------------------SRFEDEN----
NF01497199     -------------GSL-SIYG-------------------------EKFDDEN----
NF01496968     NNLLTN-----KNKYEKIECIYG----------------------ETYNKEYSQR-
NF01495390     --------------GLSIYG-------------------------KKFPDENFDM-
NF01495324     -------------KGGKSIYG-------------------------EYFEDEI----
NF01493974     ------------YGGESIYG-------------------------QYFRNEKFIYK
NF01493918     -------TLLLHEQNIYNEYAFK-----------------------EPFKNECNSRL
E316521        -------------GGK-SIYG-------------------------EKFADEN----
CAC35733       ----------------TVY--------------------------NQPYFEDQINPLL
J47812         -------------GGE-SIYG-------------------------EKFEDENFKE-
J47813         -------------GGE-SIYG-------------------------EKFPDENFQE-
G2624966       -------------GGK-SIYG-------------------------TKFADEA----
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E1317902       --------------KGGDSIWG-----------------------KPFKDEI----
E1319851       --------------KGGDSIWG-----------------------KPFKDEV----
G3057040       --------------KGGDSIWG-----------------------KPFKDEF----
AAB81959       --------------GGK-SIYG-----------------------EKFEDENFIL-
AF023860       --------------GGK-SIYG-----------------------EKFEDENFIL-
AAB81961       --------------GGK-SIYG-----------------------EKFEDENFIL-
AAF22215       --------------GGK-SIYG-----------------------EKFEDENFLL-
AF243140_1     --------------GGK-SIYG-----------------------EKFDDENFIL-
AF252388       --------------GGK-SIYG-----------------------SRFPDENFTL-
CSBOAB         --------------GGK-SIYG-----------------------EKFDDENFIL-
NF01922219     --------------GGK-SIYG-----------------------AKFADENWNH-
NF01725587     --------------GGK-SIYG-----------------------EKFADENFTL-
NF01897292     --------------TGSISIYG-----------------------DTFDDEN----
CSHYAC         --------------GGR-SIYG-----------------------EKFEDENFIL-
NF00071027     --------------GGK-SIYG-----------------------EKFEDENFIL-
NF01951405     --------------TGGESYWG-----------------------KPFKDEF----
NF01059378     --------------GGK-SIYG-----------------------EKFEDENFIL-
NF01105745     --------------GGE-SIYG-----------------------EKFPDENFLL-
NF00495096     --------------GGR-SIYG-----------------------EKFEDENFIL-
NF01053198     --------------GGE-SIYG-----------------------AKFADENFIK-
CSPGA          --------------GGK-SIYG-----------------------EKFDDENFIL-
NF01950932     --------------KGGTSIWG-----------------------KKFEDEF----
NF01951326     --------------GGE-SIYG-----------------------EKFEDEN----
NF00909389     --------------GGE-SIYG-----------------------AKFADENFVK-
NF01286555     --------------GGE-SIYG-----------------------AKFADENFVK-
NF01737225     --------------GGE-SIYG-----------------------MKFKDENFTK-
NF01590839     --------------SGG-----------P----------------GYRFPDEIVEDL
AAH51602       --------------RGGASIYG-----------------------KQFEDEI----
AAT69672       --------------GGK-SIYG-----------------------NKFADENFTL-
AAH54186       --------------GGK-SIYG-----------------------NKFADENFTL-
AAH54168       --------------GGK-SIYG-----------------------DRFPDENFKL-
NF01208049     --------------TGGESFWG-----------------------KPFKDEI----
NF01844632     --------------GGE-SIYG-----------------------GFFEDENFSV-
NF01844615     ---------------ESVFG-----------------------KPFRDEFHSRL
NF01915773     --------------RGGASIYG-----------------------KQFEDEI----
NF01915657     --------------KGGQSIWG-----------------------RKFEDEY----
NF01557564     --------------GGE-SIYG-----------------------EKFEDEN----
AAH41536       --------------GGK-SIYG-----------------------EKFADENFTL-
AAH85963       --------------GGE-SIYG-----------------------GFFEDESFAV-
AAH64250       --------------GVA-SIYRG----------------------PFADEN----
AAH61335       --------------GGE-SIYG-----------------------EKFEDEN----
AAH59741       --------------GGK-SIYG-----------------------NKFADENFQL-
AAH67931       --------------GGE-SIYG-----------------------GFFEDENFSI-
AAH44993       --------------TGGESFWG-----------------------KPFKDEI----
A40516         --------------GGK-SIYG-----------------------DRFPDENFKL-
CYPB_BOVIN     --------------GGK-SIYG-----------------------ERFPDENFKL-
AAR19276       --------------GGK-STYG-----------------------EKFADENFIL-
A46579         --------------GGE-SIYG-----------------------EKFEDEN----
AAV40687       --------------GGE-SIYG-----------------------EKFEDEG----
NF01637248     --------------GGK-SIYG-----------------------EKFADEN----
CYPR_BOVIN     --------------GGR-SIYG-----------------------DKFEDENFDV-
CYPR_CALVI     --------------TGSTSIYG-----------------------DFFQDE-----
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E1317906     --------------HGGESIWG------------------------KPFTDQF----
AAB87888     --------------GGK-SIYG------------------------NKFPDENFLL-
AAB87889     --------------GGK-SIYG------------------------NKFADENFQL-
Q9XZZ5       --------------GGK-SIYG------------------------EKFQDENFTL-
563995       --------------GGK-SIYG------------------------TKFEDENFQL-
G1703696     --------------GGK-SIYG------------------------EKFADENFTL-
J36797       --------------GGK-SIYG------------------------NKFEDENFKL-
AF017738     ----------------ESIYT------------------------TSFKNEFHQRL
L37292       --------------GGE-SIYG------------------------GMFDDEEFVM-
AAS01736     --------------GGE-SIYG------------------------AKFADENFVR-
AAO61985     --------------VGGEILYS------------------------KTFIDFNIIF-
CAC80550     --------------GGE-SIYG------------------------AKFADENFIK-
AAO63777     --------------GGE-SIYG------------------------AKFADENFVK-
353522       --------------GGE-SIYG------------------------EKFADENFSY-
E280557      --------------YGGLSIYG------------------------KYFNDEN----
J70827       --------------GGE-SIYG------------------------GMFDDEEFVM-
J70884       --------------GGE-SIYG------------------------GMFDDEEFVM-
J55771       --------------TGSISIYG------------------------DMFEDEN----
D1024669     --------------GGR-SIYG------------------------ERFPDENFKL-
227879       --------------GGE-SIYG------------------------NKFADENFK--
AAD48910     --------------GGE-SIYG------------------------KKFNDENFKI-
AAO51811     --------------GRT-SIYGE-----------------------R-FADEN----
AAF76472     --------------KGGTSIWG------------------------KKFNDEI----
AAP80861     --------------GGE-SIYG------------------------TKFGDENFKL-
AAP73848     --------------GCT-SIYGT-----------------------KFDDEN----
BAB62329     --------------RGGESIYG------------------------AKFEDEI----
AAL75728     --------------GGESALDG------A----------------ARHFPDEGFAV-
548017       --------------GGE-SIYG------------------------EKFADEVFKF-
548018       --------------GGE-SIYG------------------------DRFADENFKL-
BAD53622     --------------GGE-SIYG------------------------TKFADENFKI-
BAD53621     --------------GGE-SIYG------------------------TKFADENFKI-
BAD53620     --------------GCD-SIYG------------------------GMFPDENFKI-
XP_507188    --------------GEVQPPTGLVRN--------------------AETIDPKAFEL-
XP_483750    --------------TGGQSIWG------------------------REFEDEFHK--
XP_483749    --------------DGHLKFWKKKPAG----------------IEFAKHFRSHLSPIE
XP_482125    IDPSTGKVRTIPLELMV-DGDKAP---------------------VYGETLEELG
XP_478742    ------KGYTVPLEVMP-AGQFEP---------------------LYRTPLSIQD
XP_478741    ------KGYTVPLEVMP-AGQFEP---------------------LYRTPLSIQD
NP_385690    -----TGGEQFNPSRAGMGGSSKP---------------------DLKAEFSDVS
NP_385689    -----DMKDGFQGDRAGTGGSSKP---------------------NLPAEFSDVP
NP_349373    --------------MGG-----------P----------------GYAIKGEFSSNG
BAD45990     -------------SFPGYSFFLVFLSLHYFVHIQNYLFSRFLSGAMATRFFDDEIHPEL
BAD45991     --------------GDSVY------------------KFLYGDQA-RFFDDEIRPDL
NP_908419    -----------AVTERLAAEMG------------------------AVRAQCGGER
NP_919903    --------------PGE--VDG------------------------QLTKKRIPAK
BAD35839     --------------GGE-SIYG------------------------LKFEDENFVL-
AAU87301     --------------GGE-SIYG------------------------EKFADENFVK-
CAG90469     --------------GGK-SIYG------------------------GKFDDENFEL-
CAG88330     --------------GGK-SIYG------------------------EKFRDEN----
CAG88054     --------------TDGDAINS----------------FGDVNVNNTTVKQNKYLPVP
CAG86818     --------------TGGESYWG------------------------GYIKDEFNS--
NF01109982   --------------GGK-SIYG-----------------------EKFADENFQL-
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NF00686348      ------------------GSGGSSLP------------------------NLPAEFNDMP
NF00686217      ------------------GSGGSSLP------------------------NLPAEFNDMP
NF02138644      --------------GGE-SIYG----------------------------AKFADENFKN-
NF00926921      --------------GGK-SIYG----------------------------NKFEDENFKL-
NF00909931      --------------GGE-SIYG----------------------------AKFADENFVK-
NF00956595      --------------GGK-SIYG----------------------------RKFDDENFVL-
NF02035209      --------------GGE-SIYG----------------------------SKFEDQNFER-
NF01329591      --------------ERA-----------T---------------------KSPIINEANNG-
CAG86678        -----------------PADTKINTTNG----------------------YISKEFQYSNARG-
CAG86274        -----------------YGGHSVYNN------------------------KGRFRDEN----
CAG85447        -----------------------------------------------ATLKLKDEFHSRL
CAG85287        --------------------GGR-SIYG----------------------QKFSDEN----
CAG84900        --------------------GGE-SIYG----------------------EKFEDEN----
CAG84822        --------YPNLNVGKGGISIYNNEA-----------------------FEDENLSEP
CAG84723        --------------GSI-SIYGG---------------------------NTFDDE----G
CAG79895        --------------GGE-SIYG----------------------------RKFPDENFQL-
CAG78939        --------------SGGESIFG----------------------------KTFRDECG-T-
CAG82238        --------------GGE-SIYG----------------------------EKFPDEA----
CAG81980        --------------GGK-SIYG----------------------------AKFPDEN----
CAG81971        --------------GGK-SIYG----------------------------QKFPDEN----
CAG81844        --------------GTV-SIFGS---------------------------ASFPDERTISG
CAG84141        -------------------------------------------------SYPKLKDEPHTRI
CAG84091        -------------DGTGGTSIYGDQ----------------------FDDENFVHN
CAG83821        ---------------DGEFPIES---------------------------PGWCDLS----
CAG76968        --------------QKA-----------P---------------------NAPIKNEADNG-
CAG62671        --------LDSDKVGLGGCSIYATEEEIKDDT-----------KELQCHGLFEDENVGE
CAG76052        --------------QKE-----------T---------------------NATIKNEANNG-
CAG59915        --------------GGK-SIYG----------------------------NKFADEN----
CAG58658        --------------GGK-SIYG----------------------------GKFPDEN----
G3777556        --------------GGK-SIYG----------------------------EKFEDENFTL-
AAF65770        --------------GGE-SIYG----------------------------AKFADENFIK-
BAA25755        --------------GGE-SIYG----------------------------SKFADENFIK-
CSTO            --------------GGE-SIYG----------------------------AKFNDENFVK-
CSRP            --------------GGE-SIYG----------------------------MKFKDENFVK-
CSZM            --------------GGE-SIYG----------------------------EKFPDEKFVR-
CYPH_ALLCE      --------------GGE-SIYG----------------------------AKFKDENFIK-
AAG01536        --------------GGE-SIYG----------------------------AKFADESFRG-
AAB51386        --------------GEEKSIYG----------------------------AKFKDENFVK-
G54833          --------------GGE-SIYG----------------------------AKFADENFVK-
K85185          --------------GGE-SIYG----------------------------AKFADENFIK-
Y08273          --------------GGE-SIYG----------------------------AKFADENFVK-
Y08320          --------------GGE-SIYG----------------------------AKFADENFVK-
E1226445        --------------GAE-SIYG----------------------------AKFADENFIK-
L32095          --------------GGV-SIYG----------------------------SKFEDESFDL-
CAA10766        --------------GCI-SIYGS---------------------------KFEDEN----
AAF69796        --------------GGK-SIYG----------------------------NKFADEE----
AAF69795        --------------GGK-SIYG----------------------------NKFADEN----
CSNCM           --------------GGK-SIYG----------------------------EKFADEN----
NF01287451      ------------SDGGQSIWG-----------------LLSGD-PSEKTFPALFHPKL
NF01527836      -----------ENPKGGRSIYG----------------------------PTFEDEI----
NF01488902      --------------RGGSSIYG----------------------------EKFEDEI----
NF00648058      --------------GGE-SIYG----------------------------AKFEDEN----
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NF01487278    --------------------GGK-SIYG-------------------------DKFPDENFKL-
NF01486260    --------------------TGGESIWG------------------------KEFEDEFS---
NF00904102    --------------------GGK-SIYG-------------------------DKFPDENFKL-
NF01484914    ---------------SDGGQSIWG---------------LLSGD-PSEKTFPALFHPKL
NF01484255    --------------------GST-CIYGT------------------------KSFADEN----
NF01483993    ------------------ESIYDNGALSGDLDPWPMDQR-RGKNAGPHGVNFKDEFHSRL
NF01533203    --------------------GGE-SIYG-------------------------SKFADENFVK-
NF01483647    ----------------RGGSSIWG----------------------------KNFEDEF----
571849        --------------------GGK-SIYG-------------------------EKFADEN----
J17900        --------------------GGK-SIYG-------------------------ERFADENFKL-
NF00873669    --------------------GGK-SIYG-------------------------AKFADEN----
NF01527595    --------------------GGK-SIYG-------------------------AKFADEN----
NF01539217    --------------------GGK-SIYG-------------------------EKFADEN----
D1035365      --------------------GGK-SIYG-------------------------NKFEDENFKL-
YP_116397     ---------------QKG-----------T-----------------KAPIQNEAANG-
YP_119877     ---------------KGG-----------P-----------------GYVFGNEYPTDQ
CAD25897      ----------------SGSISIYN----------------------AEPFSDEN----
CAD26352      --------------------GGR-SIYG-------------------------EKFPDEN----
AAD17998      --------------------GGK-SIYG-------------------------AKFKDENFKL-
G2959712      --------------------GGE-SIYG-------------------------EKFPDENFKH-
CSNCC         --------------------GGK-SIYG-------------------------EKFADEN----
AJ006689      --------------------GGR-SIYG-------------------------DKFADEN----
AAF28343      ----------------RGGESIYG----------------------------KKFEDEI----
AAD50375      --------------------GGE-SIYG-------------------------RTFNDEN----
AAK21908      --------------------GGE-SIYG-------------------------DKFADENFSL-
AAG13968      --------------------GGK-SVYG-------------------------EKFADEN----
BAB58884      --------------------GGK-SVYG-------------------------EKFADEN----
E1363908      --------------------GGK-SIYG-------------------------AKFADEN----
AAD16142      --------------------GGR-SIYG-------------------------EKFADEN----
G1764137      --------------------GGE-SIYG-------------------------KKFEDEN----
Z32674        --------------------GGK-SIYG-------------------------EKFADEN----
JT0686        --------------------GGK-SIYG-------------------------EKFADEN----
CSCK          --------------------GGK-SIYG-------------------------TKFADEN----
NP_986490     --------------------GGK-SIYG-------------------------GKFPDEN----
NP_985014     --------------------GGK-SIYG-------------------------ARFPDEN----
NP_984799     --------------ADEENLGKGGCSIYSQQD-----------------EEGPCRGAFADENTGE-
NP_984183     --------------------GGE-SIYG-------------------------EKFEDEN----
NP_982586     ----------------RFSIHG-----------------------QTFKDENFDI-
NP_982486     --------------------GGR-SIYG-------------------------ATFEDESFAV-
AAT09096      --------------------GGE-SIYG-------------------------EKFEDENFKL-
YP_014938     ----------------TGGESIW-----------------------GESFEDEFSTE-
NP_951950     ---------------PRK-----------T-----------------KFAIKNEATNG-
NP_935388     ---------------RLP-----------S-----------------YAPIKNEASNG-
NP_907765     ----------------TGGESIWG----------------------------KPFEDEIAL--
BAC91249      ----------------DWKPVPYG----------------------------KTIESYPALY-
BAC90551      IDPATGRERTIPLEIKP-TGAKEP--------------------------VYGRIVET--
BAC89441      LDPATGKIRRVPIEIIP-EGASQP--------------------------VYGKTLRQAG
BAC88914      IDPATRQPRSLPLEIRATTGDGRPGE-----------------------ILYGQTFSLSG
AAV50868      NSNGSSAG--TVYCDEPIPPVFG--------------------------DYFYPHES---
AAV82698      ---------------DKP-----------S-----------------FEKIANESGNG-
AAV81872      ---------------QKE-----------T-----------------RANIENEAPTA-
NP_736022     --------------TGGKSIWNSKDKKKDS-----------------GNGFVNEISPY-
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NP_734780        ---------------MGGESIY------------------------GESFEDEFSEE-
YP_085398        --------------AGG----------P----------------GYSIPCETDGN-
NP_643098        -------------DGWAPQVG---------------------FVDGFPVG-
NP_641352        --------------RGG----------P---------------GYRFEDETN-NG
BAB76758         IDPKTGKYRAIPLEILA-EGDKKP------------------TYGITLEDAG
YP_129479        --------------EKP----------T----------------RDAIVNEANRG
YP_129310        --------------EKE----------T----------------RETIKNEASNG
YP_129032        --------------RRD----------S----------------YSPIKNESTNG
YP_101389        --------------KGKMLGSGDVG-------------------YTVPAEFVYP-
YP_087816        --------------QKK----------T----------------NEAIRNEANNG
YP_087815        --------------EKN----------T----------------KAPIKNEANNR
YP_076496        --------------TGG----------P----------------GYTIPDEYP---
AAT91289         --------------GGQ-SIYG--------------------EKFADEKPG--
AAT91260         --------------GGQ-SIYG--------------------EKXADXKPG--
NP_868477        --------------GGE-SIYG--------------------MKFADENFKF-
NP_867717        --------------RGG----------P----------------GYQFEDEFHPEL
NP_867158        --------------TGGS--------NLG-----------------DFDDEFHPDL
NP_865515        --------------NSGKFLMD--------------------EHDNENS---
NP_992233        --------------QKT----------T----------------DAPIKNEANNG
NP_991569        --------------EKT----------P----------------KTPIKNEADNG
NP_280624        --------------RGG----------P----------------GYEFADEFHDDL
BAC18575         --------------AGG----------P----------------GFQFANEYPTDE
BAC16839         --------------RGG----------P----------------GYNFGDEFHPEL
BAB82272         --------------MGN----------P----------------GYRIKGEFTRNQ
BAB99042         --------------AGG----------P----------------GFSFANEYPTDE
BAB97427         --------------RGG----------P----------------GYTFADEFHPEL
BAC08372         IDPKTNQYRAIPLEILV-EGDKYP-----------------LYGITLEDAG
BAC07690         IDPATNRPRYIPLEILG-QGSDTP-----------------TY----SQAG
YP_072215        --------------EKT----------P----------------KTPIKNEADNG-
YP_069574        --------------QKT----------T----------------DAPIKNEANNG-
NP_778719        --------------HGG----------P----------------GYHFEDETN-NG
NP_245881        --------------EKK----------T----------------NAPIQNEANNG-
NP_245880        --------------QKK----------T----------------DAPITNEANNG-
NP_354667        -----NMEKGFNAQRAGTGGSDMA-----------------DIPAEFSKTP
NP_354666        -----KGSESFNPARAGMGGSEKE-----------------DLKAEFSAIP
NP_298502        --------------RGG----------P----------------GYRFEDETN-NG
AAN39296         --------------GGK-SIYG--------------------EKFADENFQL-
AAQ24380         --------------GGK-SIYG--------------------NKFADENFQL-
ZP_00353225      --------------RGG----------P----------------GYQFDDEIHPDL
ZP_00244808      --------------QKP----------T----------------QAPIANEANNG-
ZP_00244807      --------------EKK----------T----------------GAPIALENRSG-
ZP_00358245      --------------SGG----------P----------------GYRFRDEVVGNP
ZP_00350273      --------------QKP----------T----------------NAAIKNEANNG-
ZP_00129494      --------------DKK----------G----------------HEPIANEAGNG-
ZP_00130259      --------------QKE----------T----------------REPVQNEADNG-
ZP_00136576      --------------EKK----------T----------------RAPIKNEADNG-
NF01760157       --------------MGG----------P----------------GYTIKDEFTNH-


CSHUA            -----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NP_839944        -----------KHTGSGILSMA----------------NAG----PNTNGSQ-FFICAAK
NP_115861        --------SEYLKHNVRGVVSMA----------------NNG----PNTNGSQ-FFIT-YG
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NP_570981         -------SEYLKHNVRGVVSMA----------------NNG----PNTNGSQ-FFIT-YG
NP_057143         ------HPDLKFTGAGILAMA----------------NAG----PDTNGSQ-FFVT-LA
CSHUB             ----------KHYGPGWVSMA----------------NAG----KDTNGSQ-FFITTVK
366681            ----------KHTGPGLLSMA----------------NSG----PNTNGSQ-FFLTCDK
A57545            ----------KHTGPGLLSMA----------------NQG----QNTNNSQ-FVITLKK
A41581            ----------KHVGPGVLSMA----------------NAG----PNTNGSQ-FFICTIK
A54204            ----------KHYGIGWVSMA----------------NAG----PDTNGSQ-FFITLTK
364705            -------RPNLSHTGRGILSMA---------------NSG----PNSNRSQ-FFIT-FR
D38552            ---------TLRHDRPYTLSMA---------------NAGS----NTNGSQ-FFIT-VV
NP_624311         K----------HKKKGTVSMVN----------------NGSDQHGSQFLITTGEN
G2708309          ------F-KLRHSAPGLLSM-------------ANSG----PSTNGCQ-FFITCSK
A45981            ------F-HYKHDREGLLSM-------------ANAG----RNTNGSQ-FFITTVP
J40763            ----------KHNKEFLLSMA----------------NRG----KDTNGSQ-FFITTKP
A47328            ----------KHDRAFLLSMA----------------NRG----KHTNGSQ-FFITTKP
XP_531396         ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
XP_525294         ----------KHTGPGILSMA----------------NAG----PNTSGSQ-FFICTAK
XP_523512         ----------KHTCPGILSMA----------------NAG----PNTNGSR-FFICTAK
XP_507866         ----------KHVGPGVLSMA----------------NAG----PNTNGSQ-FFICTIK
XP_517783         ----------KHTGPGILSMA----------------SAG----PNINGSQ-FFICTAK
XP_517773         ----------KHTGSGILSMA----------------NAG----PNTNGSQ-FFICTAK
XP_526904         ----------KHTGPGILSVA----------------NAG----PNTNGSQ-FFICTAK
XP_516556         ----------KHTGPGILSMA----------------NAG---PNTSGSQ-FS-----
XP_526001         ------------RHRVPGILSM-----------------------------------
XP_516021         -------SEYLKHNVRGVVSMA----------------NNG----PNTNGSQ-FFIT-YG
XP_515886         ----------KHNKEFLLSMA----------------NRG----KDTNGSQ-FFITTKP
XP_525218         ----------KHTGSGILSVA----------------NAG----PNTNGSQ-FFICAAK
XP_507684         ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
XP_524688         ------F-KLRHSAPGLLSMLTWPGKLTAGIFGFYQANSG----PSTNGCQ-FFITCSK
XP_513346         ----------KHTGPGLLSMA----------------NSG----PNTNGSQ-FFLTCDK
XP_524598         ----------KHTGPGILSTA----------------NAG----PNTNGSR-FFICTAK
XP_515004         -------PNLSHTGRGILSMA---------------NSG----PNSNKSQ-LRVADFL
XP_523437         ----------KHTGPGILSLA----------------NAG----PNTNGSQ-FSTRTAK
XP_520485         ----------KHTGPGILSMA----------------NAE----PNTNGSQ-FCG----
XP_519076         ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
XP_527705         ----------KRTGPGILSMA----------------NSG----PNTNCSV-FHLHCQD
XP_527529         K----------HKKKGTVSMVN----------------NGSDQHGS--------
XP_518678         K----------HKKKGTVSMVN----------------NGSDQHGSQFLITTGEN
CSMSA             ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NP_598845         ----------KHVGPGVLSMA----------------NAG----PNTNGSQ-FFICTIK
AAH58369          ------HPDLKFTGAGILAMA----------------NAG----PDTNGSQ-FFVT-LA
A56861            ----------KHYGPGWVSMA----------------NAG----KDTNGSQ-FFITTVK
A40047            ----------KHYGIGWVSMA----------------NAG----PDTNGSQ-FFITLTK
NKCR_MOUSE        ----------KHDRAFLLSMA----------------NRG----KHTNGSQ-FFITTKP
AAH61645          ------SEYLKHNVRGVVSMA----------------NNG----PNTNGSQ-FFIT-YG
BAC41068          -------RPNLSHTGRGVLSMA---------------NSG----PNTNKSQ-FFIT-FR
BAC34686          ------F-HYKHDREGLLSM-------------ANAG----PNTNGSQ-FFITTVP
BAB30711          K----------HKKKGTVSMVN----------------NGSDQHGSQFLITTGEN
BAB25645          ------F-KLRHSAPGLLSM-------------ANSG----PSTNGCQ-FFITCSK
BAB23880          ------F-KLRHSAPGLLSM-------------ANSG----PSTNGCQ-FFITCSK
NF00527760        ----------KHTGPGLLSMA----------------NYG---QNTNSSQ-FFITLKK
NF01138503        ---------TLRHDRPYTLSMA---------------NAGS----NTNGSQ-FFIT-VV
NF00510830        ----------KHTGPGLLSMA----------------NSG----PNTNGSQ-FFLTCDK
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NF00510932        -------HPDLKFTGAGILAMA----------------NAG----PDTNGSQ-FFVT-LA
NF01595779        ----------KHTGPGILLMA----------------NAG----PNTNGSQ-FFICTAK
NF02014914        ----------KHTGPGILSMA----------------NAG----PNTNSSQ-FFICTAK
NF01930249        ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTVK
NF01929278        ----------KHTGPDILSMA----------------KAG----PNTNDSQ-FFICTAK
NF00523006        ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NF00508381        ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NF01215170        -------SEYLKHNVRGVVSMA----------------NNG----PNTNGSQ-FFIT-YG
CSRTA             ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NP_783638         -------SEYLKHNVRGVVSMA----------------NNG---PNTNGSQ-FFIT-YG
NF01612782        ------F-HYKHDREGLLSM----------------ANAG---PNTNGSQ-FFITTVP
NF01612825        ---------KHTGPGLLSMA----------------NSG----PNTNGSQ-FFLTCDK
NF01607941        ------F-HYKHDREGLLSV----------------ANAG---PNTNGSQ-FFITTGP
NF01607846        ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NF01609144        ----------KHYGIGWVSMA----------------NAG----PDTNGSQ-FFITLTK
NF01608897        ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NP_758443         ----------KHVGPGVLSMA----------------NAG---PNTNGSQ-FFICTIK
AAH61971          ----------KHYGPGWVSMA----------------NAG---KDTNGSQ-FFITTVK
G2828710          ----------KHNKEFLLSMA----------------NRG----KDTNGSQ-FFITTKP
B38388            ----------KHTGSGILSMA----------------NAG----ANTNGSQ-FFICTVK
AF132148          N----------HSSAGMLSLVS----------------AGKNLVGSQFFLTLGEN
NP_611113         -------KPNLTHTGRGVLSMA----------------NSG----PNTNGSQ-FFIT-YR
NP_611695         ----------KHYGAGWLSMA----------------NAG---KDTNGSQ-FFITTKQ
NP_610590         -------KETIKHTDRGMVSMA----------------NNG----PNANASQ-FFIT-YA
NP_648697         ----------KHTGAGVLSMA----------------NAG----ANTNGSQ-FFICTGK
NP_648508         R----------YTRRGLVGMANSGK----------------DDNGSQFFFTFAP-
NP_648338         H----------NEEGVVSMA----------------NYGK---PNSNNSQ-FFISAAG
NP_476656         ------ALAVEHNRPGYLGMA----------------NRG----PDTNGCQ-FYVTTVG
NP_523874         -------HGDLRHTGAGILSMA----------------NSG----PDTNGSQ-FFIT-LA
NP_523773         ---------KHNSFGTLSMA----------------NSG---ANTNGSQ-FFICTTK
NP_610224         -------F-TLKHDSPGLLSM----------------ANSG----KETNGCQ-FFITCAK
NP_733246         ----------KHDRPFLLSMA----------------NRG----KNTNGSQ-FFITTQP
NP_611935         --------SLKHDRPYTVSMA----------------NAGP----NTNGSQ-FFIT-VL
EAA03569          H----------EDGAVSMA----------------NLGK---AHTNNSQ-FFITSGE
EAA03948          ----------KHYGAGWLSMA----------------NAG----KDTNGSQ-FFITVKQ
EAA04625          -------F-LLKHDAPGLLSM----------------ANSG----KDTNGCQ-FFITCSK
EAA06299          ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFITTVK
EAA08127          ----------KHDRAFLLSMA----------------NRG----KNTNGSQ-FFITTQP
EAA09839          -------KPNLSHAGRGILSMA----------------NSG----PNTNGSQ-FFIT-YR
EAA10133          --------TLKHDRPYTVSMA----------------NAGP----NTNGSQ-FFIT-VL
EAL39647          K----------HSEPGLLSMVN----------------AGEHLIGSQFFFTLGPD
EAA13913          -------KENLKHNERGMVSMA----------------NSG----PNTNGSQ-FFFT-YA
EAA13914          -------NLKINHTCSGFIAMA----------------NRG----PNTNGCQ-FYITTLP
EAA14200          ----------KHTGFGVLSMA----------------NSG----PNTNGSQ-FFICTEK
EAA01474          -----------DDTKILAIRG----------------SVGMRRSQKRHDNMGLVGSQFR
KP_321072         -----------DDTKILAIRG----------------SVGMRRSQKRHDNMGLVGSQFR
KP_320182         -------HSDLKHTGAGIVSMA----------------NSG----PDTNGSQ-FFIT-LG
KP_319131         -------NLKINHTCSGFIAMA----------------NRG----PNTNGCQ-FYITTLP
KP_311949         ----------KHDRAFLLSMA----------------NRG----KNTNGSQ-FFIGHTL
CAI11739          ----------SHNKRGILGMA----------------NQG----AHSNGSQ-FYITLQP
AAQ91263          ----------KHGGKGTLSMA----------------NAG----PNTNGSQ-FFICTAD
NP_001004626      ----------KHTGAGILSMA----------------NSG----PNTNGSQ-FFICTAK
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NP_001002065    -------F-HYKHDREGLLSM----------------ANAG----PNTNGSQ-FFITTVP
NP_957499       -------F-RMKHSGPGLLSM----------------ANSG----PGTNGCQ-FFITCTK
AAQ94596        -------F-RMKHSGPGLLSM----------------ANSG----PGTNGCQ-FFITCTK
NP_998184       ----------KHYGPGWLSMA----------------NAG----KDTNGSQ-FFITTVQ
NP_001002146    -------SEHLKHNVRGVVAMA---------------NNG----PNTNASQ-FFFT-YA
AAQ91264        ----------KHTGAGCLSMA----------------NAG----PNTNGSQ-FFICTAL
AAH59458        ----------KHTGAGCLSMA----------------NAG----PNTNGSQ-FFICTAL
AAH56814        K----------HRKKGTVSMVN-----------------NGSDQHGSQFLITTGEN
AAH62863        ----------KHTGAGCLSMA----------------NAG----PNTNGSQ-FFICTAL
NP_998629       ----------KHTKEFLLSMA----------------NRG----KDTNGSQ-FFITTKP
NP_957285       -------RPNLSHTGRGILSMA---------------NSG----PNTNKSQ-FFIT-FR
NP_506749       ----------KHTGPGVLSMA----------------NAG----PNTNGSQ-FFLCTVK
NP_506561       ----------KHTGPGCLSMA----------------NAG----PNTNGSQ-FFICTVD
NP_504522       ---------TVQNTRGKVILLPS--------------DTN----PTVFSSLFYVLLDKS
NP_506751       ----------KHTGPGVLSMA----------------NAG----PNTNGSQ-FFLCTVK
NP_497745       ----------KHSRPYLLSMA----------------NKG----PNSNSSQ-FFITTAA
NP_499828       ----------KHTGPGVLSMA----------------NCG----ANTNGSQ-FFLCTVK
NP_497257       ----------QHYGPGWLSMA----------------NAG----EDTNGSQ-FFITTAK
NP_509506       ----------KHKKPYLLSMA----------------NRG----PDTNGSQ-FFITSEE
NP_503034       ----------RHTMPGTVSMA----------------NCG----ANTNGSQ-FFICTEK
NP_501118       -------DERLKHTGAGILSMA---------------NAG----PNTNGSQ-FFIT-LA
NP_496562       K----------FNRRGIVGMANAGR--------------------DDNGSQFFFTIGDR
NP_495855       -------F-ELKHIGPGMLSM----------------ANAG----SDTNGCQ-FFITCAK
NP_496337       -------ISGFSHDARGVLSMA---------------NKG----SNTNGSQ-FFIT-FR
NP_495417       -------VSALKHDSRGCVSMA---------------NNG----PDSNRSQ-FFIT-YA
NP_493378       ---------RLRHDKPFKVSMA---------------NAGGG---NTNGSQ-FFIT-VC
NP_492343       R----------HTRMGIVSFVN-----------------NGDNMLGSQFFITLGEN
NP_493624       ----------KHYGAGWLSMA----------------NAG----ADTNGSQ-FFITTVK
T06073          ----------KHTGPGILSMA----------------NAG----ANTNGSQ-FFICTVK
NP_175776       K----------HSKTGTVAMAS----------------GGENLNASQFYFTLRDD
NP_567029       ----------KHTGPGFLSMA----------------NSG----PDSNGSQ-FFITTVT
NP_201554       -------NSKLLHSGRGVVSMA---------------NSG----PHTNGSQ-FFVL-YK
NP_200679       ----------KHTGPGFLSMA----------------NAG----QDTNGSQ-FFITTVT
NP_181407       -------F-TAKHTGPGLLSM----------------ANSG----PNTNGCQ-FFITCAK
NP_191166       ----------KHTGPGILSMA----------------NSG----PNTNGSQ-FFICTEK
NP_171696       -------RDSLKHNARGMLSMA---------------NSG----PNTNGSQ-FFIT-YA
NP_195222       ----------QHSHAGMVAMA----------------NTG----PDSNGSQ-FFITTVK
NP_195213       ----------KHTGAGILSMA----------------NSG----PNTNGSQ-FFICTDK
NP_196816       ----------SHVGPGVLSMA----------------NAG----PNTNGSQ-FFICTIK
NP_188932       H----------EDGPGIISMA----------------DS--------NGSQ-FQIHMKD
NP_191762       ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTVK
NP_190046       ---------SLRHDRPFTLSMA---------------NAGP----NTNGSQ-FFIT-TV
NP_180557       ----------KHTGPGVLSMA----------------NSG----EDTNGSQ-FFITTVT
NP_181157       -------NKELKHTGAGILSMA---------------NAG----PNTNGSQ-FFIT-LA
NP_179251       ----------KHTGPGILSMA----------------NAG----ANTNGSQ-FFICTEK
NP_179709       ----------KHTGPGILSMA----------------NAG----ANTNGSQ-FFICTVK
AAK02067        ----------KHERKGMLSMA----------------NSG----PNTNGSQ-FFITTTR
P82869          -----GELPVLPLSVYGAVAMAHSEN--------------------SEEYSSPYQFFFYLYDK
T05352          ---------------GWFTTA----------------IFN----SN----L-FTITLAR
T49181          H-----------DGAGVLSMA----------------NCG----PNTNGSQ-FFILFKR
T05314          R----------FSHRGIVAMANASSP-------------------NSNGSQFFFTLDK-
CSZPA           --------FALKHNKPGLLSMA---------------NAG----PNTNGSQ-FFITTVV
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E313994      -------HSDLHHTGAGILSMA----------------NAG----PNTNSSQ-FFIT-LA
E1335804     ----------SHQRPGLLSMA----------------NAG----PDSNGSQ-FFITTVK
E1331567     -------F-TLKHDRPGLLSM----------------ANAG---KDSNGCQ-FFITTVP
G62327       -------F-ELKHDKPFLLSM----------------ANAG---PNTNGSQ-FFITTVP
G62590       ------CNPLKHDDRGIISMA----------------NRG----KNTNGSQ-FFIL-YG
E1294518     ---------NLKHDRPFTVSMA---------------NSGP---NTNGSQ-FFIT-TD
T39728       V----------HNKMGLVSMSTATISSR-----------DDKLLVCGSQFIITLSDN
E1263915     R----------FIRRGLVGMACTEN----------------EGNNSQFFITLGP-
CSBY         -------FKKHHDRPGLLSMA----------------NAG--PNTNGSQ-FFITTVP
G30507       -------FVKKHDKAGLLSMA----------------NAG---PNTNGSQ-FFITTVP
G12324       ----------KHDRKGRLSMA----------------NRG---KDTNGSQ-FFITTTE
G57050       ----------FVEPFTLGMA-----------------NLGS---PNTNNSQ-FFITTYA
G48567       -------F-TVKHDKPFLLSM----------------ANAG---PNTNGSQ-AFITCVP
CSBYC3       ----------KHDRPERLAMAYFG--------------PDSNTSE-FIITTKA
G63359       -----------IHDRPGRVSMIK----------------DDKGLK-FIIETSE
G38324       ----------KHDKPGRLSMA----------------NRG----KNTNGSQ-FFITTVP
TcCyP19      -------KAGKHFGLGTLSMA----------------NAG--PNTNGSQ-FFICTAP
TcCyP20      -------LGTVHHDSRGVVSMA---------------HRGN--KPNTNASQ-FFII-FQ
TcCyP21.1    ----------KHF-VGAVSMA----------------NAG---PNSNGSQ-FFVTTAP
TcCyP21.3    -------RAGKHFGPGTLSMA----------------NAG----PNTNGSQ-FFICTAA
TcCyP24.3    A---------GAHKGPGILSMA----------------NAG---RNTNGSQ-FFICTVS
TcCyP26      AG----------KHLPGTVAMA----------------HSG---PNQNGSQ-FFFNMRR
TcCyP28      -------KAGKHTGVGCLSMA----------------NAG----PNTNGSQ-FFICTAN
TcCyP30      ---------SSVFDQRGLVGTAVS----------------APHLNGSQ-FFILTAK
TcCyP35.1    -----------HDAPGVIGMC----------------NDN----EDTNASS-FYITMKA
TcCyP35.3    ----------RLNEVGLLLMA----------------NNG---PNSNGSQ-FFITTSD
TcCyP40      ----------CDKAGLLAMA-----------------NAG----PNTNGSQ-FFITVNP
TcCyP110     DFFS-------YPSVYWLCMA----------------NCGP---NTNESQ-FFITVGE
AAT44353     ----------KPLGPGTLSMA----------------NAG---PNTNGSQ-FFICTEK
EAL37431     ----------THDAPFLLSMA----------------NAG---PNTNGSQ-FFITTVP
EAL37232     -------YPELKYDRRGILSMA--------------SKGASKKPNTNGSQ-FFIT-YS
EAL37110     --------FKFIHESHVISMA----------------NRG----PNTNGSQ-FFITFTP
EAL36265     K----------HKRMGVLGMVN-----------------HISKNSLGSEFYFTLKDE
EAL35294     ------F-EIKHTKPGLLSM----------------ANNGS---PNTNGCQ-FFITCNT
J68268       -------KAGKHFGPGTLSMA----------------NAG----PNTNGSQ-FFICTAR
J68269       -------KAGKHFGPGTLSMA----------------NAG----PNTNGSQ-FFICTAR
AAQ15626     -------RAGKHFGPGTLSMA----------------NAG----RNTNGSQ-FFICTAA
AAB07896     -------KAGKHFGAGTLSMA----------------NAG----PNTNGSQ-FFICTAP
AAK14937     ----------KHDRPFLLSMA----------------NAG----PNTNGSQ-FFVTTVV
CAC18541     ------F-IMKHSSPGMLSM----------------ANSG---KDTNGCQ-FFITCAP
A45000       ----------KHSKPMMLSMA----------------NAG----KNTNGSQ-FFITTAV
Q9Y0F5       -------YPELKYDRRGILSMA--------------SKGASKKPNTNGSQ-FFIT-YS
J47811       ----------KHTGLGVLSMA----------------NAG----PNTNGSQ-FFICTAK
J50388       ----------RHEGFGVLSMA----------------NSG---PNTNGSQ-FFICTTK
L46884       -------FNHKHEAFS-LSMA----------------NAG---PNTNGSQ-FFITTVP
M93420       ----------RHEGFGVLSMA----------------NSG---PNTNGSQ-FFICTTK
J50389       ----------KHVGAGWLSMA----------------NAG----PNTNGAQ-FFITTTQ
G992633      ----------RHVGAGWLSMA----------------NAG----PDTNGSQ-FFITTVK
E323073      ----------RHEGFGVLSMA----------------NSG---PNTNGSQ-FFICTTK
G52758       ----------KHF-VGALSMA----------------NAG---PNTNGSQ-FFITTAP
E1203753     -------KAGKHFGPGTLSMA----------------NAG----PNTNGSQ-FFLCTAP
CAB58290     -----------HVGAGLLSCRP--------------TVG-----AVTASR-LLITLSP
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CAB58298      --------KAGRHTGLGCLSMA----------------NAG----PNTNGSQ-FFICTAA
AAF69736      -----------CDKSGLLAMA----------------NAG----ANTNGSQ-FFITTAP
AAD46565      -----------KHF-VGALSMA----------------NAG----PNTNGSQ-FFITTAP
A53522        --------FDLKHERGVISMA----------------NAG----PNTNGSQ-FFITTVK
NP_702112     K-----------FLYTGCLSFANLNIDK-------------------PSNGSQFFITLDK-
NP_701512     -----------EFVQDGDVALFNEG-------------------PHSNSSQ-FIITFSP
NP_701389     ------------HSKRGILSMC-------------QTRI---KHTNNSQ-FFVTFKS
NP_701030     -------DSTLKHDKRGIVSMA----------------NKG---KPNTNGSQ-FFIT-YS
NF01067443    ----------KHTCAGLLTIV-------------QVE-----DKKYSSIFKITLNK
NF01067965    -------F-DIKHDKEGLLSM---------------ANTG----PNTNGCQ-FFIITKK
NF01065889    --------HLNHSKPFMVSMA----------------NCGP---NTNGSQ-FFIT-TV
NF00926916    ----------KHDQPGLLSMA----------------NAG----PNTNSSQ-FLITLVP
S52760        -------FKVNHSKRGLLSMA----------------NAG---KNTNGSQ-FFILFIP
J10322        -------F-DIKHDKEGLLSM---------------ANTG----PNTNGCQ-FFIITKK
CAB39039      ---------KHDQPGLLSMA----------------NAG----PNTNSSQ-FFITLVP
CAD51648      -------NTELKHTGAGILSMS----------------NNG---PNTNGSQ-FFIT-LC
NF01497907    ----------KHDTPGLLSMA----------------NAG----PNTNSSQ-FFITLVP
NF01497552    ---------HLNHSKPFMVSMA----------------NCGP---NTNGSQ-FFIT-TV
NF01497379    -------FTLKHTKRGMLSMA----------------NAG----RNTNGSQ-FFILFVP
NF01497199    -------F-DIKHDKEGLLSM---------------ANSG----PNTNGCQ-FFITTKK
NF01496968    ----------KHLSAGLLTVI-------------QVG-----KKKCSSIFKITLNK
NF01495390    -----------EFVQDGDVALYNQG-------------------PHSNTSQ-FIITFAP
NF01495324    ------NKELKHTGAGILSMS----------------NNG----PNTNSSQ-FFIT-LA
NF01493974    ------------HSKRGVLSMC-------------QTSI---KHTNNSQ-FFVTFKS
NF01493918    K----------FLYMGCVAFANLNIBS-----------------PXNGSQFFITLDK-
E316521       -------FKLKHTKPALLSMA----------------NAG----PNTNGSQ-FFITFVP
CAC35733      R----------HNQYGVVATS-----------------NSKPHANNSDFYILLTQN
J47812        ----------KHTGPGVLSMA----------------NAG----PDTNGSQ-FFLCTVK
J47813        ----------KHTGPGVLSMA----------------NAG----PNTNGSQ-FFICTAK
G2624966      -------F-TVKHTKPGMLSM---------------ANAG----PNTNGSQ-FFITTVP
E1317902      -------IRSFSHNQRGILSMA----------------NQG----TDTNKSQ-FFIT-FR
E1319851      -------ISSLSHDQRGILSMA----------------NQG----TDTNKSQ-FFIT-FR
G3057040      -------KSTFSHDRRGVLSMA----------------NQG---TDTNKSQ-FFIT-FR
AAB81959      ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
AF023860      ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
AAB81961      ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
AAF22215      ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
AF243140_1    ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
AF252388      ----------KHVGPGVLSMA----------------NAG----PNTNGSQ-FFICTIK
CSBOAB        ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NF01922219    ----------KHEGKGTLSMA----------------NAG----PNTNGSQ-FFLCFVK
NF01725587    ----------KHTGPGVLSMA----------------NAG----PNTNGSQ-FFLCTAR
NF01897292    -------FDLKHYDEQWVSMA----------------NNG----PNTNGCQ-FFVLY-D
CSHYAC        ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NF00071027    ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NF01951405    -------KPNLSHTGRGILSMA----------------NSG---PNTNKSQ-FFIT-FR
NF01059378    ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NF01105745    ----------KHKGEGILSMA----------------NAG----PNTNGSQ-FFICTVE
NF00495096    ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NF01053198    ----------KHTGPGILSMA----------------NAG----PGTNGSQ-FFICTAK
CSPGA         ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTAK
NF01950932    -------SEYLKHSVRGVVSMA----------------NNG----PNTNGSQ-FFIT-YG
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NF01951326        -------F-HYKHDKPGLLSM----------------ANAG----PGTNGSQ-FFITTVP
NF00909389        ----------KHTGPGILSMA---------------NAG----PGTNGSQ-FFICTEK
NF01286555        ----------KHTGPGILSMA---------------NSG----PGTNGSQ-FFICTDK
NF01737225        ----------KHTGPGILSMA---------------NAG----ANTNGSQ-FFICTEK
NF01590839        KHD-----------GPGVLSMA--------------NAG----PGTNGSQ-FFITHVE
AAH51602          -------HPDLKFTGAGILAMA--------------NAG----PDSNGSQ-FFLT-LA
AAT69672          ----------KHTGPGILSMA---------------NAG----ANTNGSQ-FFICTAK
AAH54186          ----------KHTGPGILSMA---------------NAG----ANTNGSQ-FFICTAK
AAH54168          ----------KHYGPFWLSMA---------------NAG----KDTNGSQ-FFITTVK
NF01208049        -------KPNLSHTGRGVLSMA--------------NTG----PNTNKSQ-FFIT-FR
NF01844632        ----------QHNKEFLLSMA---------------NRG----KDTNGSQ-FFIITKP
NF01844615        R----------FNRRGLVAMANAGP-----------------HDNGSQFFFTLGR-
NF01915773        -------HPDLKFTGAGILAMA--------------NAG----PDSNGSQ-FFLT-LA
NF01915657        -------SEFLKHSVRGVVSMA--------------NNG----PNTNASQ-FFIT-YG
NF01557564        -------F-HYKHDKEGLLSM---------------ANAG----PNTNGSQ-FFITTVP
AAH41536          ----------KHTGPGILSMA---------------NAG----SNTNGSQ-FFICTAK
AAH85963          ----------KHNKEFLLSMA---------------NRG----KDTNGSQ-FFITTKP
AAH64250          -------F-KQKHSTPGLLSM---------------ANSG----PGTNGCQ-FFITCSK
AAH61335          -------F-HYKHDKEGLLSM---------------ANAG----PNTNGSQ-FFITTVP
AAH59741          ----------RHTGPGILSMA---------------NAG----ANTNGSQ-FFICTAK
AAH67931          ----------QHNKEFLLSMA---------------NRG----KDTNGSQ-FFITTKP
AAH44993          -------KPNLSHTGRGVLSMA--------------NTG----PNTNKSQ-FFIT-FR
A40516            ----------KHYGPGWVSMA---------------NAG----KDTNGSQ-FFITTVK
CYPB_BOVIN        ----------KHYGPGWVSMA---------------NAG----KDTNGSQ-FFITTVK
AAR19276          ----------KHTGPGILSMA---------------NAG----PNTNGSQ-FFICTEK
A46579            -------F-HYKHDKEGLLSM---------------ANAG----SNTNGSQ-FFITTVP
AAV40687          -------F-PVHHSRPFLLSM---------------ANAG----PNTNGSQ-FFITVSA
NF01637248        -------FQLKHTKPGLLSMA---------------NAG----KNTNGSQ-FFITTVV
CYPR_BOVIN        ----------KHTGPGLLSMA---------------NRG----QDTNNSQ-FFITLKK
CYPR_CALVI        -------ALDVEHLRPGYLGMA--------------NRG----PDTNGCQ-FYVTTVA
E1317906          -------VSGFSHDARGVLSMA--------------NKG----SNTNGSQ-FFIT-FR
AAB87888          ----------KHTGTGILSMA---------------NAG----ANTNGSQ-FFICTVK
AAB87889          ----------KHTGTGILSMA---------------NAG----ANTNGSQ-FFICTVK
Q9XZZ5            ----------KHQGEGTLSMA---------------NAG----PNTNGSQ-FFICTGQ
S63995            ----------KHTGPGILWMA---------------NAG----PNTNGSQ-FFITTAK
G1703696          ----------KHTQPGILSMA---------------NAG----VNTNGSQ-FFICTAV
U36797            ----------KHTGPGILSMA---------------NAG----KNTNGSQ-FFICTTK
AF017738          K----------FNRRGLVGMASGND-----------------GMNGSQFFFTLNA-
L37292            ----------KHDEPFVVSMA---------------NKG----PNTNGSQ-FFITTTP
AAS01736          ----------KHTGPGVLSMA---------------NAG----PGTNGSQ-FFICTVK
AAO61985          ----------LMKIKCFNKLY-----------------EGKNGVEPLKEIVSS
CAC80550          ----------KHTGPGILSMA---------------NAG----PGTNGSQ-FFICTAK
AAO63777          ----------KHTGPGILSMA---------------NSG----PGTNGSQ-FFICTDK
B53522            ----------KHSEPFLLSMA---------------NAG----PNTNGSQ-FFITTVP
E280557           -------FKLCHHGFGWLGMA--------------NCG----PNTNGAQ-YYISTVD
U70827            ----------KHDEPFLVSMA---------------NKG----PNTNGSQ-FFITTTP
U70884            ----------KHDEPFLVSMA---------------NKG----PNTNGPQ-FFITTTP
U55771            --------FTAKHKKGVIAMA--------------NRG----PNTNGSQ-FYITTVA
O1024669          ----------KHYGAGWLSMA---------------NAG----KDTNGSQ-FFITCKK
227879            ----------LKHFGQGTLSMA--------------NAG----ANTNGSQ-FFICVAP
AAD48910          ----------KHSKPGLLSMA---------------NAG----PNTNGSQ-FFITTVV
AAO51811          -------F-KIKHSGPGLLSM---------------VNSG----PNSNGCQ-FFITCVA
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AAF76472       -------RDSLKHNARGMLSMA----------------NSG----PNTNGSQ-FFIT-YA
AAP80861       ----------KHTGPGYLSMA----------------NAG----RDTNGSQ-FFITTVT
AAP73848       -------F-IAKHTGPGLLSM----------------ANSG----VNSNGSQ-FFITCAK
BAB62329       -------RPELKHTGAGILSMA----------------NAG----PNTNGSQ-FFIT-LA
AAL75728       ----------KHDGPGVVSMA----------------NAG----PNTNGSQ-FFITVDK
S48017         ----------KHDSPGILSMA----------------NAG---PNTNGSQ-FFICTVP
S48018         ----------RHTGPGVLSMA----------------NAG---PNTNGSQ-FFICTTR
BAD53622       ----------KHTGPGLLSMA----------------NAG---RDTNGSQ-FFITTVT
BAD53621       ----------KHTGPGLLSMA----------------NAG---RDTNGSQ-FFITTVT
BAD53620       ----------NHSAPGLLSMA----------------NYA----KDTNGSQ-FFITTVK
XP_507188      ----------KHARPGTLSLCLGQND---------DDDDIKLNPNYHNVE-FLVTTGP
XP_483750      --------SLRHDRPFTLSMA----------------NAGP----NTNGSQ-FFIT-TV
XP_483749      G---------LAVSVDGLLCCTIS-----------SDWSVKIYDVVNYDMFMMRLPF
XP_482125      R---YKAQTKLPFNAFGTMAMARD-E----------------FDDNSASSQIFWLLKES
XP_478742      ----GELPVLPMSVYGAVAMAHSVD---------------SDEYSSPSQFFFYLYDK
XP_478741      -----GELPVLPMSVYGAVAMAHSVD---------------SDEYSSPSQFFFYLYDK
NP_385690      ---------------HVRGTCSMARS----------------QMPNSANSQFFICFTDA
NP_385689      ---------------FERGTVGMARA----------------QDPDSANSQFFIMLAPG
NP_349373      FQN-------NLKHERGVISMA-------------RTGF---PDSAGSQ-FFIMAED
BAD45990       R---------HSKMGTIAMAS----------------AGENCNASQFYITLRDG
BAD45991       R---------HSKKGTIAMAS----------------AGENCNASQFYITLRDD
NP_908419      S---------PHAAAGAVSIVVR----------------DPSLPPPKPKLVARGG
NP_919903      ---------VMWYFPIIPRLRR----------------LFRNKGNAGMLRWHAE
BAD35839       ----------KHERKGMLSMA----------------NSG----PNTNGSQ-FFITTTR
AAU87301       ----------KHTGPGILSMA----------------NAG---PNTNGSQ-FFICTAQ
CAG90469       ----------KHDRPYRLSMA----------------NSG----KNTNGSQ-FFITTVT
CAG88330       --------FVKKHEKPGLLSMA----------------NAG----PNTNGSQ-FFITTVT
CAG88054       NS-----QHEYVDNSIGLVSFVTKKDTN--------------GKDLVIGSQFTISLTEN
CAG86818       ---------LLRHSKPFMVSMA----------------NSGP----NTNGSQ-FFIT-TE
NF01109982     ----------KHTGPGILSMA----------------NAG---PNTNGSQ-FFLCTAT
NF00686348     -------------HVRGEVSMARA----------------QEKDSANSQFFIVYQPT
NF00686217     -------------HVRGEVSMARA----------------QEKDSANSQFFIVYQPT
NF02138644     ----------KHTGPGILSMA----------------NSG----PNTNGSQ-FFICTEK
NF00926921     ---------RHTKKGVLSMA----------------NAG----KDTNGSQ-FFITTAI
NF00909931     ----------KHTGPGILSMA----------------NAG----PGTNGSQ-FFICTTK
NF00956595     ---------KHTAPGQLSMA----------------NSG----PNTNGSQ-FFITTDK
NF02035209     ----------KHTGPGILSMA----------------NAG----PNTNGSQ-FFICTDE
NF01329591     ---------LKNARGTLAMA----------------RTSD---PNSATSQ-FFINVAD
CAG86678       ---------WNQIKRGTLLTVN--------------NAGN---EDGLGSQ-FFISLSN
CAG86274       -------FKLKHNKQGRMSMA----------------NGG----PNTNGGQ-FFITTKD
CAG85447       K----------FNKRGLVGAVHDDKRN-----------------SNNVDSLFITLKP-
CAG85287       -------FQKKHEKAGLLSMA----------------NAG----PNTNGSQ-FFITTVP
CAG84900       ------F-QLTHDKPFLLSM----------------ANAG----ANTNGSQ-FFITTVP
CAG84822       ----------LDDPFKLCLA----------------NDGT---SNANKSQ-FFITTYP
CAG84723       -------F-PYDH-KKYSVSM----------------ANSG----PNSNGCQ-FFICCKE
CAG79895       ----------KHTKPYKLSMA----------------NAG----RDTNGSQ-FFITTVV
CAG78939       ------FNPHTHDSRGVLSMA----------------NRG----KGTNSSQ-FFIT-YS
CAG82238       ------F-PYPHDQPFLLSM----------------ANAG----PNTNGSQ-FFITTTE
CAG81980       -------FEAKHTRPGLLSMA----------------NSG----PNTNGSQ-FFVTTVP
CAG81971       -------FNVKHTRPGLLSMA----------------NAG----PNTNGSQ-FFITTVD
CAG81844       -------K-TFPH-IEGALSM----------------ANSG----KDTNGCQ-FFITTRK
CAG84141       K----------LKRGYLAMASEYTENN--------------RRVPNSATTEFFIALKE-
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CAG84091     ---------------HAEPFVLSMA---------------NAG----PNSNKSQ-FFVTLKG
CAG83821     ----------------EGGYLCMAS---------------NDK-----GRNLCQ-WFITLEG
CAG76968     ------------LRNQRGTIAMA----------------RTSD---KDSATSQ-FFINIAD
CAG62671     -----------FDEPFLLAMA-------------------NTGS---PNTNSSQ-FFITTYP
CAG76052     -----------LKNTRGTLAMA-----------------RTND---PHSATAQ-FFINLID
CAG59915     --------FTKTHDKPGLLSMA------------------NAG----PNTNGSQ-FFITTVP
CAG58658     --------FVKRHERPGLLSMA------------------NAG----PNTNGSQ-FFITTVP
G3777556     -----------KHTGPGTLSMA------------------NAG----PNTNGSQ-FFICTET
AAF65770     -----------KHTGPGILSMA------------------NAG----PGTNGSQ-FFICTAK
BAA25755     -----------KHTGPGILSMA------------------NAG----PGTNGSQ-FFICTAK
CSTO         -----------KHTGPGILSMA------------------NAG----PGTNGSQ-FFICTAK
CSRP         -----------KHTGPGILSMR------------------NAG----SNTNGSQ-FFICTEK
CSZM         -----------KQPAPGVLSMA------------------NAG----PNTNGSQ-FFICTVA
CYPH_ALLCE   -----------KHTGPGVLSMA------------------NAG----PGTNGSQ-FFICTEK
AAG01536     -----------KHTGPGVLSMA------------------IA-----PGTNGSQFFIICTAE
AAB51386     -----------KHTGAGILSMA------------------NAG----PGTNGSQ-FLICSAK
554833       -----------KHTGPGILSMA------------------NAG----PGTNGSQ-FFICTTK
K85185       -----------KHTGPGILSMA------------------NAG----PNTNGSQ-FFICTAK
Y08273       -----------KHTGPGILSMA------------------NAG----PGTNGSQ-FFICTEK
Y08320       -----------KHTGPGILSMA------------------NAG----PGTNGSQ-FFICTEK
E1226445     -----------RHTGPGILSMA------------------NAG----AGTNGSQ-FFICTEK
L32095       -----------KHVGPGVLSMA------------------NAG----PNTNGSQ-FFICTVP
CAA10766     -------F-IAKHTGPGLLSM-------------------ANSG----PNTNGSQ-FFLTCAK
AAF69796     --------FKLRHDRPFLLSMA------------------NAG----PNTNGSQ-FFITTVV
AAF69795     --------FKLRHDRPFLLSMA------------------NAG----PNTNGSQ-FFITTVV
CSNCM        --------FAKKHVRPGLLSMA------------------NAG----PNTNGSQ-FFVTTVP
NF01287451   K----------HLERGTVSMATVPHPS-------------DPDTRLAGSQFIVTLGDN
NF01527836   -------RPVLRHNERGIVSMA------------------NKG----PNTNGSQ-FFIL-FD
NF01488902   -------HPGLKHTGAGVLSMA------------------NAG----PNTNGSQ-FFIT-LA
NF00648058   -------F-QLKHDRPFLLSM-------------------ANAG---PGTNGSQ-FFVTTVP
NF01487278   -----------KHSKKGLLSMA------------------NAG----KDTNGSQ-FFITTVI
NF01486260   ---------SLKHDKPYTVSMA------------------NAGP----NTNGSQ-FFIT-TE
NF00904102   -----------KHSKKGLLSMA------------------NAG----KDTNGSQ-FFITTVI
NF01484914   K----------HLERGTVSMATVPHPS-------------DPDTRLAGSQFIVTLGDN
NF01484255   -------F-LLKHDTPGLLSM-------------------ANAG---PNTNGSQ-FFITTVP
NF01483993   K----------FNRRGLLGMANEGAP-----------------DTNSSQFFFTLGK-
NF01533203   -----------KHTGPGILSMA------------------NAG----PGTNGSQ-FFICTAK
NF01483647   -------EGPNTHSARGIVSMA------------------NKG---KNTNSSQ-FFIT-YR
571849       --------GQLKHDRPGLLSMA------------------NAG----PNTNGSQ-FFVTTVV
J17900       -----------RHTGPGILSMA------------------NAG----RDTNGSQ-FFITTVT
NF00873669   -------FQLKHNKPGLLSMA------------------NAG----PNTNGSQ-FFITTVV
NF01527595   -------FQLKHSKPGLLSMA------------------NAG----PNTNGSQ-FFITTVV
NF01539217   -------FERKHTRPGLLSMA------------------NAG----PNTNGSQ-FFVTTVV
01035365     -----------RHTKKGVLSMA------------------NAG----KDTNGSQ-FFITTAI
YP_116397    ----------LKNDKYTVAMA-------------------RTND---PHSATAQ-FFINVAD
YP_119877    YAEGDPMAMEAIAYKRGTLAMA------------------N-AG--PGTNGSQ-FFLVYGD
CAD25897     -------FEIAHDSIGKLSMA-------------------NRG----PHTNGSQ-FFITFDK
CAD26352     -------FELKHTKEGILSMA-------------------NCG----AHTNGSQ-FFITLGK
AAD17998     ----------RHTKTGLLSMA-------------------NAG----KDTNGSQ-FFITTAV
G2959712     ----------RHTGPGVLSMA-------------------NAG----PNTNGSQ-FFLCTVE
CSNCC        -------FAKKHVRPGLLSMA-------------------NAG----PNTNGSQ-FFVTTVP
AJ006689     -------FSRKHDKKGILSMA-------------------NAG----PNTNGSQ-FFITTAV
```

```
AAF28343   -------TKELKHTGAGILSMA----------------NSG----VNSNGSQ-FFIT-FG
AAD50375   -------F-LVKHKIG-CLSM------------------ANAG----KNTNGSQ-FFITTAE
AAK21908   ----------RHTGPGILSMA------------------NAG---PGTNGSQ-FFLCTVP
AAG13968   -------FQIKHTRPGLLSMA------------------NAG---PNTNGSQ-FFITTVK
BAB58884   -------FQIKHTRPGLLSMA------------------NAG---PNTNGSQ-FFITTVK
E1363908   -------FQLKHNKPGLLSMA------------------NAG---PNTNGSQ-FFITTVV
AAD16142   -------FIYKHNKPGLLSMA------------------NAG---PNTNGSQ-FFITTVV
G1764137   -------FQKKHVERGMLSMA------------------NAG---PNTNGSQ-FFITVTK
Z32674     -------FQLKHDRPGLLSMA------------------NAG---PNTNGSQ-FFVTTVV
JT0686     -------FKLEHSKPGLLSMA------------------NAG---PNTNGSQ-FFVTTVV
CSCK       -------FVKRHDRPGLLSMA------------------NAG---PNTNGSQ-FFITTVP
NP_986490  -------FVKKHEKPGLLSMA------------------NAG---PNTNGSQ-FFITTVP
NP_985014  -------FTKKHTRAGLLSMA------------------NAG---RNTNGSQ-FFITTVP
NP_984799  ----------FSEPFLLAMA-------------------NMGA---PDSNSSQ-FFITTTA
NP_984183  ------F-ARKHDRPFLLSM-------------------ANAG---PNTNGSQ-CFITCAP
NP_982586  ----------KHDRPGRLAMVNDG-------------------PDSNHSQ-FYIVTSL
NP_982486  ----------KHDKPGRLSMA------------------NRG----RDTNGSQ-FFITTVA
AAT09096   ----------RHTSPYQLSMA------------------NAG---PNTNGSQ-FFITTVK
YP_014938  ----------AFNLRGALSMA------------------NAGP---NTNGSQ-FFIVQKP
NP_951950  ----------LSNKRGTLAMA------------------RTAV---VDSATSQ-FFINLVD
NP_935388  ----------LKNVTGSIAMA------------------RTQD---PNSATRQ-FFINLVD
NP_907765  --------GYAFDREGLLAMA------------------NSGP---NSNGSQ-FFIT-TA
BAC91249   ----------YGPPGVFSMAR------------YEKD----PNSASSQ-FFISFSD
BAC90551   ------TTPPVLTHSKGALAWARD------------------NNPNSASSQFYIALSDN
BAC89441   I---PEKIFPVMRHLPGAVGLAHTEK---------------DPNSG--STQFYITYAN
BAC88914   RN--PRTQPPVLVHSRGALAMARS-----------------QNPNSASSQFYITLAET
AAV50868   ----------KGLLSLVPYTD---------------ESG-----NRYYDSTFMITLDD
AAV82698   ----------LKNEYGTIAMA------------------RERE---PHSGTRQ-FFFNLND
AAV81872   ----------KPNVVGSVAMA------------------RTPD---PHSASSQ-FFINVND
NP_736022  ----------LYNIRGSLAMA------------------NAGA---DTNGSQ-FFINQSQ
NP_734780  ----------LYNVRGALSMA------------------NAGP---NTNGSQ-FFIVQNT
YP_085398  ----------PHRHLVGSLSMA------------------HAG---RNTGGSQ-FFIVHEP
NP_643098  ----------RDTTTGKTWLAHCYG----------TLGAGRNNDEDSSIGAELYVVTGQ
NP_641352  VGH----------ERGVLSMA------------------NAG---PNTNGSQ-FFITHTA
BAB76758   R---YLDMPVLPFSSFGALAMARP-E----------------TEVDGASSQVFFFLFEP
YP_129479  ----------LKNVVGSLAMA------------------RTDA---PHSATGQ-FFINLDD
YP_129310  ----------LSNKVGTLAMA------------------RTME---PHSASSQ-FFINVND
YP_129032  ----------LENNRATVAMA------------------RTQN---PDSATRQ-FYINYQN
YP_101389  ----------KYFHKKGALSAARQ-------------GDEVNPKKESSGCQFYIVTGKV
YP_087816  ----------LKNLRGTIAMA------------------RTSA---PHSATAQ-FFINLQD
YP_087815  ----------LSNKRGTIAMA------------------RTSD---PHSATAQ-FFINVAD
YP_076496  -----VTRP----YQRGTLAMA------------------RTTA---PNSAGSQ-FFICTGL
AAT91289   -------LALKHSKPGLLSMA------------------NAG---KNTNGSQ-FFITTVV
AAT91260   -------LALKHSKXGLLXMA------------------NAG---KNTNGSQ-FFITTVV
NP_868477  ----------QHTTPGLLSMA------------------NSG---RNTNGSQ-FFITVAP
NP_867717  KHD----------GPGVLSMA------------------NAG---PNTNGSQ-FFITHEA
NP_867158  QHN----------RTGVLSFA------------------KSSD----DTNDSQ-FFITEVE
NP_865515  ----------HHALRGSVVMAK--------------IPMGEGRFIENSASSQFAIFFLP
NP_992233  ----------LKNTRGTLAMA------------------RTND---PHSATAQ-FFINVAD
NP_991569  ----------LRNLRGTISMA------------------RTAD---KDSATSQ-FFLNVAD
NP_280624  THD----------GPGVLSMA------------------NSG---PDTNGSQ-FFITLDA
BAC18575   AAQEDLNTP--VIYERGTIAMA------------------N-AG---QDTNGSQ-FFLNYED
```

```
BAC16839       RFD-----------RAYLLAMA----------------NAG----PGTNGSQ-FFITTTP
BAB82272       FPN-------NLKHSRGVISMA--------------RAMN---FDSAGSQ-FFIMHEN
BAB99042       AT--DLTTP--VIYERGTIAMA--------------N-AG---ADTNGSQ-FFLNYED
BAB97427       RFD----------RAYLLAMA---------------NAG----PGTNGSQ-FFITVTP
BAC08372       R---YLEHPVLPFSAYGTVALARP-N----------------DDPNGGSSQFFFLLFEP
BAC07690       ------KVSPVLNHRRGAVAMARS-Q---------------LPDSA--SAQFYIALD-
YP_072215      -----------LRNLRGTISMA--------------RTAD---KDSATSQ-FFLNVAD
YP_069574      -----------LKNTRGTLAMA--------------RTND---PHSATAQ-FFINVAD
NP_778719      MCH----------ERGSLSMA---------------NAG----PNTNGSQ-FFITHVA
NP_245881      -----------LSNKRGTIAMA--------------RTSD---PHSATAQ-FFINVAD
NP_245880      -----------LKNLRGTVAMA--------------RTSD---PHSATAQ-FFINTVD
NP_354667      ------------FTRGVVGMARS-------------------SDPNSANSQFFIMFADG
NP_354666      ------------HVRGTCSMARS-------------------QSPNSANSQFFICFTDS
NP_298502      VSH----------ERGSLSMA---------------NAG----PNTNGSQ-FFITHVA
AAN39296       ----------KHTGPGILSMA---------------NAG----PNTNGSQ-FFLCTAT
AAQ24380       ----------KHTGKGILSMA---------------NAG----PNTNGSQ-FFLCTAK
ZP_00353225    RFD----------KKYLLAMA---------------NAGKIAGHGTNGSQ-FFITVAT
ZP_00244808    ----------LKNDKYTLAMA---------------RTNA---PHSASSQ-FFINATD
ZP_00244807    ----------LRNERGSIAMA---------------RTMD---PNSATAQ-FFVNLTN
ZP_00358245    LTH----------EAGVISMA---------------NAG----PNTNGSQ-FFITHTP
ZP_00350273    ----------LQNKTYTIAMA---------------RTPA---PDSASSQ-FFINVAD
ZP_00129494    ----------LKNVRGTIAMA---------------RTAA---PHSATSQ-FFINLVD
ZP_00130259    ----------LKNEEYTVAMA---------------RTQD---PHSATAQ-FFINVKD
ZP_00136576    ----------LLNERGTLAMA---------------RTGV---VDSATSQ-FFINLTD
NF01760157     ----------NRNDRGTISMA---------------NAG----PNTGGSQ-FFINLVN


CSHUA          TE-------WLDG--------------------KHVVFGKVKEG-------------MN
NP_839944      TE-------WLDG--------------------KHVAFGKVKER-------------VN
NP_115861      KQP------HLDM--------------------KYTVFGKV---------ID--G--L
NP_570981      KQP------HLDM--------------------KYTVFGKV---------ID--G--L
NP_057143      PTQ------WLDG--------------------KHTIFGRV---------CQ--G--I
CSHUB          TA-------WLDG--------------------KHVVFGKVLEG-------------ME
566681         TD-------WLDG--------------------KHVVFGEVTEG-------------LD
A57545         AE-------HLDF--------------------KHVVFGFVKDG-------------MD
A41581         TD-------WLDG--------------------KHVVFGHVKEG-----------MD
A54204         PT-------WLDG--------------------KHVVFGKVIDG------------MT
564705         SCA------YLDK--------------------KHTIFGRV---------VG--G-FD
D38552         PTP------WLDN--------------------KHTVFGRV---------TK--G--M
NP_624311      -------LDYLDGV------------------HTVFGEVTEG-------------M
G2708309       CD-------WLDG--------------------KHVVFGKII--D-----------GL
A45981         TP-------HLDG--------------------KHVVFGQVIK------------GI
J40763         TPH-------LDG--------------------HVVFGQVIS------------GQ
A47328         APH-------LDG--------------------VHVVFGLVIS-----------GF
XP_531396      TE-------WLDG--------------------KHVVFGKVKEG-----------MN
XP_525294      TE-------WLDG--------------------KHVVCGKAKEG-----------KN
XP_523512      T--------VVGQ--------------------KHVVSGKVKEG-----------MN
XP_507866      TD------CVGI--------------------IPRARPPSLDP-----------LP
XP_517783      TE-------WLDG--------------------KHVLFGKVKEG-----------RN
XP_517773      TE-------CLDG--------------------KHVAFGKVKER-----------MN
XP_526904      TG-------WLDG--------------------THVVFGKAKEG-----------IN
XP_516556      -------------------------------CALPRLS------------------
```

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KP_526001    ---------------------------------------------VKED------------MD
KP_516021    KQP------HLDM--------------------KYTVFGKV---------ID--G--L
KP_515886    TPH-------LDG--------------------HHVVFGQVIS-------------GQ
KP_525218    TE-------WLDG--------------------KHVAFGKVKEH------------VN
KP_507684    TE-------WLDG--------------------KHVVFGKVKEG------------MN
KP_524688    CD-------WLDG--------------------KHVVFGKII--D----------GL
KP_513346    TD-------WLDG--------------------KHVVFGEVTEG-----------LD
KP_524598    TE-------SLDG--------------------QHVVFGNMKEG-----------MN
KP_515004    EVS------LLAS--------------------TMMILSFFWSSWDLWMWPLQ--G--Q
KP_523437    TE-------WLNA--------------------STWSPARXKKA-----------XR
KP_520485    ----------G----------------------HGALWSRS---------------
KP_519076    TE-------WLDG--------------------KHVVFGKVKEG-----------MN
KP_527705    GV-------VGWQ--------------------ACSLWQGERRH-----------EY
KP_527529    -----------------------------------------------------
KP_518678    -------LDYLDGV------------------HT---------------------
CSMSA        TE-------WLDG--------------------KHVVFGKVKEG-----------MN
NP_598845    TD-------WLDG--------------------KHVVFGHVKEG-----------MD
AAH58369     PTQ------WLDG--------------------KHTIFGRV---------CQ--G--I
A56861       TS-------WLDG--------------------KHVVFGKVLEG-----------MD
A40047       PT-------WLDG--------------------KHVVFGKVLDG-----------MT
NKCR_MOUSE   APH-------LDG--------------------VHVVFGLVIS------------GF
AAH61645     KQP------HLDM--------------------KYTVFGKV---------ID--G--L
BAC41068     SCA------YLDK--------------------KHTIFGRV---------VG--G-FD
BAC34686     TP-------HLDG--------------------KHVVFGQVIK-----------GL
BAB30711     -------LDYLDGV-----------------HTVFGEVTEG-------------M
BAB25645     CD-------WLDG--------------------KHVVFGKII--D----------GL
BAB23880     CD-------WLDG--------------------KHVVFGKII--D----------GL
NF00527760   AE-------HLDF--------------------KHVVFGFVKDG-----------MD
NF01138503   PTP------WLDN--------------------KHTVFGRV---------SK--G--M
NF00510830   TD-------WLDG--------------------KHVVFGEVTEG-----------LD
NF00510932   PTQ------WLDG--------------------KHTIFGRV---------CQ--G--I
NF01595779   TE-------WLDG--------------------KHVVFGKGKEV-----------MN
NF02014914   TE-------WLDG--------------------KHVVFEKVKEG-----------MN
NF01930249   TE-------WLYG--------------------KHVVFGKMKEG-----------MN
NF01929278   TE-------WLDG--------------------KHVVFGKVKES-----------MN
NF00523006   TE-------WLDG--------------------KHVVFGKVKEG-----------MN
NF00508381   TE-------WLDG--------------------KHVVFGKVKEG-----------MN
NF01215170   KQP------HLDM--------------------KYTVFGKV---------ID--G--L
CSRTA        TE-------WLDG--------------------KHVVFGKVKEG-----------MS
NP_783638    KQP------HLDM--------------------KYTVFGKV---------ID--G--L
NF01612782   TP-------HLDG--------------------KHVVFGQVIK-----------GL
NF01612825   TD-------WLDG--------------------KHVVFGEITDG-----------LD
NF01607941   TP-------HVDG--------------------KRVVFGQVMK-----------GL
NF01607846   TE-------WLGG--------------------KHVVFGKVKDG-----------TN
NF01609144   PA-------WLDG--------------------KHVVFGKVLDG-----------MT
NF01608897   TS-------KKIT--------------------ISDCGQLLVSL-----------IC
NP_758443    TD-------WLDG--------------------KHVVFGHVKEG-----------MD
AAH61971     TS-------WLDG--------------------KHVVFGKVLEG-----------MD
G2828710     TPH-------LDG--------------------HHVVFGQVIS-------------GQ
B38388       TA-------WLDN--------------------KHVVFGEVVEG-----------LD
AF132148     -------LTSLDGN-----------------HCVIGEVVEG-------------H
NP_611113    SCK------HLDG--------------------KHTIFGKL---------VG--G-LD
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```
NP_611695            TS-------WLDG----------------------------RHVVFGKILSG--------------MN
NP_610590            AQP------NLDL----------------------------KYTLFGRV---------ID--G--F
NP_648697            TT-------WLDN----------------------------KHVVFGKVVEG--------------MD
NP_648508            -------TPELQNK--------------------------NTLFGKIT-G--------------D
NP_648338            C-------ENLNG----------------------------TNVVVGRVLRG-------------L
NP_476656            AK-------WLDG----------------------------KHTVFGKVLEG-------------M
NP_523874            PTQ------WLDG----------------------------KHTIFGRV---------YT--G--M
NP_523773            TD-------WLDN----------------------------KHVVFGHVISG-------------AE
NP_610224            CN-------FLDG----------------------------KHVVFGRVL--D------------GL
NP_733246            APH-------LDN----------------------------IHVVFGQVIS-------------GQ
NP_611935            PTP------WLDN----------------------------KHTVFGRV---------YR--G--M
EAA03569             C-------PHLNG----------------------------TNVVVGYVIRG-------------G
EAA03948             TS-------WLDG----------------------------RHVVFGKVLEG-------------MN
EAA04625             CN-------FLDY----------------------------KHVVFGRVL--D------------GL
EAA06299             TS------WLND-----------------------------RHVVFGSVVEG-------------MD
EAA08127             APH-------LDN----------------------------VHVVFGHVVS-------------GQ
EAA09839             SCK------HLDG----------------------------KHTIFGKL---------VG--G-LE
EAA10133             PTP------WLDN----------------------------KHTVFGRV---------HK--G--M
EAL39647             -------LTSLDGR--------------------------HTVIGEVTEG-------------H
EAA13913             AQP------ALDL----------------------------KYTLFGQV---------ID--G--F
EAA13914             AP-------WLDG----------------------------KHTIFGKVLDG-------------Q
EAA14200             TD-------WLDG----------------------------KHVVFGNVISG-------------AD
EAA01474             IILR-----EMRG----------------------------FTGIFAFVVEG-------------L
KP_321072            IILR-----EMRG----------------------------FTGIFAFVVEG-------------L
KP_320182            PTQ------WLDG----------------------------KHTIFGRI---------HT--G--M
KP_319131            AP-------WLDG----------------------------KHTIFGKVLDG-------------Q
KP_311949            LP-------------------------------------------------------------CQ
CAI11739             AT-------WMDH----------------------------KYVAFGQLVEG-------------T
AAQ91263             TN-------WLDG----------------------------KHVVFGKVVDG-------------LN
NP_001004626         TE-------WLDG----------------------------KHVVFGQVKEG-------------ME
NP_001002065         TP-------HLDG----------------------------KHVVFGQVLK-------------GM
NP_957499            CD-------WLDG----------------------------KHVVFGKVV--D-----------GL
AAQ94596             CD-------WLDG----------------------------KHVVFGKVV--D-----------GL
NP_998184            TP-------WLDG----------------------------KHVVFGKILEG-----------MD
NP_001002146         KQP------HLDM----------------------------KYTVFGKI---------ID--G--L
AAQ91264             TS-------WLDG----------------------------KHVVFGQVVEG-------------LD
AAH59458             TS-------WLDG----------------------------KHVVFGQVVEG-------------LD
AAH56814             -------VDYLDGV--------------------------HTVFGEVTEG-------------M
AAH62863             TS-------WLDG----------------------------KHVVFGQVVEG-------------LD
NP_998629            TPH-------LDG----------------------------IHVVFGQVIT-------------GQ
NP_957285            SCA------YLDR----------------------------KHSVFGRV---------VG--G-LE
NP_506749            TA-------WLDG----------------------------KHVVFGRVVEG-------------LD
NP_506561            TP-------WLDG----------------------------GHVVFGQVTDG-------------MS
NP_504522            GPS------VVDG---------------------------CPIGDVIEG-------------I
NP_506751            TE-------WLDG----------------------------KHVVFGRVVEG-------------LD
NP_497745            APH------CNG-----------------------------KHVVFGEVVK-------------GQ
NP_499828            TT-------WLDG----------------------------KHVVFGKVIEG-------------MD
NP_497257            TS-------WLDG----------------------------KHVVFGKILEG-------------MD
NP_509506            VPH-------LDG----------------------------KHCVFGEVIK-------------GV
NP_503034            TD-------WLDG----------------------------KHVVFGHVVEG-------------MN
NP_501118            PTQ------HLDG----------------------------KHTIFGRV---------AA--G--M
NP_496562            G------APELDKK--------------------------HTIFGKVT-G-------------P
```

```
NP_495855        TD-------FLDN--------------------KHVVFGRVL--D------------GM
NP_496337        PCK------YLDR--------------------KHTIFGRL---------VG--G-QD
NP_495417        KQA------HLDM--------------------KYTLFGKV---------ID--G--F
NP_493378        PAD------WLDG--------------------KNTLFGEV---------TA--G--M
NP_492343        -------LDYLDDQ-------------------HTIFGQVTEG------------L
NP_493624        TP-------WLDG--------------------RHVVFGKILEG------------MD
T06073           TD-------WLDG--------------------KHVVFGQVVEG------------LD
NP_175776        -------LDYLDGK------------------HTVFGQIAEG-------------F
NP_567029        TS-------WLDG--------------------HHVVFGKVLSG------------ME
NP_201554        SAT------HLNY--------------------KHTVFGGV---------VG--G-LA
NP_200679        TS-------WLDG--------------------RHVVFGKVVTG------------MD
NP_181407        CD-------WLDN--------------------KHVVFGRVLG-D------------GL
NP_191166        TS-------WLDG--------------------KHVVFGKVVDG------------YN
NP_171696        KQP------HLNG--------------------LYTIFGKV---------IH--G--F
NP_195222        AS-------WLEG--------------------EHVVLGKVIQG------------MD
NP_195213        TS-------WLDG--------------------KHVVFGQVVKG------------LD
NP_196816        TS-------WLDG--------------------RHVVFGQVIEG------------ME
NP_188932        YG------LQVDG--------------------DHVVIGKVVEG------------L
NP_191762        TS-------WLDN--------------------KHVVFGQVIEG------------MK
NP_190046        ATP------WLDN--------------------KHTVFGRV---------VK--G--M
NP_180557        TS-------WLDG--------------------RHVVFGKVVQG------------MD
NP_181157        PQP------SLDG--------------------KHTIFGRV---------CR--G--M
NP_179251        TS-------WLDG--------------------KHVVFGQVVEG------------LN
NP_179709        TD-------WLDG--------------------KHVVFGQVVEG------------LD
AAK02067         TS-------HLDG--------------------KHVVFGRVTKG------------M
P82869           RNSGLGGLSFDEGQ------------------FSVFGYTIAG------------K
T05352           Y-------ESLDSLL-----------------NNVVFGKLIQG------------K
T49181           Q-------PHLDG--------------------KHVVFGKVVEG------------M
T05314           -------CDWLDKK------------------HTIFGKVT-G------------D
CSZPA            TP-------WLDG--------------------KHVVFGEVTEGM-----------D-
E313994          PTP------WLDG--------------------KHTIFGRV---------VS--G--L
E1335804         TP-------WLDG--------------------HHVVFGEVLSG------------YD
E1331567         CD-------FLDG--------------------KHVVFGEVI--E------------GY
S62327           TP-------HLDG--------------------KHVVFGKVIQ------------GK
S62590           PAK------HLDN--------------------KHTIFGRV---------VG--G-LN
E1294518         LTP------WLDG--------------------KHTIFARA---------YA--G--L
T39728           -------LEGLDER------------------YPIYGQVAEG-------------F
E1263915         -------TPEWNGK------------------QTLFGRVV-G------------D
CSBY             CP-------WLDG--------------------KHVVFGEVVDGY-----------D-
S30507           CP-------WLDG--------------------KHVVFGEVTKGM-----------D-
S12324           EAS------WLDG--------------------KHVVFGQVVDG------------MD
S57050           AP-------HLNG--------------------KHSIFGQVVHG------------K
S48567           TP-------HLDG--------------------KHVVFGEVIQ------------GK
CSBYC3           DGN-----EELDG--------------------KSVVFGQITSG------------LD
S63359           T--------PLEG--------------------ESVVFGQVTAG------------LK
S38324           CP-------WLDG--------------------KHVVFGEVLDG------------MD
TcCyP19          TQ-------WLDG--------------------KHVVFGQVLEG------------IE
TcCyP20          PCP------SLDT--------------------KHTAFGCVDL------AWND--GESE
TcCyP21.1        TP-------WLDG--------------------RHVVFGKVVEG------------MD
TcCyP21.3        TE-------WLDG--------------------KHVVFGQITKG------------YE
TcCyP24.3        CP-------WLDG--------------------KHVVFGQVLRG------------F
TcCyP26          N-------EHLDG--------------------KYVVCGQVLEG------------W
```

```
TcCyP28        TP-------WLDG--------------------KHVVFGRVTEG------------ID
TcCyP30        EAP------HLNG--------------------TCICFGRVVKG-------------F
TcCyP35.1      MS-------WMNG--------------------RYVAFGRVIDG-------------M
TcCyP35.3      SEE-----KALNG--------------------RHVCFGRVVRG------------LD
TcCyP40        AQ-------HLTG--------------------RHVVFGKVVRG-------------M
TcCyP110       VAP------WLNGK------------------HTVFGFVVS-------------GK
AAT44353       TS-------WLDG--------------------KHVVFGRVTDG------------MN
EAL37431       CP-------WLDG--------------------KHVVFGKVLEG------------ME
EAL37232       SLP------QLNG--------------------EYVIFGRL---------ID--G--F
EAL37110       TP-------HLDG--------------------RHVVFGKLVD-------------D
EAL36265       -------LSHLDGN------------------HVIFAQVEEG-------------I
EAL35294       CS-------WLDN--------------------KHVVFGQLLGHD----------SF
J68268         TA-------WLDG--------------------KHVVFGQVLDG-----------MN
J68269         TQ-------WLDG--------------------KHVVFGQVLEG-----------MN
AAQ15626       TP-------WLDG--------------------KHVVFGQVTKG-----------YE
AAB07896       TQ-------WLDG--------------------KHVVFGQVLEG-----------MD
AAK14937       TQ-------WLDG--------------------KHVVFGEVVEG-----------KD
CAC18541       CD-------FLDG--------------------KHVVFGQVV--D----------GM
A45000         TS-------WLDG--------------------KHVVFG-EVESG----------ED
Q9Y0F5         SLP------QLNG--------------------EYVIFGKL---------ID--G--F
J47811         TE-------WLDG--------------------KHVVFNRVVEG-----------MN
J50388         CD-------WLDG--------------------KHVVFGRVVDG-----------QN
L46884         CS-------WLDG--------------------KHVVFGKVVSGI----------D-
M93420         CD-------WLDG--------------------KHVVFGRVVDG-----------QN
J50389         NP-------WLDG--------------------KHVVFGKVVEG-----------MS
G992633        TS-------WLDG--------------------KHVVFGKVVEG-----------MN
E323073        CD-------WLDG--------------------KHVVFGRVVDG-----------QN
G52758         TP-------WLDG--------------------RHVVFGKVLDG-----------MD
E1203753       TS-------WLDG--------------------KHVVFGQVLEG-----------YE
CAB58290       QP-------QLDK--------------------THVVFGRVYSG------------I
CAB58298       TP-------WLDG--------------------KHVVFGRVIDG-----------LD
AAF69736       AT-------HLTG--------------------RHVVFGRVVRG------------M
AAD46565       TP-------WLDG--------------------RHVVFGKVLDG-----------MD
A53522         TE-------WLDG--------------------RHVVFGKIT-------------T
NP_702112      -------AEYLNNK------------------NTLFGKVA-K-------------H
NP_701512      MP-------ILHK--------------------HNVVIGTVLKG-----------MN
NP_701389      CP-------WLDK--------------------RHVVLGHLEYG------------F
NP_701030      RQP------HLNG--------------------IYPVFGKV---------ID--G--M
NF01067443     TH-------TYNN--------------------KNIIIGQVIKN-----------M
NF01067965     CE-------WLDG--------------------KNVVFGRIIDND----------SL
NF01065889     PCP------WLDF--------------------KHTVFGKV---------TQ--G--S
NF00926916     CP-------WLDG--------------------KHVVFGKVIEG-----------MN
G52760         TP-------WLDG--------------------RHVVFGEVVEG------------L
J10322         CE-------WLDG--------------------KNVVFGRIIDND----------SL
CAB39039       CP-------WLDG--------------------KHVVFGKVIEG-----------MN
CAD51648       PLP------HLDG--------------------KHTIFARV---------SK--N--M
NF01497907     CP-------WLDG--------------------KHVVFGKVIEG-----------MN
NF01497552     PCP------WLDF--------------------KHTVFGKV---------TQ--G--T
NF01497379     TP-------WLDG--------------------RHVVFGEVIEG------------I
NF01497199     CE-------WLDG--------------------KNVVFGRIIDND----------SL
NF01496968     IK-------KYDN--------------------KNVIIGRVIKN-----------M
NF01495390     MP-------ILHK--------------------HNVVIGTVLKG----------MD
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```
NF01495324        PLP------HLDG---------------------------KHTIFARV----------SK--N--M
NF01493974        CP-------WLDK---------------------------KHVVFGNLEYG-------------F
NF01493918        -------SECL------------------------------------------------------
E316521           CP-------WLDG---------------------------KHVVFGEVVDGF-----------D-
CAC35733          -------APQLDGK--------------------------HTIFGQVQEG-------------F
J47812            TD-------WLDG---------------------------KHVVFGRVVDG-----------MD
J47813            TE-------WLDG---------------------------KHVVFGRVVEG-----------MN
G2624966          CP-------WLDG---------------------------KHVVFGQVVE-----------GY
E1317902          SCS------YLDG---------------------------KHSIFGRV----------VG--G-TG
E1319851          SCS------YLDG---------------------------KHTIFGRV----------VG--G-TE
G3057040          SCS------YLDG---------------------------KHTIFGHV----------VG--G-TG
AAB81959          TE-------WLDG---------------------------KHVVFGKVKEG----------MN
AF023860          TE-------WLDG---------------------------KHVVFGKVKEG----------MN
AAB81961          TE-------WLDG---------------------------KHVVFGKVKEG----------MN
AAF22215          TE-------WLDG---------------------------KHVVFGRVKEG----------MS
AF243140_1        TE-------WLDG---------------------------KHVVFGKVKEG----------MN
AF252388          TD-------WLDG---------------------------KHVVFGHVKEG----------MD
CSBOAB            TE-------WLDG---------------------------KHVVFGKVKEG----------MN
NF01922219        TD-------WLDG---------------------------AHVVFGRVVDHC---------LE
NF01725587        TE-------WLDG---------------------------KHVVFGSVVEG----------MD
NF01897292        EAR------FLDD---------------------------EHVVFAKETVQ-----------S
CSHYAC            TE-------WLDG---------------------------KHVVFGKVKEG----------MN
NF00071027        TE-------WLDG---------------------------KHVVFGKVKEG----------MN
NF01951405        SCA------YLDK---------------------------KHTVFGRV----------VG--G-FE
NF01059378        TE-------WLDG---------------------------KHVVFGKVKEG----------MN
NF01105745        TS-------WLDG---------------------------KHVVFGRVVDG----------MD
NF00495096        TE-------WLDG---------------------------KHVVFGKVKEG----------MN
NF01053198        TE-------WLDG---------------------------KHVVFGQVVEG----------LD
CSPGA             TE-------WLDG---------------------------KHVVFGKVKEG----------MN
NF01950932        KQP------HLDM---------------------------KYTVFGKV----------ID--G--L
NF01951326        TS-------HLDG---------------------------KHVVFGQVIK-----------GM
NF00909389        TE-------WLDG---------------------------KHVVFGQVIEG----------LN
NF01286555        TE-------WLDG---------------------------KHVVFGRVVEG----------MN
NF01737225        TS-------WLDG---------------------------KHVVFGQVIEG----------MD
NF01590839        TP-------WLDG---------------------------KHTIFGRVVEG-----------Q
AAH51602          PTP------WLDG---------------------------KHSIFGRV----------SH--G--L
AAT69672          TS-------WLDG---------------------------KHVVFGQVIEG----------MD
AAH54186          TS-------WLDG---------------------------KHVVFGQVIEG----------MD
AAH54168          TP-------WLDG---------------------------KHVVFGKVLEG----------TE
NF01208049        SCT------YLDK---------------------------KHTVFGRV----------VG--G-FD
NF01844632        TPH------LDG----------------------------LHVVFGQVIS----------GQ
NF01844615        -------ADELNNK--------------------------HTIFGKVT-G-----------D
NF01915773        PTQ------WLDG---------------------------KHSIFGRV----------SH--G--L
NF01915657        KQP------HLDM---------------------------KYTVFGKV----------ID--G--L
NF01557564        TA-------HLDG---------------------------KHVVFGQVLK-----------GY
AAH41536          TS-------WLDG---------------------------KHVVFGRVVEG----------MD
AAH85963          TPH------LDG----------------------------HHVVFGQVIS----------GQ
AAH64250          CD-------WLDG---------------------------KHVVFGKVI--D---------GL
AAH61335          TA-------HLDG---------------------------KHVVFGQVLK-----------GY
AAH59741          TS-------WLDG---------------------------KHVVFGTVIDG----------MD
AAH67931          TPH------LDG----------------------------LHVVFGQVIS----------GQ
AAH44993          SCT------YLDK---------------------------KHTVFGRV----------VG--G-FD
```

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A40516          TA-------WLDG--------------------KHVVFGKVLEG-------------MD
CYPB_BOVIN      TA------WLDG---------------------KHVGFKVLEG-------------MD
AAR19276        TE------WLDG---------------------KHVVFGQVRGG-------------MD
A46579          TP------HLDG---------------------KHVVFGQVIK-------------GM
AAV40687        TP------HLDG---------------------KHVVFGEVIK-------------GR
NF01637248      TS------WLDG---------------------AHVVFGEVVEGF-----------D-
CYPR_BOVIN      AE------RLDF---------------------KHVVFGFVKDG-------------MD
CYPR_CALVI      AQ------WLNG---------------------KHTVFGKVIEG-------------M
E1317906        PCK-----YLDR---------------------KHTIFGRL---------VG--G-QD
AAB87888        TA------WLDN---------------------KHVVFGEVVEG-------------LD
AAB87889        TA------WLDN---------------------KHVVFGEVVEG-------------LD
Q9XZZ5          TS------WLDG---------------------KHVVFGRVVEG-------------LD
S63995          TS------WLDN---------------------RHVVFGSVVEG-------------MD
G1703696        TS------WLDG---------------------KHVVFGAVTQG-------------LD
J36797          TE------WLDG---------------------KHVVFGRVVEG-------------LD
AF017738        -------TPDLDKK-------------------HTLFGKIV-G------------N
L37292          APH------LNN---------------------IHVVFGKVVS-------------GQ
AAS01736        TE------WLDG---------------------KHVVFGQVVEG-------------MD
AAO61985        SS-------FTS---------------------SPLIGLKSFS-------------L
CAC80550        TE------WLDG---------------------KHVVFGRVVEG-------------MD
AAO63777        TE------WLDG---------------------KHVVFGRVVEG-------------MN
S53522          CP------WLDG---------------------KHVVFGKVVAG-------------QE
E280557         TP------WLDG---------------------LHNIFGIVLEG-------------A
J70827          APH------LNN---------------------IHVVFGKVVS-------------GQ
J70884          APH------LNN---------------------IHVVFGKVVS-------------GQ
J55771          TN------WLDG---------------------RHVVFGELLE-------------G
D1024669        TS------WLDG---------------------KHVVFGKVVKG-------------MS
227879          TD------WLDG---------------------KHVVFGFVTEG-------------MD
AAD48910        TS------WLDG---------------------RHTVFGEVIEG-----------MD
AAO51811        AE------WLDG---------------------KNVVFGKVI--D-----------GL
AAF76472        KQP-----HLNG---------------------LYTIFGKV---------IH--G--F
AAP80861        TS------WLDG---------------------KHVVFGKVLSG-------------MD
AAP73848        CE------WLDN---------------------KHVVFGRVLG-D-----------GM
BAB62329        PCQ-----SLDG---------------------KHTIFGRV---------SK--G--M
AAL75728        AP------WLDG---------------------RHVAFGRVVAG-------------M
S48017          CS------WLDG---------------------KHVVFGRVVEG-------------MD
S48018          TT------WLDG---------------------KHVVFGKVVDG-------------YT
BAD53622        TS------WLDG---------------------KHVVFGKVLSG-------------MD
BAD53621        TS------WLDG---------------------KHVVFGKVLSG-------------MD
BAD53620        LT------RLDG---------------------KHVVFGKVLSG-------------MD
XP_507188       GPCP-----ELDG--------------------QNIVFGTVLEGMN------V--ITSI
XP_483750       ATP-----WLDN---------------------KHTVFGRV---------VK--G--M
XP_483749       VPG---AIEWVYR--------------------QGDVKPKLAVSDR-----------NT
XP_482125       ELTPSN-ANILDGR-----------------YAVFGYVTEN-------------E
XP_478742       RNSGLGGISFDEGQ-----------------FSVFGYTTDG-------------R
XP_478741       RNSGLGGISFDEGQ-----------------FSVFGYTTDG-------------R
NP_385690       --------PWLNKQ------------------YSVWGQVVEG-------------M
NP_385689       --------DFLNGQ------------------YTVVGKVVEG-------------M
NP_349373       SP---HLDG-----------------------DYAAFGRVTE-------------GI
BAD45990        -------VDYLDDK------------------HTVFGMVAEG-------------F
BAD45991        -------VDYLDDK------------------HTVFGMVAEG-------------F
NP_908419       ---------KLEVD------------------QEQVGVVPNG-------------T
```

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NP_919903        ER-------QQDG------------------MLRHPADGSQWRN-------------ID
BAD35839         TP-------HLDG------------------KHVVFGRVIKG--------------M
AAU87301         TS-------WLDG------------------KHVVFGQVVEG-------------LE
CAG90469         TS-------WLNN------------------AHVVFGEVVDG-------------FD
CAG88330         CP-------WLDG------------------KHVVFGEVVDGF------------D-
CAG88054         --------TENLKSFS----------------QVYFGKVVEG-------------F
CAG86818         KAP------WLDN------------------KHTIFGEV---------TD--G--F
NF01109982       TG-------WLDG------------------KHVVFGKVVEG------------LD
NF00686348       --------FSLDGE------------------YTPIGRVVSG-------------M
NF00686217       --------FSLDGE------------------YTPIGRVVSG-------------M
NF02138644       TS-------WLDG------------------KHVVFGKVVDG------------YS
NF00926921       TA-------WLDG------------------KHVVFGEVLEG------------YD
NF00909931       TE-------WLDG------------------KHVVFGQVVEG------------LN
NF00956595       TD-------WLDG------------------KHVVFGELMEG------------MD
NF02035209       TD-------WLDG------------------KHVVFGQVVDG------------ME
NF01329591       NS-------FLNRSA------MD---------AGYAVFGKVTK-----------GM
CAG86678         EHQN-----ILGDSS----------------KYTAIGMVIDG------------Y
CAG86274         ECS------WLDG------------------KHVVFGQIING------------F
CAG85447         --------TPEFNNN-----------------YVLFGKIM-G------------D
CAG85287         CP-------WLDG------------------AHVVFGEVIEGM-----------D-
CAG84900         TP-------HLNG------------------KHVVFGEVIQ------------GK
CAG84822         QP-------HLTG------------------KHTVFGRVIHG------------K
CAG84723         VP-------HLDG------------------KHVVFGEVV--E----------GF
CAG79895         TS-------WLDG------------------KHVVFGEVLEG------------QD
CAG78939         RAP------HLDG------------------KHTVFGRV---------VD--N-SF
CAG82238         TP-------HLDN------------------KHVVFGKLLS------------GK
CAG81980         CP-------WLDG------------------KHVVFGEVTNGM-----------D-
CAG81971         TP-------WLDG------------------AHVVFGEVTDGM-----------D-
CAG81844         CP-------ELDG------------------SHVVFGHVI--E----------GM
CAG84141         --------IPFSG-------------------TVIGKIT-G------------D
CAG84091         SP-------HLDG------------------KHVAFGKVVAG------------K
CAG83821         YP-------HLST------------------SNTVFGRLLEPAALEYLKALGDIPVD
CAG76968         NA-------FLDHGQ------RD---------FGYAVFGKVVK-----------GM
CAG62671         SP-------HLTG------------------KHSIFGRVIHG------------K
CAG76052         ND-------FLNFRS------ERA-------DGWGYCVFAEVTE----------GM
CAG59915         CP-------WLDG------------------KHVVFGEVTKGM-----------D-
CAG58658         CP-------WLDG------------------KHVVFGEVSEGY-----------D-
G3777556         TS-------WLDG------------------KHVVFGKVVEG------------MN
AAF65770         TE-------WLDG------------------KHVVFGKVVEG------------MD
BAA25755         TD-------WLDG------------------KHVVFGQVVDG------------LN
CSTO             TE-------WLNG------------------KHVVFGQVVEG------------MD
CSRP             TS-------WLDG------------------KHVVFGQVVEP------------MD
CSZM             TP-------WLDG------------------KHVVFGQVVEG------------MD
CYPH_ALLCE       TA-------WLDG------------------KHVVFGQVVEG------------MD
AAG01536         TE-------LLDR------------------KAVVFGQVVEG------------FD
AAB51386         TE-------WLDG------------------KHVVFGQVVEG------------LD
S54833           TE-------WLDG------------------KHVVFGQVVEG------------LD
X85185           TE-------WLDG------------------KHVVFGQVVEG------------MD
Y08273           TA-------WLDG------------------KHVVFGQVVEG------------MD
Y08320           TS-------WLDG------------------KHVVFGQVVEG------------MD
E1226445         TE-------WLDG------------------KHVVFGKVIEG------------MN
L32095           TP-------WLDN------------------RHVVFGHVIEG------------LD
```

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CAA10766       CD-------WLDN-------------------KHVVFGRVLG-E------------GL
AAF69796       TS------WLDG--------------------KHVVFGEVSSGQ-----------D-
AAF69795       TS------WLDG--------------------KHVVFGEVSSGQ-----------D-
CSNCM          TS------WLDG--------------------RHVVFGEVADDE-----------SM
NF01287451     -------TDYLDGK------------------AAIFGKVVEG-------------F
NF01527836     KAP------HLDG-------------------LNTVFGKL---------IG--DESL
NF01488902     PTP------WLDG-------------------KHTIFGRV---------KK--G--M
NF00648058     TP-------HLDG-------------------KHVVFGEVLS------------GK
NF01487278     TS------WLDG--------------------KHVVFGEVLEG-----------YD
NF01486260     KTP------WLDN-------------------KHTIFGRG---------VQ--G--L
NF00904102     TS------WLDG--------------------KHVVFGEVLEG-----------YD
NF01484914     -------TDYLDGK------------------AAIFGKVVEG-------------F
NF01484255     TP------FLDG--------------------KHVVFGKVV--D-----------GM
NF01483993     -------ADELTGK-----------------NTMFGRVA-G-------------D
NF01533203     TE------WLDG--------------------KHVVFGQVVYG-----------MD
NF01483647     PAS------HLDR-------------------KHTIFAKV---------IE--G-QD
571849         TS------WLNG--------------------RHVVFGEVADQE-----------SL
J17900         TS------WLDG--------------------RHVVFGKVIEG-----------MD
NF00873669     TS------WLDG--------------------KHVVFGEVIDGM----------N-
NF01527595     AP------WLDG--------------------KHVVFGEVIEGM----------D-
NF01539217     TS------WLDG--------------------KHVVFGEVADDE----------SL
D1035365       TA------WLDG--------------------KHVVFGEVLEG-----------YD
YP_116397      NA------FLNHTA------PSP-------SGWGYAVFGQVVD------------GT
YP_119877      SQ----LPP----------------------QYTIFGTVDE-N-----------SM
CAD25897       QHH------LDG--------------------KHVVFGNVSG---------------
CAD26352       TQ------WLDE--------------------KHVVFGEVVEGM----------D-
AAD17998       TP------WLDG--------------------KHVVFGEVLEG-----------YD
G2959712       TA------WLDG--------------------KHVVFGKVCKG-----------MD
CSNCC          TS------WLDG--------------------RHVVFGEVADDE-----------SM
AJ006689       TS------WLDG--------------------KHVVFGEVADEK-----------SY
AAF28343       PTP------WLDG-------------------KHTIFGRV---------KS--G--M
AAD50375       TP------HLNG--------------------GHTVFGEVVE------------GF
AAK21908       TP------WLDG--------------------KHVVFGEVSKG-----------ME
AAG13968       TS------WLDG--------------------KHVVFGEVVSGF-----------ED
BAB58884       TS------WLDG--------------------KHVVFGEVVSGF-----------ED
E1363908       TS------WLDG--------------------KHVVFGEVIDGM----------N-
AAD16142       TS------WLDG--------------------KHVVFGEVADAE-----------SM
G1764137       TP------WLDG--------------------KHVVFGKVIEGY----------DQ
Z32674         TS------WLNG--------------------HHVVFGEVADQE-----------SL
JT0686         TS------WLDG--------------------RHVVFGEVADEE-----------SM
CSCK           CP------WLDG--------------------KHVVFGEVTDGL----------D-
NP_986490      CP------WLNG--------------------KHVVFGEVSEGM----------D-
NP_985014      CP------WLDG--------------------KHVVFGEVTKGM----------D-
NP_984799      AP------HLNG--------------------KHSIFGQVIHG-----------K
NP_984183      TP------HLDG--------------------KHVVFGEVIQ------------GK
NP_982586      EPL-----EENDG-------------------KNVVFGQVYDG-----------LE
NP_982486      TP------WLDG--------------------RHVVFGQVLDG-----------MD
AAT09096       TS------WLDG--------------------RHVVFGRVLEG-----------TD
YP_014938      DMPADMLGQMEQAGFPVEIIEAYK-QGGTPWLDGRHTVFGHVIEG-----------M
NP_951950      NA------FLDNRG------KTP-------DLFGYAVFGQVVE-----------GM
NP_935388      NE------FLDYDL-----------------QPPGYAVFGQVTE-----------GF
NP_907765      RTP------WLNG-------------------KHTIFGEV---------SK--G--F
```

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BAC91249      PELNPTGKNLSDG--------------------------KYANFGYITQG-------------I
BAC90551      PS-----IRALDGR-------------------------YAVFGRVVSG-------------M
BAC89441      NEMVNPRGNFLDGR-------------------------YTVFGYVVDG-------------L
BAC88914      --------RQLDGE-------------------------YAVFGKVLEG-------------Q
AAV50868      IRPS-NVLDELDR--------------------------DQVVIGQVYGG------------L
AAV82698      NT-------SLNP-D------NGD--------WGYAVFGRIVE-------------GL
AAV81872      NA-------FLNFQN------ETP-------NGYGYCVFAEVVE-------------GM
NP_736022     ---QDHSKQLSDKKVPKVIIKAYS-EGGNPSLDGGYTVFGQVISG-------------M
NP_734780     KIPYAKK-ELERGGWPTPIAELYAGQGGTPHLDRRHSVFGQLVNQS-----------SF
YP_085398     QP---HLDG--------------------------VHTVFGKATS-------------GI
NP_643098     SPR------QLDR-------------------------NITVVGRVVKG-------------M
NP_641352     TP-------WLDG-------------------------KHTVFGKVTQG-------------L
BAB76758      ELTPAG-RNLLDGR------------------------YSVFGYLIEG-------------R
YP_129479     ND-------FLDYTA------TSN-------AGWGYAVFGKVSA-------------GM
YP_129310     NK-------FLDFKS------ETP-------DGWGYCVFAEVVE-------------GM
YP_129032     NS-------FLNAQG---------------GRAGYAVFGEVVK-------------GF
YP_101389     FNDS----TLLNME--------------------QQKNQNKVTEAFN---------ALAQ
YP_087816     ND-------FLNFTE------ESQ-------QGWGYAVFGKVTE-------------GM
YP_087815     NA-------FLDYRAKEMFGREVV-------QEWGYAVFGEVVE-------------GM
YP_076496     SCGGLDQQP--------------------------VYVIFGQLIEGD-----------DV
AAT91289      TS-------WLDG--------------------------VHVVFGEVVEGF-----------D-
AAT91260      TS-------WLDG--------------------------VHVXFGEVXEGF-----------D-
NP_868477     TP-------WLDG--------------------------KHVVFGRVIEG-----------MD
NP_867717     QP-------HLDN-------------------------RHSVFGKVIEG-------------Q
NP_867158     TD-------FLDFN----------------------HSVFGQLVE-------------GE
NP_865515     VTS-------ASS----------------------NQTVFGRVIEG-------------M
NP_992233     ND-------FLNFRS------ERP-------DGWGYCVFAEVTD-------------GL
NP_991569     NA-------FLDHGQ------RD---------FGYAVFGKVVK-------------GM
NP_280624     QP-------HLDG-------------------------RHAVFGAVTDG-------------M
BAC18575      SP----LPP--------------------------VYTYFGQITE-E-----------GL
BAC16839      TP-------HLNN--------------------------AHTIFGEVTDPE-----------SQ
BAB82272      SP---HLDG--------------------------QYASFGKVIE-------------GM
BAB99042      SP----LAP--------------------------NYTYFGQITE-E-----------GL
BAB97427      TP-------HLNN--------------------------AHTIFGEVTDAE-----------SQ
BAC08372      ELTPAG-LNLLDGR------------------------YAVFGYVVEG-------------E
BAC07690      ------QLDFLDGN-------------------------YAVFGYVTDG-------------M
YP_072215     NA-------FLDHGQ------RD---------FGYAVFGKVVK-------------GM
YP_069574     ND-------FLNFRS------ERP-------DGWGYCVFAEVTD-------------GL
NP_778719     TP-------WLDG--------------------------KHTVFGKVLDG-------------Q
NP_245881     NT-------FLDHRSKELFGKKVV------QEWGYAVFGEVVE-------------GM
NP_245880     ND-------FLNFSA------ETQ-------KGWGYAVFANVVA-------------GM
NP_354667     -------PFLNGQ--------------------------YTVVGKVVSG-------------M
NP_354666     -------PWLNKQ--------------------------YTVWGQVIEG-------------M
NP_298502     TP-------WLDG--------------------------KHTVFGKVVDG-------------Q
AAN39296      TG-------WLDG--------------------------KHVVFGKVVEG-------------LD
AAQ24380      TD-------WLDG--------------------------KHVVFGSVVEG-----------MD
ZP_00353225   TS-------HLNG--------------------------KHTIFGEVADDA-----------SR
ZP_00244808   ND-------FLNFKS------ESP-------QGWGYAVFGKVVA-------------GT
ZP_00244807   NA-------FLDPAN-------SR--------DGNGYAVFGKVIE-------------GM
ZP_00358245   QP-------HLNG--------------------------RHTVFGRVVAG-------------M
ZP_00350273   ND-------FLNFTA------PTS-------QGWGYAVFGKVTA-------------GT
ZP_00129494   NP-------DLDHQD------DSD-------AGFGYCVFGAVVE-------------GM
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ZP_00130259      NA-------FLNHRG------KSL-------SGWGYAVFGKVVK-------------GK
ZP_00136576      ND-------FLNHGA------RD---------FGYAVFGKVVR-------------GM
NF01760157       NN-------YLDKKH--------------------PVFGKVIN-------------GM


CSHUA            -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QLE----
NP_839944        -IVEAMEH------------FGYRNSKT-----SKK------ITIADCG---QF-----
NP_115861        ETLDELEKLPVNEKT-------YRPLND-------------VHIKDITIHANPFAQ--
NP_570981        ETLDELEKLPVNEKT-------YRPLND-------------VHIKDITIHANPFAQ--
NP_057143        GMVNRVGMVETNSQ--------DRPVDD-------------VKIIKAYPSG-------
CSHUB            -VVRKVEST-----------KTDSRD---KPLKD------VIIADCG---KIEVEKP
S66681           -VLRQIEAQ-------------GSKDG---KPKQK------VIIADCG---EYV----
A57545           -TVKKIES------------FGSPKGSV-----CRR------ITITECG---QI-----
A41581           -VVKKIES------------FGSKSGRT-----SKK------IVITDCG---QLS----
A54204           -VVHSIELQ------------ATDGHD---RPLTN------CSIINSG---KIDVKTP
S64705           -VLTAMENVESDPKT-------DRPKEE-------------IRIDATTVFVDPYEEAD
D38552           EVVQRISNVKVPKT-------DKPYED-------------VSIINITVK-------
NP_624311        DIIKKINETFVD---------KDFVPYQDI-------------RINHTVILDDP-----
G2708309         LVMRKIEN-------------VPTGP-----NNKPKL---PVVISQCG---EM-----
A45981           GVARILENV-----------EVKG------EKPAK---LCVIAECG---ELKEGDD
J40763           EVVREIENQKTD--------AASKPFAE-------------VRILSCGELIPKSKVK-
A47328           EVIEQIENLKTD--------AASRPYAD-------------VRVIDCGVLATKSIKDV
XP_531396        -IVEAMER------------FGSRNGRT-----SKK------ITIADCG---QLERYQF
XP_525294        -IVEAMER------------CGSRNGKT-----SKK------ITIADCE---QL-----
XP_523512        -IVEAMEH------------FGSRNGKT-----SKK------ITTADCG---QLEYV--
XP_507866        -AISLVDSALSWVLSSQLPLETGTESNRKS--FLSKE------LLVSTAPGDVEMQAVFA
XP_517783        -IVEAMER------------FGYGNGKT-----SKK------TTISDCG---QF-----
XP_517773        -IVEAMEH------------FGYRNGKT-----SKK------ITIA------------
XP_526904        -ILEAMEC------------LGPGMERP-----ARRSP---FLTVDNSN---KFDL-CF
XP_516556        --GWMASM------------WPLA-----------------------------------
XP_526001        -IVEAMER------------FGSRNGGT-----SKK------ITTADCG---QL-----
XP_516021        ETLDELEKLPVNEKT-------YRPLND-------------VHIKDITIHANPFAQ--
XP_515886        EVVREIENQKTD--------AASKPFAE-------------VRILSCGELIPKSKGKN
XP_525218        -IVEAMEH------------FGYRNSKT-----SKK------ITIADCG---QF-----
XP_507684        -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QLE----
XP_524688        LVMRKIEN-------------VPTGP-----NNKPKL---PVVISQCG---EM-----
XP_513346        -VLRQIEVA------------PDTKAS---KARGS------RKNTDGQ---ERNWGKS
XP_524598        -VVEAMER------------FGSRNGKT-----SKK------ITIADCG---QLQQI-
XP_515004        SGWVSPWHSGVNPGL-------SWLCRG-------------LPPAHCHTWSRLCGLAP
XP_523437        -LWRPWST------------LGPGMAKT-----SKK------ITIANCG---QLE----
XP_520485        --GKTSKK------------ISIADCRQ-----L-------------------------
XP_519076        -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QLE----
XP_527705        -FGGHRAI------------WVQEWQDQ-----QEDHH---C-----------------
XP_527529        --------------------------------------------------------
XP_518678        --------------------------------------------------------
CSMSA            -IVEAMER------------FGSRNGKT-----SKK------ITISDCG---QL-----
NP_598845        -VVKKIES------------FGSKSGKT-----SKK------IVITDCG---QLS----
AAH58369         GMVNRVGMVETNSQ--------DRPVDD-------------VKILKAYPSG-------
A56861           -VVRKVEST-----------KTDSRD---KPLKD------VIIVDSG---KIEVEKP
A40047           -VVHSIELQ------------ATDGHD---RPLTD------CTIVNSG---KIDVKTP
NKCR_MOUSE       EVIEQIENLKTD--------AASRPYAD-------------VRVIDCGVLATKLTKDV
AAH61645         ETLDELEKLPVNEKT-------YRPLND-------------VHIKDITIHANPFAQ--
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BAC41068       -TLTAMENVESDPKT--------DRPKEE-------------VLICTTTVFVDPYEEAD
BAC34686       GVARTLENV--------------EVNG------EKPAK---LCVIAECG---ELKEGDD
BAB30711       DIVKKINETFVD---------KDFVPYQDI-------------RINHTVILDDPFDDPP
BAB25645       LVMRKIEFQ-------------APLGKRVQAWTHSLTC---PALTGILA---LILMPTE
BAB23880       LVMRKIEN--------------VPTGP-----NNKPKL---PVVISQCG---EM-----
NF00527760     -TVRKIES-------------FGSPKGSV-----SRR------ICITECG---QL-----
NF01138503     EVVQRIFNKVNPQT--------DKPYED-------------VSIINITVK-------
NF00510830     -VLRQIEAQ-------------GSKDG---KPKQK------VMIADCG---EYM----
NF00510932     GMVNRVGMVETNSQ--------DRPVDD-------------VKILKAYPSG-------
NF01595779     -IVEAMEC-------------FGSRNGKT-----SKK------ITIYDCG---QL-----
NF02014914     -TVEAMEH-------------FGSRNGKT-----SKK------ITISDCG---QL-----
NF01930249     -IVEAMER-------------FGSRNGKT-----SKK------ITISYCR---QL-----
NF01929278     -IVDAMER-------------FGSRNGKT-----SKK------ITISDCG---QL-----
NF00523006     -IVEAMER-------------FGSRNGKT-----SKK------ITISDCG---QL-----
NF00508381     -IVEAMER-------------FGSRNGKT-----SKK------ITISDCG---QL-----
NF01215170     ETLDELEKLPVNEKT-------YRPFND-------------VHIKDITIHANPFAQ--
CSRTA          -IVEAMER-------------FGSRNGKT-----SKK------ITISDCG---QL-----
NP_783638      ETLDELEKLPVNEKT-------YRPLND-------------VHIKDITIHANPFAQ--
NF01612782     GVARMLENV--------------EVNG------EKPAK---LCVIAE-----------
NF01612825     -VLRQIEAQ--------------GSKDG---KPKQK------VIIADCG---EYM----
NF01607941     SVARMLENG--------------EVNG------EEPAK---LCVIAECG---ELKEGDD
NF01607846     -VVEVVER-------------LGPGMARP-----ARRSP---FPTVDDSN---FFDLWAF
NF01609144     -VVHSIELQ-------------ATDDHD---RPLTD------CTIVNSG---KIDVKTP
NF01608897     -GHFTHQT-------------IPSVAQES-----APTPS---ARNTL------------
NP_758443      -VVKKIES-------------FGSKSGKT-----SKK------IVITDCG---QLS----
AAH61971       -VVRKVENT------------KTDSRD---KPLKD------VIIVDCG---KIEVEKP
G2828710       EVVREIENQKTD--------AASKPFAE-------------VRILSCGELVPKSKVKK
338388         -VVKKIES-------------YGSQSGKT-----SKK------IIVANSG---SL-----
AF132148       EVLRKLNDAIVD--------DSFRPYQDI-------------RITHTVVLEDPFPNP-
NP_611113      -TLQKMENIEVDN-K--------DRPIED-------------IIIESSQV--------
NP_611695      -VVRQIENS-------------ATDARD---RPVKD------VVIANSG---TLPVSEA
NP_610590      DALDELEKLPVNPKN-------YRPHVD-------------KKINGVTIHANPLAT--
NP_648697      -IVQKVES-------------YGSQDGKT-----SKK------VIIEDCG---AL-----
NP_648508      TIYNMLKLEDGIVD------HQERPMHAH-------------RIVSTEVLS-------
NP_648338      GIVAEME-------------QNCTDEGDP-----TAP------IVIRDCG---EIAHNED
NP_476656      DTIYAIEDVKTDTD--------DFPVEP-------------VVISNCGE---------
NP_523874      EVVKRIGMVETDKN--------DRPVDP-------------LRIIKAKVEKL------
NP_523773      -VVRKMERC-------------GSKSG---TPSQK------IVIYSCG---ELK----
NP_610224      LIMRKIEN--------------VPTGP-----NNKPKL---PVTISQCG---QM-----
NP_733246      ELVRQLEGLPVD--------RNSRPLQD-------------AAIANCGELVRQTKA--
NP_611935      EVVLNICNSKANPKT-------DKPYDD-------------IKIISIHLSN-------
EAA03569       GIVGEME-------------RHSNDDGDP-----LVP------IVIEDCG---QIAPGDD
EAA03948       -VVRKIEST------------ATDGRD---RPTND------VEIADSG---SLPVSEP
EAA04625       LIMRKIEN--------------VPTGP-----NNKPKL---PVVISQCG---QL-----
EAA06299       -VVRKIES-------------FGSHSGKP-----SKQ------ITVANCG---QL-----
EAA08127       DLVRQLEQLPVD--------RNSRPLQD-------------AMVSNCGELVRQVKGKT
EAA09839       -VLTEMERVEVDN-R-------DRPIEN-------------IFIQRAQV--------
EAA10133       EIVQNICNAKTNPKT-------DKPYDE-------------IRIISINLS-------
EAL39647       EVLRKLNEVICD--------DRHRPYKDV-------------RITHTVVLDDPFED--
EAA13913       EALDELEKLTVNPKT-------YRPVVE-------------KKINSVTIHANPLAG--
EAA13914       AVVHKVEQVRTDTD--------DYPVKP-------------VIIEDCGDLPILGPFTV
EAA14200       -VVRKMERC-------------GSKGG---RVQQK------VTIVACG---EVK----
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EAA01474          DLVEKISQAG------------DSAGKPQS-----------TVLIANCG---KWQ----
KP_321072         DLVEKISQAG------------DSAGKPQS-----------TVLIANCG---KWQ---
KP_320182         QVVKRIGLVETDKN--------DRPVEP-------------VKIVKGKVEKY------
KP_319131         AVVHKVEQVRTDTD--------DYPVKP-------------VII-------------
KP_311949         RFTAEQPQLP----------------------------------------------
CAI11739          EVLKRLEAVP---------TYNERPKQD-------------CKIVACG-IFEF-----
AAQ91263          -VVDAIEK-------------KGSSSGKC-----SAK------VVIANCG---QL-----
NP_001004626      -TVSLMES-------------YGLHDGGT-----VKK------VAITDCG---ELK----
NP_001002065      GVVKMLEAM--------------ETKE------DNPVK---PCVIAECG---EHKAGDD
NP_957499         LVMRKIEAV-------------VFINF--IGTAQNKIS---STITLPNA---DL-----
AAQ94596          LVMRKIENV-------------P------TGPNNKPKL---PIVVSQCG---EM-----
NP_998184         -VVRKIEAT-------------KTDGRD---KPLKD------VSIHDSG---KIDVEKP
NP_001002146      ETLDEIEKLPVNEKT-------FRPLND-------------VRIKDVTIHANPFAG--
AAQ91264          -VIKKVEG-------------FGSSSGKT-----SAK------IIIADCG---QL-----
AAH59458          -VIKKVEG-------------FGSSSGKT-----SAK------IIIADCG---QL-----
AAH56814          DVLAKINETFVD---------NDFIPFQDI-------------RINHTVILDDPFDDPA
AAH62863          -VIKKVEG-------------FGSSSGKT-----SAK------IIIADCG---QL-----
NP_998629         DVIRMIESQKTD---------TNSRPYAE-------------VKVLNCGELVPKSKAKK
NP_957285         -TLSAMENVESDPKT-------DKPKSE-------------IKILSTS---------
NP_506749         -IVSKVEG------------NGSSSGTP-----KS------ECLIADCG---QL-----
NP_506561         -VVKKIEK------------MGSRSGAP-----AK------TVTIADCG---ELKSE--
NP_504522         EILETIVKEYGS--------ENGRPGKK-------------LIVHNCGHL--------
NP_506751         -VVKAVES------------NGSQSGKP-----VK------DCMIADCG---QLKA---
NP_497745         NVVDYIDNLAVD--------DKSKPLAK-------------VLISNCGELVKK-----
NP_499828         -VVKAIES------------KGSEDGAP-----SA------PCVIADCG---EMK----
NP_497257         -VVREIEAT-------------PKGAGD---RPIED------VVIANAG---HIPVENP
NP_509506         EVVKAIENLETG--------NEDKPVCK-------------VEITHCGEMVRK-----
NP_503034         -IVRQVEQQ-------------GTPSGK----PQMV------VKIVESG---EIE----
NP_501118         KVIANMGRVDTDNH--------DRPKIE-------------IRILKAYPSESSVLS--
NP_496562         TLFNMLKITEVET-------EGDRPVTFY-------------KITGARIDN-------
NP_495855         LTVRKIEN-------------VPTGA-----NNKPKL---PIVVVQCG---QL-----
NP_496337         -TLTTIEKLETEEGT--------DVPMVS-------------VVIMRAEVFVDPF----
NP_495417         DTLEEIETIKVDNK--------YRPLVQ-------------QK--------------
NP_493378         SVVQRINQVSTFERS-------GRPRES-------------IQIMSISLK-------
NP_492343         ETLEKLNEQLAD---------TNNRPFKDI-------------RISHTIVLDDPFDEDA
NP_493624         -VVRKIEQT-------------EKLPGD---RPKQD------VIIAASG---HIAVDTP
T06073            -VVKAIEK-------------VGSSSGKP-----TK------PVVVADCG---QLS----
NP_175776         DTLTRINEAYVD--------PKNRPYKNI-------------RIKHTHILDDPFDDPP
NP_567029         -VVRKIEA--------------QGQDSG---VPKAN------VIIFASG---EVSL---
NP_201554         -TLAAMENVPVDE-S--------DRPLEE-------------IKIIEASVFV------
NP_200679         -VVYKVEA--------------EGNQSG---TPKSK------VVIVDSG---ELPL---
NP_181407         LVMRKIEN-------------VAIGP-----NNRPKL---AVVITECG---EM-----
NP_191166         -VVKAMED-------------VGSDMGNP-----SE------RVVIEDCG---ELKNPSS
NP_171696         EVLDIMEKTQTGPG--------DRPLAE-------------IRLNRVTIHANPLAG--
NP_195222         -NVFAIEGG------------AGTYSG---KPRKK------VVIADSG---EIPKDKW
NP_195213         -VVKAIEK------------VGSDSGKT-----SK------VVTITDCG---QLS----
NP_196816         -VVKLIEEQ-------------ETDRGD---RPRKK------VVIADCG---QLPMSEA
NP_188932         DLMRNIEKE----------VITTTTRTP-----SKP------VVIADCG---ELSDYRS
NP_191762         -LVRTLESQ-------------ETRAFD---VPKKG------CRIYACG---ELPLDA-
NP_190046         DVVQGIEKVKTD-KN--------DRPYQD-------------VKILNVTVPKS------
NP_180557         -VVYKIEA--------------EGKQSG---TPKSK------VVIADSG---ELPL---
NP_181157         EVIKRLGSVQTDNT--------DRPIHE-------------VKILRTKVID-------
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NP_179251           -VVRDIEK-------------VGSDSGRT-----SK------PVVIADCG---QIS----
NP_179709           -VVKAIEK-------------IGSSSGKP-----TK------PVVIADCG---EISS---
AAK02067            GVVRSIEHVSIE---------EQSCPSQD-------------VVIHDC----------
P82869              DILGQIKTG------------DIIKSAK-------------LIEGQDRLSLPVQNNN
T05352              EILKKIE-------------RVGDEEGKP-----TVS------VKIIRCG---EY-----
T49181              AVIKKME-------------LVGTSDGKP-----TSP------VKIIDCG---ETS----
T05314              SIYNLLRLGEVDTS------KDDRPLDPAP------------KILSVEVLW------
CSZPA               -VVKKVESL------------GSNSG-----ATRAR------IVIDKCG---TV-----
E313994             SVCKRMGLIRTDSS-------DRPIEP-------------LKIIKAVALDKCGTVPN
E1335804            -IVKKISKA------------ETDNRD---KPLED------VKIIKSG---QLSQENV
E1331567            DIVKEIES-------------TPVG-----ANSRPKS---NVAIVECG---EM-----
S62327              STVRTIENL------------ETKN-----DDPVV---PVVIEECG---TCTKDQI
S62590              -VLDALEKVPTNS-N------DHPKLP-------------IKLEDIIIFVDPFEEWK
E1294518            DVVHRIEQGETD-KY------DRPLEP-------------TKIINISIVYT------
T39728              DTLLKINDAICD--------EEGQPYRDI------------RIKHTIILDDPFEDPP
E1263915            TIYNVVRISELELD------ANQRPVFPP------------KIISTEVID-------
CSBY                -IVKKVESL------------GSPSG-----ATKAR------IVVAKSG---EL-----
S30507              -IVKAIESY------------GTASG-----KPRAE------IVIEEAG---EL-----
S12324              -VVNYIQHV------------SRDAND---KPLEA------VKIAKCG---EWTPELS
S57050              SVVRTIENCR-----------VDSDGVP----------ESDVRISDCGVWEKT-----
S48567              RIVRLIENQ-----------QCDQEN-----NKPLR---DVKIDDCG---VLPDD--
CSBYC3              QLMDAIQYTETD--------EYGKPQHE------------LRFLYFVLEILKISNIL
S63359              DLMDKLANVKTD--------ENGKPEQP------------ITIGYISSQEHRIQ---
S38324              -VVHYIENV------------KTDSRN---MPVKE------VIIVESG---ELETVPL
TcCyP19             -VVKAMEA------------VGSQTGKT-----SK------PVKIEASG---QL-----
TcCyP20             RTLKKLEELRVDDKY--------NVLDKD-------------AKIVGTTVMYNPFAEGH
TcCyP21.1           -VVKKVENT------------KTGLND---KPKKA------VKINDCG---VL-----
TcCyP21.3           -VIEKVEA------------NGSRSGAT-----RQ------PILITDCG---EVKNN--
TcCyP24.3           DHVKAIEEVGTPHG---------KPSKT-------------VLVSDCGVLKEAS----
TcCyP26             DLVERVA-A---------LCGSRCGVP-----VSR------AWITDCG---QSSGAKL
TcCyP28             -VVRRVER------------LGSESGKT-----RG------RIIIADCG---EVVVPEP
TcCyP30             DAVEEIERVPLTP---------SGFPSRR------------VTIVDCGRL--------
TcCyP35.1           NVVEAIHDVD-----------VKHNQSP-----------CKVITISDCGVIDLTDN---
TcCyP35.3           EFLREVAPYG-----------EINGNPSR----------FVVVVDCGVGPLPETLGI
TcCyP40             NTVRALEHTETG--------ANDKPVKP------------CVIVDCGVTD-------
TcCyP110            PVVRAIVQTARDD--DDK--PIAPVVIRR------------VVATERTTEK-------
AAT44353            -VVKAMEA------------TGSQSGKP-----SKP------IKIENCG---QL-----
EAL37431            -VVKSIEKC-----------GSQNGKP-----TKS------VCITASG---VLS----
EAL37232            ETLNALENCPSDKS--------HKPIDE-------------IIIKDIVIHSNPIADQE
EAL37110            ESKLTLTKIEQLGSYS------GRTSKR------------IEVTACSHYSGTPPSAK
EAL36265            PILSKLNQVITD--------ENSIPLQKV------------MILHTYILDDPFEDSL
EAL35294            ATLKKIEN-------------ATVLP----PNSKPKI---PIIIYECG---QL-----
J68268              -VVEGMEA------------VGSQTGST-----DK------PVMISESG---QL-----
J68269              -VVKAVEG------------VGSQSGST-----TK------AVKIDSCG---QL-----
AAQ15626            -VIEKVET------------NGSQSGAT-----RQ------PITIMDCG---QIEQG-
AAB07896            -VVKAMEA------------VGSQGGST-----SK------PVKIDSCG---QL-----
AAK14937            -VVRAVEA------------VGTQSGKP-----TKP------VV-------------
CAC18541            LVLKKIEN-------------VPTGP-----HNRPKV---PVVITQCG---EM-----
A45000              -VVKDMEA------------VGSSSGKT-----SQE------VLITDCG---QL-----
Q9Y0F5             ETLNTLENCPSDKS--------HKPIDE-------------IIIKDIVIHSNPIADQE
J47811              -VVKAVES------------KGSQSGRT-----SA------DIVISDCG---QL-----
J50388              -VVKKMESV------------GSKSG---KVKEP------VIISRCG---ELI----
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L46884           -VVKKMESL-------------GSTSG-----KPSKK------IIIEDCG---EC-----
M93420           -VVKKMESV-------------GSKSG---KVKEP------VTISRCG---ELI----
J50389           -VVRQIENM-------------QTDSRD---RPVKS------VKIANCG---HIPVDVP
G992633          -IVRQIESE-------------TTDSRD---RPVKS------IKIASCG---HIPVEIP
E323073          -VVKKMESV-------------GSKSG---KVKEP------VIISRCG---ELI----
G52758           -VVVRIEKT-------------KTNSHD---QPGEAREDRCQWRAVERE---GVRWVVA
E1203753         -VVKAMEA-------------VGSRSGTT-----SK------PVRVSACG---QL-----
CAB58290         HTLEQISHMQVDADFVLYSPVTVMKCSTALLSRGTAPQSATARAAPASCVVTSQYPSSIL
CAB58298         -VVKKVER-------------LGSSSGKT-----RS------R----------------
AAF69736         NTVRAVEQTPTA---------ANDKPVVD-------------CVIAGCGTLDALPE---
AAD46565         -VVLRIEKT-------------KTNSHD---RPVKP------VKIVASG---EL-----
A53522           ESWPTVQAIEALGGSG------GRPSKV-------------AKITDIGLLE-------
NP_702112        SIYNLLKFNNIKTN------KHDKPIEDIP------------YIEYVKIIE-------
NP_701512        -IIRMIENVGT----------KLGHPMYN-------------VRIVNCGLYKGLEKD--
NP_701389        DTLSFIEEQGTLIG--------KPKKQ--------------VFIYNCGVIPLDKIK--
NP_701030        DVLSVLENEPVGEK--------SRPIKD-------------IIIETITIHANPIAEEE
NF01067443       HILRAIEMLPTCN--------NGNPKVL-------------LYISDCNEVNEAFFKKE
NF01067965       ILLKKIEN-------------VSVTP----YIYKPKI---AINIVECG---EL-----
NF01065889       KIVLDIEKVRTD-KR--------DKPLED-------------IKILNIKINN-------
NF00926916       -VVREMEKE------------GAKSGYV-----KRS------VVITDCG---EW-----
G52760           DKLVHIEAVGTDSGE---------PLKR-------------VLVKESGELPL------
J10322           ILLKKIEN-------------VSVTP----YIYKPKI---AINIVECG---EL-----
CAB39039         -VVREMEKE------------GAKSGYV-----KRS------VVITDCG---EL-----
CAD51648         TCIENIASVQTTAT---------NKPIFD-------------VKILRTSTAVNVD----
NF01497907       -VVRDMERE------------GSNSGYV-----KRP------VVITNCG---EL-----
NF01497552       KVVLDIEKVRTD-KR--------DKPLDE-------------IKILNIKINH-------
NF01497379       EKLVQIEAVGTDSGK---------PLSR-------------VLVTKSGVL--------
NF01497199       LLLKKIEN-------------VSVTP----YIYKPKI---PINVVECG---EL-----
NF01496968       HIIRAIELLPVNN--------FYQPKVN-------------IYISDCNEIHE------
NF01495390       -IIRTIETMGT----------KLGNPMYD-------------IKIIN----------
NF01495324       TCIENIASVQTTAT---------NKPIFD-------------LKILRTSTAVNAD----
NF01493974       DTLSYIEEQATLIG---------KPKKQ-------------VYIYNCGVIPLDKIKYK
NF01493918       --YNLIKFNNIKTN------KNDEPIEDIP------------YIEYVKVIE-------
E316521          -TLELFKKN------------SSQQG-----KPKTT------IKIVDSG---VV-----
CAC35733         EVLQQINRTHID--------DDGRPLLNI-------------RIKHTYILDDPFEDIP
J47812           -VVQKIEA-------------VGSQSGKT-----SK------DVVVANCG---QL-----
J47813           -VVKAIES-------------KGSQSGRT-----SA------DVVITDCG---QL-----
G2624966         DVVKMIENN-------------PTGAQ-----DKPKK---AVVIADCG---QL-----
E1317902         -TLAAIEKVETDE-G--------SRPIAD-------------VLFLNSEIFVDPFEEAE
E1319851         -TLNAIEKIETDE-S--------SRPIID-------------VIFLNAEIFVDPFEEAE
G3057040         -TLNTIEKIETDE-S--------GRPIVD-------------VIFLNAEIFVDPFEEAE
AAB81959         -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QLE----
AF023860         -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QLE----
AAB81961         -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QLE----
AAF22215         -IVEAMEH------------FGSENGKT-----SKK------ITIANCG---QL-----
AF243140_1       -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QI-----
AF252388         -VVKKIES------------FGSKSGET-----S--------------------------
CSBOAB           -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QI-----
NF01922219       -VLEDLEA------------VGSKSGKP-----SHE------VEIVDCG---QL-----
NF01725587       -VVKKIES------------YGSQSGKT-----SEK------IIVADCG---QL-----
NF01897292       FFWKAERVVKAFHMT--------LAIEK-------------LKTRSFSYNST------
CSHYAC           -IVEAMER------------FGSRNGKT-----SKK------ITISDCG---QL-----
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NF00071027         -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QLE----
NF01951405         -TLTAMENVESDPKT---------------------------------------------
NF01059378         -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QLE----
NF01105745         -VVKNIES------------VGSQSGQT-----KK-------PVVVANCG--EL-----
NF00495096         -IVEAMER------------FGSRNGKT-----SKK------ITISDCG---QL-----
NF01053198         -IVKAIEK------------VGSSSGRT-----SK-------PVVVADCG---QLS----
CSPGA              -IVEAMER------------FGSRNGKT-----SKK------ITIADCG---QI-----
NF01950932         ETLDELEKLPVNEKT-------YRPLND-------------VHIKDITIHANPFAL--
NF01951326         GVVKILENV--------------EVNG------ENPAK---LCVIAECG---ELKEGDD
NF00909389         -VVKDIEK------------VGSGSGRT-----SK-------PVVIANCG---QPS----
NF01286555         -VVKAIEK------------VGSSGGRT-----SR-------PVVVADCG---QLS----
NF01737225         -VVRAIEK------------VGSDSGKT-----SK-------PVVVADCG---QIS----
NF01590839         NVVDSIQQGNKIKTVK------IIRTGNE------------AKAFKTDQEAFYKYLAE
AAH51602           GTLNRLGMVETDSQ--------DRPLDE-------------VQVLRAYPSG-------
AAT69672           -VVKTMDR------------LGSQSGKP-----SKK------VVITNSG---QL-----
AAH54186           -VVKTMDR------------LGSQSGKP-----SKK------VVITNSG---QL-----
AAH54168           -IVRKIEST-----------KTDGRD---KPLKD------VVIADCG---KIEVEKP
NF01208049         -TVSAMEKVDTDHKT-------DRPKEE-------------IRIECTTVFVDPYEEAD
NF01844632         DVVREIENQKTD--------ASSKPSVE-------------ISIQNCGELVQKSKAKK
NF01844615         TIYNILRLAEVDIG------EDERPVNPH------------KIKCTEVLF-------
NF01915773         GTLNRLGMVETDSQ--------DRSLDD-------------VRILRAYPSG-------
NF01915657         DTLDELEKLPVHEKS-------FRPLTE-------------VRIKDATIHANPFAL--
NF01557564         GIVKMLENV--------------EVKD------EKPAK---MCVIAECG---ELNDRDE
AAH41536           -IVENLDR------------LGSQSGKP-----SKK------VVITNCG---QL-----
AAH85963           EVVREIENQKTD--------AASKPFAE-------------VRILSCGELIPKSKVKK
AAH64250           LVMRKIEN------------VPTGP-----NNKPKL---PVVIAQCG---EM-----
AAH61335           GIVKMLENV--------------EVKD------EKPAK---MCVIAECG---ELNDRDE
AAH59741           -VVRNMEK------------LGSQSGKP-----AKK------IVIANCG---QL-----
AAH67931           DLVREIENQKTD--------ASSKPSVD-------------VSIQNCGELVQKSKAKK
AAH44993           -TVSAMEKVDTDHKT-------DRPKEE-------------IRIECTTVFVDPYEEAD
A40516             -VVRKVENT-----------KTDSRD---KPLKD------VTIADCG---TIEVEKP
CYPB_BOVIN         -VVRKVEST-----------KTDGRD---KPLKD------VTIADCG---KIEVEKP
AAR19276           -IVRKIES------------FGSKNGKP-----SKK------IIISDCG---DMK----
A46579             GVAKILENV--------------EVKG------EKPAK---LCVIAECG---ELKEGDD
AAV40687           SVVRTIENN--------------PATNG-----DVPKE---PVVIADCG---QLSSDDP
NF01637248         -IVKKIEGY-----------GSQSG-----KPSAT------IKISASG---TV-----
CYPR_BOVIN         -TVKKIES------------FGSPKGSV-----SRR------IIITECG---QI-----
CYPR_CALVI         DTVYAIEDVKTDTD--------DHPIDP-------------VIIVNCGEMPTEPYEFY
E1317906           -TLTTIEKLETEEGT-------DVPMVN-------------VMIMRAEVFVDPFEEAE
AAB87888           -IVKKIES------------FGSQSGKT-----SKK------I---------------
AAB87889           -IVKKIES------------FGSQSGKT-----SKK------I---------------
Q9XZZ5             -VVKKMEA------------VGSESGKT-----KQP------VLIANSG---QL-----
S63995             -VVKKLES------------LGSQSGKT-----NKK------IAVVDCG---QI-----
G1703696           -IIKKVES------------YGSDSGKT-----SKK------ITIADCG---QL-----
J36797             -VVKEVET------------FGTQSASP-----SSR------SSIADCG---QL-----
AF017738           TLFNMRLGECETG------NDDKPLRTQ-------------KILQVEILS-------
L37292             EVVTKIEYLKTN---------SKNRPLAD------------VVILNCGELVRRKKRQH
AAS01736           -VVKAIEK------------VGS---------------------------------
AAO61985           LTLRCLSPLWLQ----------LKHEGKS-------------LKNLGRN-------
CAC80550           -IVKAIEK------------VGSSSGRT-----SK-------PVQIADCG---QLS----
AAO63777           -VVKAIEK------------VGSSGGRT-----SR-------PVVVADCG---QLS----
S53522             -VVKMMEAE-----------GRSNGQP-----KCA------VEISSCG---QLS----
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E280557        FVVRAIEKNPTSKGEN-----IKDRPILA-------------VVITDCGMLELEKPFTV
J70827         EVVTKIECLKTN---------SKNRPLAD-------------VIILNCGELVRRKKRHH
J70884         DVLTKLEYLRTN---------FKNRPLGD-------------VVILNCGELVRRKKRQN
J55771         EY--TLQAIEATGTDS------GKPSVQ-------------TVIKSCK------VKK
D1024669       -VVRKIEST------------KTDSRD---KPVKD------VVIADSG---TIPVETP
227879         -VVKKMEA------------AGSQSGKT-----TK------PVVIANCG---QL-----
AAD48910       -IVKLLES------------IGSQSG---TPSKI------AKISNSG---EL-----
AAO51811       KVVRTIED------------IPVNP----PPNRPKY---DVVITECG--QL-----
AAF76472       EVLDIMEKTQTGPG-------DRPLAE-------------IRLNRVTIHANPLAG--
AAP80861       -VVYKVEA------------XGKQNG---TPKSK------VVIADSG---EVPL---
AAP73848       LAVRKIEN------------VATGP-----NNRPKL---ACVISECG---EM-----
BAB62329       EIVKRLGSVQTDKS-------DRPIHE-------------VKILRTVVKD-------
AAL75728       GAVRAIDRT-----------GTWSGKT-----VKP------VVITDCG---VL-----
548017         -VVKAIEK------------VGSRGGST-----AK------PVVIADCG---QLS----
548018         -VVEKMEQ------------VGSGSGGT-----AE------RVLIEDCG---QLADDHA
BAD53622       -VVYKIEA------------EGQQSG---SPKSK------VVIADSG---ELPM---
BAD53621       -VVYKIEA------------EGQQSG---SPKSK------VVIADSG---ELPM---
BAD53620       -VVYKIEA------------EGSQSG---TPRSK------VLISDSG---ELK----
KP_507188      ATIPTYKPAERIRFFNDFAQLIGDERAQTARALWDRP---LKTVYISDCGELKVTKPS--
KP_483750      DVVQQIEKVKTD-KN-------DKPYQD-------------VKILNTVPKT------
KP_483749      PFVHIYDTH-----------SGSNDP-------------IISKE----------
KP_482125      DYLADLKVG-----------DVIESIQ-------------VVSGLDNLANPS----
KP_478742      EVLSQIKTG-----------DIIRSAK-------------LVQGRERLVLPPEAP-
KP_478741      EVLSQIKTG-----------DIIRSAK-------------LVQGRERLVLPPEAP-
NP_385690      ENIDNIKRG-----------EPVRDPD-------------TIVSMRVAADA-----
NP_385689      ENVDKIKLGDDANN-------GAVADPD-------------RMISVKVGR-------
NP_349373      EEVDRIVSVKRDYSDK----PLEDQRIKT-------------MEIETFGENYPEVEIIE
BAD45990       DTITKINETYVD--------DKGRPFKDI-------------RIRHTYVLDDPFDDPP
BAD45991       DTLTKISETYVD--------DKGRPFKDI-------------RIKHTYVLDDPFDDPP
NP_908419      EFVITTGDAPELD--------ASALVVGR-------------VVDGMDVLGKI-----
NP_919903      RKFKEFGKDARNIRFG------PKQPGND-------------IDVYLRPLVEDLKQLWK
BAD35839       GVVRSVEHAPVG--------EADRPTSD-------------VEIVDCGELPEGAD---
AAU87301       -VVREIEK------------VGSGSGRT-----SK------PVVIADSG---QLA----
CAG90469       -VVDYMENV-----------STSYGD---RPAKE------LKISAAG---EIAVEQN
CAG88330       -IVKKVESY-----------GSGSG-----ATKSR------ITIDASG---EL-----
CAG88054       QVLEKINLSVVENL-------ETRRLLKDI-------------RITHTHNIY-------
CAG86818       EAVKSIEDIETD-SD--------DKPLDQ-------------VILLSTSLED-------
NF01109982     -VVKKVEK------------FGSDSGKT-----SKK------IVIDASG---EC-----
NF00686348     EYVDAVEKG-----------EPPAHPS-------------IIVRASIGSDKIHPPT
NF00686217     EYVDAVEKG-----------EPPAHPS-------------IIVRASIGSDKIHPPT
NF02138644     -VVKEMEK------------VGSDGGNS-----KS------TVEIEECG---QIQEN--
NF00926921     -IVDKIQVV-----------PKGFQD---RPTKD------VKIVKCG---ELDMKEE
NF00909931     -VVKEIEK------------VGSSSGKT-----SR------PVAIADCG---QLS----
NF00956595     -VLRQMEAQ-----------GAKDG---KTKQK------VIISDCG---EYA----
NF02035209     -VVEAIQK------------VGSRGGTP-----KN------PL---------------
NF01329591     NVVDKIVNPTG-NYG---MHQNVPKQP-------------IKIISVQIKK-------
CAG86678       EAIETLESDESLNNQD-----KTKKSGKPRGIWKKES------WIKHVEIHFNPFVEQ-
CAG86274       DTLDLLNSARTDKND--------RPKEE-------------YVMSKITIET-------
CAG85447       SIYNVVKINESELK------SEETPMYPA-------------EITDIKILV-------
CAG85287       -IVKKIEAQ-----------GSGSG-----APQSS------IVIEECG---ELKDN--
CAG84900       SIVRQLERC-----------D-KGEN-----DKPVE---DWIISDCG---ELPSDYV
CAG84822       SVVREIERVN----------TDSQNIPTR---------EDIVLIEDCGDWT-------
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CAG84723      DIVDQIEK--------------TKVG-----VLDKPYP---DITITNCG---EM-----
CAG79895      -IVDAIENA-------------PTGARS---NPKVD------ITIADAG---EIPVEKS
CAG78939      --LTTLELSETVD---------DKPVKN-------------ITLESVSVS-------
CAG82238      GIVRQIERT------------E-TGEQ-----DRPKQ---PVTIVDCG---ELPADFQ
CAG81980      -VVKKIESF------------GSSSG-----ATRAK------ISIDKSG---EL-----
CAG81971      -VVKAIEKL------------GSNSG-----RTSQK------IVIDDCG---QE-----
CAG81844      DVVKFVEN-------------VPV------VEEKPKR---DVVVSECG---EY-----
CAG84141      TIYNAQDIARGELT------EDGYPMYVQ--------------TVQNVEIVLGGGLVQE
CAG84091      SVLRQLEELD-----------TAPGDVP-----------VLPVTITNCGELKRDAKLLL
CAG83821      DNYRPLESVRVVKCGEMRWEEEEPRQGASCRDRHGSRSPGRSRRRRDRDRDRDRDRDRD
CAG76968      EVVDKISQVPTK-NVG---PYQNVPTTP-------------IVIQSVKVLP-------
CAG62671      SVVRTIEYGK-----------VDKEGTP----------ENLVVIEDCGDWDETMSIPL
CAG76052      DVVDKIKGVATG-RSG----MHQDVPKED------------VVITHVTVSE-------
CAG59915      -IVKTIESY------------GTMSG-----QPRAK------IVVEESG---EIKE---
CAG58658      -VVKKVESM------------GSSSG-----ATRAR------IIVSKSG---EL-----
G3777556      -VVRAVEAV------------GTRSGS----TSQK------VSVTDAG---EC-----
AAF65770      -VVKAIEK-------------VGSSSGRT-----SK------PVVSDCG---QLC----
BAA25755      -VVRDIEK-------------VGSGSGKT-----SK------PVVIANCG---QL-----
CSTO          -VIKKAEA-------------VGSSSGRC-----SK------PVVIADCG---QL-----
CSRP          -VVRDIEK-------------VGSDSGRT-----SK------KVVTCDCG---QL-----
CSZM          -VVKAIEK-------------VGTRNGST-----SK------VVKVADCG---QLS----
CYPH_ALLCE    -VVRAIEK-------------VGSQSGQT-----KK------PVKIADCG---QLS----
AAG01536      -VIS---------------------------------------SVIISPN-----I-----
AAB51386      -VIKKAEA-------------VGSSSGRC-----SK------PVVVADCG---QL-----
G54833        -VVKDIEK-------------VGSGSGKT-----AR------PVAIADCG---QLS----
K85185        -VVKAIEK-------------VGSSSGRT-----AK------KVVVEDCG---QLS----
Y08273        -VVRAIEK-------------VGSQSGKT-----AK------PVVVADCG---QLC----
Y08320        -VVRAIEK-------------VGSQSGKT-----AK------PVVIADCG---QIC----
E1226445      -VVRDIEK-------------VGSGSGKT-----SR------PVTIADCG---QLS----
L32095        -VVKQLESQ------------ETSKLDN--SPKKP------CKIAKSG---ELPLDG-
CAA10766      LVLRKIEN-------------VQTGP-----NNRPKL---PCVIAECG---EM-----
AAF69796      -LVKNIESY------------GSDSG-----KPKAK------VTITGSG---TV-----
AAF69795      -LVKKIESY------------GSGSG-----ATKAK------ITIAASG---TV-----
CSNCM         KVVKALEAT------------GSSSGAI---RYSKK------PTIVDCG---AL-----
NF01287451    DVLEKINDAIVD---------ERGHPLVDI------------RIKHTVILDDPYPDPA
NF01527836    QTLAKLEGLEVDKK--------NRIKEE------------VRIERVTVHANPLAK--
NF01488902    GVIRRMGMVPTDKE--------DRPATE------------VKIVKARVVREEDMEA-
NF00648058    SVVRQIEN-------------LKTQG-----DKPTK---DAVIADCG---ELSGDAA
NF01487278    -VVEKIENT------------KTGPRD---APAEP------IKIAKSG---ELEVPPE
NF01486260    DVIHRIENVKTH-K--------DKPVED------------IKILNIDIM-------
NF00904102    -VVEKIENT------------KTGPRD---APAEP------IKIAKSG---ELEVPPE
NF01484914    DVLEKINDAIVD---------ERGHPLVDI------------RIKHTVILDDPYPDPA
NF01484255    DVVKKMEN-------------TKTGYR---GKDVPNL---DVVIAQCG---EM-----
NF01483993    TIYNLAKIGEAEVEE-----GGERPLYPI-------------KITRIEILI-------
NF01533203    -VVKAIEK-------------VGSGNGRT-----SK------PVVIADCG---QLS----
NF01483647    TTLTAMENVATDG-S-------DRPLNK------------IVIKDMIILIDPFAEWM
G71849        DVVKALEAT------------GSGSGAV---KYNKR------ATIVKSG---EL-----
J17900        -VVTAIETT------------KTLPGD---RPATP------VIIADCG---ELPVSNN
NF00873669    -VVKAIEAE------------GSGSG-----KPRSR------IEIAKCG---VC-----
NF01527595    -VVKAIEAE------------GSNSG-----KTSSR------IEIAKCG---AC-----
NF01539217    MIVKALEAT------------GSGSGKV---QYNKK------PTIVKSG---EL-----
O1035365      -IVDKIQVV------------PKGFQD---RPTKD------VKIVKCG---ELDMKEE
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YP_116397        DVVDKIAGVSTG-SAG----MHQDVPVDD-------------VIITSASLA--------
YP_119877        ATLDKIAALGQDDSNG----PGDGPTSP-------------VTIQSVRLD--------
CAD25897         ECLSLIRDIQKIDIDR-------DRPVHP-------------VRIVRSGIVEEGEEKYL
CAD26352         -VVHKIAKY-----------GSESGQV---KKGYR------IEIRDCG---VLGSN--
AAD17998         -IVDKIQNV-----------PKGRND---RPLKD------VKIVKSG---ELEMEAD
G2959712         -VVKKVEG-----------YGSSSGKT-----RA------TFAIADCA---QLA----
CSNCC            KVVKALEAT-----------GSSSGAI---RYSKK------PTIVDCG---AL-----
AJ006689         SVVKEIEAL-----------GSSSGSV---RSNTR------PKIVNCG---EL-----
AAF28343         KVVQKMNAMQTNN---------DKPIDE-------------IRIIKATAN--------
AAD50375         DIVKKVENA----------ETDRS-----DRPKA---ACVIEDCG---QL-----
AAK21908         -VVRAIES-----------VGSSSGKT-----SR------PVVIANCG---QLS----
AAG13968         -VIKPIEAL-----------GSSSG-----TPKTK------VTIVNAG---TV-----
BAB58884         -VIKPIEAL-----------GSSSG-----TPKTK------VTIVNAG---TV-----
E1363908         -VVKAIEAE-----------GSGSG-----KPRSR------IEIAKCG---VC-----
AAD16142         QVVKEIEAL-----------GSSSGSV---RSAVK------PTIVDCG---EL-----
G1764137         -VVKAMEKT-----------GSQSG-----KTSSV------LKIEDCG---TL-----
Z32674           DVVKALEAT-----------GSGSGAV---KYNKR------ATIVKSG---EL-----
JT0686           NVVKALEAT-----------GSGSGAI---KYNKK------ATIVDCG---EL-----
CSCK             -IVKKIESF-----------GSGSG-----ATSKK------IVIEESG---QL-----
NP_986490        -VVKKVESM-----------GSSSG-----ATRAR------IVISKSG---EL-----
NP_985014        -VVKAIESY-----------GTGNG-----QPSAK------VVIEDAG---ELKE---
NP_984799        AVVREIEKEA----------VDSDGVP----------EKAVRIAGCGEWTQ------
NP_984183        RVVRAIERQ--------------ETAA-----DRPLA---DVRIDACG---ILPASYE
NP_982586        ELLEKVRHLPLD--------EQGKPTSN-------------LKIVGIHVDDLSIQNMD
NP_982486        -VVSAVEAV-----------PRNARD---VPDIS------VRIVACG---ELQDTPA
AAT09096         -VVDKIEA-----------AGSPSG---TPSKK------VTIVDSG---ELTDKSE
YP_014938        DVVDEIANLPTG--------MQDKPVND-------------VVIEKINIK--------
NP_951950        EVVDAIAGVKTG-NRA----GHSDPVEN-------------VFITRASVIE-------
NP_935388        DVIQQMASKPTK-SQG----YMRDIPVEP-------------IVITKATLLP-------
NP_907765        DVVRRIEYTETD-RS-------DRPKKE-------------QKILKAYLK--------
BAC91249         RTLRQLKVG-----------DTIQK-------------AEILNCKAAAFNEYR--
BAC90551         EVVAAIRAG-----------DKILKAA-------------ETS---APPAGAVPKT
BAC89441         TNAEKLRIG-----------DKILSAK-------------VVLGTEKFQPSAAGK-
BAC88914         DVVDKIQVG-----------DKILSAT-------------VVSGGGDPVGGSAPG-
AAV50868         DVLDKINSMIKPY--------AGRKYPT-------------FSIGKCG----------
AAV82698         DVLEAMAKLESQAYSDEI--GWADPVDP-------------PILKRIEVVPQN-----
AAV81872         DVVNTIKDVKTG-SAG----FHQDVPVED-------------VVIESVSVKD-------
NP_736022        ETVDKIASVEVT--------KSDQPKEK-------------ITITSIKVIK------
NP_734780        EVLDEIAAVE-------------------------------------------------
YP_085398        ETVLNMR---------------Q--------------------GDVMKEVKVWE
NP_643098        ELLSVTPRGPDPMG-------FYEDPAQR-------------APIRAIRLASEVPA---
NP_641352        DVVDSVAQGDTINTLT------IEGDTDA------------VLAAKADRVAEWNKILA
BAB76758         DILDTLKAG-----------DKIESAT-------------VVQGLDNLVQPQSA--
YP_129479        DVVNAIAKAKTT-SKY----GHDDVPCEA-------------IIIEKVTITE-------
YP_129310        DVVNKIKAVSTG-NSGY---VHQDVPVED-------------VAINNVTIEE-------
YP_129032        STIEKMTDIPTT-TIGSL--GMKDVPQQP-------------IVIKAIKIIK------
YP_101389        KHMKEIYKMR-----------KANDQDG-------------LYALQD-----------
YP_087816        NVVDKIAKVATG-RVG----MHRDVPKED-------------VVIKSVTVE--------
YP_087815        DVVDKIKGVKTG-NAG----FHQDVPKED-------------VVITSVTVE--------
YP_076496        LTQLESVEVRQGNSFD----PVPSTPVNP-------------PVIRKVTIAEE------
AAT91289         -VVKEIEAR-----------GTASG-----KPNAN------IKIAKSG---T------
AAT91260         -VIKEIEAR-----------GTXSG-----KPNAN------IKIAKSG---TV-----
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NP_868477       -VVKKIEAQ--------------GSGSGQ----TRKL------IKITEAG---EVKE---
NP_867717       DVVDAIEQGDTMKTVR------VTEE----------------------------------
NP_867158       DVREAISNMQVNNSTSNK--PTTDIVINN-------------ATVFNDTENS-------
NP_865515       DRVSAMRRKD-----------PSKTDEKK------------IQLPPDAIISAEVVRKG
NP_992233       DVVDKIKNVATG-RSG----MHQDVPKED-------------VIIKSVTISE-------
NP_991569       DVVEKISQVQTE-NVG----PYQNVPVKP-------------ITILSAKVLP-------
NP_280624       DVVETIGD---VETDA------NDAPASE-------------ITIDRVEIHE-------
BAC18575        ATLDAIAETGVEG--G----ATDGAPAEK-------------VVIETATVA--------
BAC16839        KVVDAIGT---TPTDR------MDRPIEP-------------VVIESVEIIK-------
BAB82272        DVVDKIANVKTDYNDM----PDEPQVMAK-------------VTVEN-AEGIEEPEIL-
BAB99042        ATLDAIAEVGTEG--G----TGDGAPAQE-------------VRIESAAVA--------
BAB97427        KVVDAIAT---TATDR------YDRPADA-------------VVIESVEITA-------
BAC08372        ETLRQLRQG-------------DKILSAK-------------VVDGLENLVQPA----
BAC07690        DVVDTIQQG-------------DRLQSAK-------------VVAGLENLQQP-----
YP_072215       DVVEKISQVQTE-NVG----PYQNVPVKP-------------ITILSAKVLP-------
YP_069574       DVVDKIKNVATG-RSG----MHQDVPKED-------------VIIKSVTISE-------
NP_778719       DVVDAIAQGDIINKIT------IEGDTDG-------------VLALKTDRIIEWNSILA
NP_245881       DVVDKIKGVKTG-NKG----FHQDVPQEA-------------IVITAVTVE--------
NP_245880       DVVDRISQVDTE-RSG----FHRDVPKAP-------------VIIKSVTIE-------
NP_354667       EAVDKIKRGAGGN---------GEVSNPD-------------RMIKVTVGKK------
NP_354666       EAIDKIKRG------------EPVKPD-------------SIVSIKLASAA-----
NP_298502       DVVDAIAQGDIINKIT------IEGDADS-------------VLALKADRIIKWNSILA
AAN39296        -VVKKVEK-----------FGSDSGKT-----SKK------IVIDASG---EC-----
AAQ24380        -VVTKVES-----------YGSGNGKT-----SAK------IVIANSG---QL-----
ZP_00353225     QVVDAIAN---MATGP------GDAPREP-------------VVISSVDVERD------
ZP_00244808     EVVDAIERVKTG-RQG----GHDDVPLED-------------VVITRANEVA-------
ZP_00244807     DVVDRIKGVPTT-NKG----PHQNVPATP-------------VLIKKATLEP-------
ZP_00358245     DVVYAIKQGDKMTKVT------VQEL-----------------------------------
ZP_00350273     EVVDQIKKVKTG-SKN----GHQDVPLEP-------------VIIERAEIV--------
ZP_00129494     DVVDAIGKLKTKPMGEHD-----DVPVDS-------------VVITGAGLFDL------
ZP_00130259     STIDAIKGVPTG-SYG----PFENVPLVP-------------VVINKAVVMD-------
ZP_00136576     GVVDQIAKVPTT-RRN----GFADVPSDD-------------VVILSAKRL-------
NF01760157      DVVDKIGNLKTD--------ENDRPVER-------------AYIKRAYIK-------


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NP_115861       ------------------------------------------------------------
NP_570981       ------------------------------------------------------------
NP_057143       ------------------------------------------------------------
CSHUB           FAIAKE------------------------------------------------------
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A57545          ------------------------------------------------------------
A41581          ------------------------------------------------------------
A54204          FVVE--------------------------------------------------------
664705          AQIA--------------------------------------------------------
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A45981          GGI---------------------------------------------------------
J40763          ------------------------------------------------------------
A47328          ------------------------------------------------------------
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KP_523512         --------------------------------------------------------
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KP_526904         ILTTRPFLL-----------------------------------------------
KP_516556         --------------------------------------------------------
KP_526001         --------------------------------------------------------
KP_516021         --------------------------------------------------------
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KP_525218         --------------------------------------------------------
KP_507684         --------------------------------------------------------
KP_524688         --------------------------------------------------------
KP_513346         QKVESHTI------------------------------------------------
KP_524598         --------------------------------------------------------
KP_515004         AGFAVT--------------------------------------------------
KP_523437         --------------------------------------------------------
KP_520485         --------------------------------------------------------
KP_519076         --------------------------------------------------------
KP_527705         --------------------------------------------------------
KP_527529         --------------------------------------------------------
KP_518678         --------------------------------------------------------
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NKCR_MOUSE        FEKKR---------------------------------------------------
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BAC34686          WGIFPKDGSGDSHPDFPEDAD-----------------------------------
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BAB25645          --------------------------------------------------------
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XP_321072         ---------------------------------------------------------
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XP_311949         ---------------------------------------------------------
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NP_001002065      WSIALNDGSGDAYPDFPEDSE-------------------------------------
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NP_998184         FAVAKE---------------------------------------------------
NP_001002146      ---------------------------------------------------------
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AAH62863          ---------------------------------------------------------
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NP_957285         ---------------------------------------------------------
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NP_492343     RI-------------------------------------------------------
NP_493624     FSVE-----------------------------------------------------
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E1335804      EDDGTDEL-------------------------------------------------
E1331567      ---------------------------------------------------------
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S62590        K--------------------------------------------------------
E1294518      ---------------------------------------------------------
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E1263915      ----------NYFTDIKPRSTK------------------------------------
CSBY          ---------------------------------------------------------
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S12324        S--------------------------------------------------------
S57050        ---------------------------------------------------------
S48567        ---------------------------------------------------------
CSBYC3        DLHAAY---------------------------------------------------
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663359          --HAK--------------------------------------------------------
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TcCyP19         ------------------------------------------------------------
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TcCyP21.1       ------------------------------------------------------------
TcCyP21.3       ------------------------------------------------------------
TcCyP24.3       ------------------------------------------------------------
TcCyP26         EEAQRALCGERALHSMPGKEVLDLISPRY-------------------------------
TcCyP28         KEQPTKQKDEV-------------------------------------------------
TcCyP30         ------------------------------------------------------------
TcCyP35.1       ------------------------------------------------------------
TcCyP35.3       ------------------------------------------------------------
TcCyP40         ------------------------------------------------------------
TcCyP110        ------------------------------------------------------------
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EAL37110        LEL---------------------------------------------------------
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EAL35294        ------------------------------------------------------------
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AAK14937        ------------------------------------------------------------
CAC18541        ------------------------------------------------------------
A45000          ------------------------------------------------------------
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G992633         FSVTNSDAVE--------------------------------------------------
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CAB58298        ------------------------------------------------------------
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AAD46565        ------------------------------------------------------------
A53522          ------------------------------------------------------------
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NP_701512       ------------------------------------------------------------
NP_701389       ------------------------------------------------------------
NP_701030       SVDN--------------------------------------------------------
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NF01495390      --------------------------------------------------------
NF01495324      --------------------------------------------------------
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NF01493918      -----------NPFHHLIPSIHYKEDKIKQKTEECSEIKPKKS-------------
E316521         --------------------------------------------------------
CAC35733        NMLYPS--------------------------------------------------
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J47813          --------------------------------------------------------
G2624966        --------------------------------------------------------
E1317902        AAV-----------------------------------------------------
E1319851        IAV-----------------------------------------------------
G3057040        KAV-----------------------------------------------------
AAB81959        --------------------------------------------------------
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AAB81961        --------------------------------------------------------
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AF252388        --------------------------------------------------------
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NF01725587      --------------------------------------------------------
NF01897292      --------------------------------------------------------
CSHYAC          --------------------------------------------------------
NF00071027      --------------------------------------------------------
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NF01105745      --------------------------------------------------------
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NF01286555      --------------------------------------------------------
NF01737225      --------------------------------------------------------
NF01590839      TKESEK--------------------------------------------------
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AAT69672        --------------------------------------------------------
AAH54186        --------------------------------------------------------
AAH54168        FAIAKE--------------------------------------------------
NF01208049      AQVAAEREKTQKAEEEERIKAQALLPKKEKRQEPKTYR------------------
NF01844632      ERKRHKSSSSSDSEDSSASDSSSDSSSDSKSEDEEKSKKKK---------------
NF01844615      -----------NPFDDIIPRIDKKTKKDEEEEGKKSKAKGTKN-------------
NF01915773      --------------------------------------------------------
NF01915657      --------------------------------------------------------
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AAH85963          ------------------------------------------------------------
AAH64250          ------------------------------------------------------------
AAH61335          WISSPADGSGD-------------------------------------------------
AAH59741          ------------------------------------------------------------
AAH67931          EKKRHKSSSS--------------------------------------------------
AAH44993          AQVAAERE----------------------------------------------------
A40516            FAIAKE------------------------------------------------------
CYPB_BOVIN        FAIAKE------------------------------------------------------
AAR19276          ------------------------------------------------------------
A46579            WGIFPKDG----------------------------------------------------
AAV40687          FL----------------------------------------------------------
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CYPR_BOVIN        ------------------------------------------------------------
CYPR_CALVI        PDDFS-------------------------------------------------------
E1317906          KEV---------------------------------------------------------
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Q9XZZ5            ------------------------------------------------------------
S63995            ------------------------------------------------------------
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J36797            ------------------------------------------------------------
AF017738          ----------NPFNDIVPREKK--------------------------------------
L37292            SSRS--------------------------------------------------------
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B53522            ------------------------------------------------------------
E280557           PKTPV-------------------------------------------------------
J70827            SSRSS-------------------------------------------------------
J70884            SFKS--------------------------------------------------------
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O1024669          YSVERADAIE--------------------------------------------------
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XP_483750         ------------------------------------------------------------
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KP_478741     -AES-------------------------------------------------------
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NP_919903     K-----------------------------------------------------------
BAD35839      -----------------------------------------------------------
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CAG88330      -----------------------------------------------------------
CAG88054      -----------------------------------------------------------
CAG86818      -----------------------------------------------------------
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NF00686348    TEEVKAAVEKQEAINLAEQQKQEEEVRRNAMRSFLPNHARLLPMQNRRRLRQSH
NF00686217    TEEVKAAVEKQEAINLAEQQKQEEEVRRNAMRSFLPNHARLLPMQNRRRLRQSH
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NF00926921    AEGEGTESPSKPDSEKEQAPVRDEI----------------------------------
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NF02035209    -----------------------------------------------------------
NF01329591    -----------------------------------------------------------
CAG86678      -----------------------------------------------------------
CAG86274      -----------------------------------------------------------
CAG85447      -----------QYFDDLVESKEHIAEPAKKK-----------------------------
CAG85287      -----------------------------------------------------------
CAG84900      PVPTSVDDGTGDIYEEVM-----------------------------------------
CAG84822      -----------------------------------------------------------
CAG84723      -----------------------------------------------------------
CAG79895      ETKEAEP----------------------------------------------------
CAG78939      -----------------------------------------------------------
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CAG81980      -----------------------------------------------------------
CAG81971      -----------------------------------------------------------
CAG81844      -----------------------------------------------------------
CAG84141      TQKAGADAGADAESRENKSGSRDRPKKPKRK----------------------------
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CAG83821      -----------------------------------------------------------
CAG76968      -----------------------------------------------------------
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CAG58658      -----------------------------------------------------------
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AAF65770      -----------------------------------------------------------
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CSRP          -----------------------------------------------------------
CSZM          -----------------------------------------------------------
CYPH_ALLCE    -----------------------------------------------------------
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K85185        ---------------------------------------------------
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L32095        ---------------------------------------------------
CAA10766      ---------------------------------------------------
AAF69796      ---------------------------------------------------
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CSNCM         ---------------------------------------------------
NF01287451    GMREPSASP------------------------------------------
NF01527836    ---------------------------------------------------
NF01488902    ---------------------------------------------------
NF00648058    VSADTKTADAYGDEYE-----------------------------------
NF01487278    GLEGQSEWASPAYANEDEK--------------------------------
NF01486260    ---------------------------------------------------
NF00904102    GIHVEL---------------------------------------------
NF01484914    GMREPSASP------------------------------------------
NF01484255    ---------------------------------------------------
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NF01533203    ---------------------------------------------------
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NF01527595    ---------------------------------------------------
NF01539217    ---------------------------------------------------
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YP_119877     ---------------------------------------------------
CAD25897      ---------------------------------------------------
CAD26352      ---------------------------------------------------
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G2959712      ---------------------------------------------------
CSNCC         ---------------------------------------------------
AJ006689      ---------------------------------------------------
AAF28343      ---------------------------------------------------
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BAB58884      ---------------------------------------------------
E1363908      ---------------------------------------------------
AAD16142      ---------------------------------------------------
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