

**Additional file 10. Multiple sequence alignment of CNGC-encoded proteins of *B. oleracea* and *B. rapa*.** Multiple sequence alignment was performed by clustal X2 and viewed by GeneDoc software package.

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*           20           *           40           *           60           *           80           *           100          *           120          *           140          *
Bra004537 : -----MEMMNLKRNFTVFKFTENEDSWNRPS-----VTSVIKKTVRRSFEKGGSEKIRTFKQQPLTFHSGKKNENKKK----- : 66
BoCNGC2   : -----MEMMNLKRNFTVFKFTENEDSWNRPS-----VTSVIKKTVRRSFEKGGSEKIRTFKQQPLTFHSGKKNENKKK----- : 66
Bra034281 : -----MERAS-----TIQSVHENIK--SVRGQLKKVYKTLKLTLENWRK----- : 36
BoCNGC3   : -----MERAS-----IMQSVHENIK--SVRGQLKKVYKTLKLTLENWRK----- : 36
Bra003323 : -----MTIFSVQSTLFRAS-----VALLSSNGLKRFSSASSFSSAALYSPFLPKTKKR----- : 49
Bra031515 : -----MKTLN--TRK----- : 8
Bra000937 : -----MGFGRDRSVR-FKPSSTTEFGYRRAR-----PSLNAVLDNVRRGFEKGGSDKIRTFKRFSLFNSHKNEEKRNATGTQ----- : 71
BoCNGC1   : -----MGFGRDNVRWFKEPSSTTEFGYRRAR-----PSLNAVLDNVRRGFEKGGSDKIRTFKRFSLFNSHKNEEKRNATGTQ----- : 72
Bra022632 : -----MNFQKEKVFVRFQDWKSDKTSVVEYSGRNEPFGIIFRRTITSISDKFHRSSARIKTFRRTYKSYSFKEAVSRKIGDS----- : 75
Bra003081 : -----MKFRLTSLTLSSCGSRVLHSSHKEGYTTISCASINSPMTMNFREDKSVRFHDWKSADKASDVEYS--EVPDGLYRRAISSISDKFHRSSLRKMLR---TSYFKETVSKGIVS- : 107
Bra020402 : MTFASLPHYHFCRASDRGLSRSSVIELAIMAGKPFQTFVSVDDLDFKLPSSSSLTRQHNYSSSISGFLPHIQ-----GSHNTSGSFKKRFQKSGKGLKISGRSLGFGVYRAVFPEDLKVS----- : 113
BoCNGC7   : -----MAGKPFQTFVSVDDLDFKLPSSSSLTRQHNYSSSISGFLPHIQ-----GSHNASGSFKKRFQKSGKGLKISGRSLGFGVYRAVFPEDLKVS----- : 85
Bra024067 : -----MDSRYSQ-GAEAGLNKCTLNLQGFPSRANG--AGQGNNNNASSGSFKKGFRRGSKGLWSLGRSIGLIGLVSRAVFPEDLKVS----- : 76
BoCNGC6   : -----MFCVCVKSQVKSQVISGQREKFRVRLDSMDSRYSQ-GSEAGLSKCTLNLQGGSRANG--TGQGNNNNASSGSFKKGFRRGSKGLWSLGRSIGL-VSRAVFPEDLKVS----- : 102
Bra039221 : -----MESKSQVISGHREKFIRLDSMDPR---SPEAGLNRCCTLNIQRFKRFQ-----ANKTSSGSFKKGFRRGSEGLWSIGRSIGLIGLVSRAVFPEDLEVS----- : 88
BoCNGC4   : -----MESKSQVISGHREKFIRLDSMDPR---SPEAGLNRCCTLNIQRFKRFQ-----ATKASSGSFKKGFRRGSEGLWSIGRSIGLIGLVSRAVFPEDLEVS----- : 88
Bra032132 : -----MFCDCGTNGVKSQVISGHREKFIRESMDSRYSQSSDNTGLNKCTLNIAQPKRFAQ-----GSKTSSGSFKKGFRRGSEGLWSIGRSIGLIGLVSRAVFPEDLKVS----- : 98
BoCNGC5   : -----MFCDCGTNGVKSQVISGHREKFIRESMDSRYSQSSDNTGLNKCTLNIAQPKRFAQ-----GSKTSSGSFKKGFRRGSEGLWSIGRSIGLIGLVSRAVFPEDLKVS----- : 98
Bra026086 : -----MMTKRNCFG-FPVKNRGSE-----KKRASKSFREGVKIGSEGLFSIGK---SVTRAVFPEDLRIS----- : 56
BoCNGC8   : -----MYKSQVISGQREKFRVRLDDLLSSASHATGMTRKRCFG-FPVKNRGSE-----KKRASKSFREGVKIGSEGLFSIGK---SVTRAVFPEDLRIS----- : 85
Bra008733 : -----MNKIRSLRFL-----LPETITSAASN---RGSVAVRYGSGVLPWR----- : 37
BoCNGC13  : -----MNKIRSLRFL-----LPETITSAASN---RGSVAVRYGSGVLPWR----- : 37
Bra018089 : -----MSNLHLHTSARFRN-----FPTAFSRRHHN---NNDLQNRGRSVFSELG----- : 42
BoCNGC14  : -----MSNLHLHTSARFRN-----FPTAFSRRHHN---NNDLQNRGRSVFSELG----- : 42
Bra011186 : -----MELRKDKILMLYSDDKKEPKEAIWAVN-DPMSKS--YKLSLPSALKPPDNLLSGNRISRYTDNNKSKSSKPSW----- : 70
BoCNGC10  : -----MELSKDKLLMLYSDDKKEPKEAIWAVN-DPMSKS--YKLSLPSALKPPDNLLAGNRISRYTDNNKTKSSKLSW----- : 70
Bra007839 : -----MEFKRDNTVRFYGEKQTLKLEATEKRFQFLPMFKPSTTQFLKPELVIPKKTNRTRLFKLPFRGGGLKVFPEFIE----- : 73
BoCNGC12  : -----MEFKRDNTVRFYGEKQTLKLEATEKRFQFLPMFKPSTTQFLKPELVIPKKTNRTRLFKLPFRGGGLKVFPEFIE----- : 73
Bra032081 : -----MEFKRDNTVRFYGEKQTLKLEATEKRFQFLPMFKSSAAPPKQKELGTSKKS---IFKIPRFRGFRKVFPEFIE----- : 69
BoCNGC11  : -----MEFKRDNTVRFYGEKQTLKLEATEKRFQFLPMFKSSAALFQKQELGTSKKS---IFKIPRFRGFRKVFPEFIE----- : 69
Bra011963 : -----MGYGNRSRVSFEEDSEVTKPQAVHEETAVKLKFKINGAQISPRKNVKKMTR---GKSFKDKVLSRVFTEDLGRV----- : 71
BoCNGC9   : -----MGYGNRSRVSFEEDSEVTKPQAVHEETAVKLKFKINGAQISPRKNVKKMTR---GKSFKAKVLSRVFTEDLGRV----- : 71
Bra021266 : -----MASPKE--NDDVPML-PISDTS---RTRPFTRSRSVLSLNTCSTIDGF-DSSTVVLGYTGPLRAQRPPPL-VQMSGPLSSTRPEPLFLLPPP-----DSVGISSSQPERYPSFATLEHKKS : 111
BoCNGC21  : -----MASPKE--NDDVPML-PISDTS---RTRPFTRSRSVLSLNTCSTIDGF-DSSTVVLGYTGPLRAQRPPPL-VQMSGPLSSTRNPEPLFLLPPP-----DSVGISSSQPERYPSFATLEHKKS : 110
BoCNGC20  : -----ME--KDDVPML-PVSDSSSLSTRPFTRSRSVLSLNTSSIIDGF-DSSTVVLGYTGPLRTRRPPPL-VQMSGPLSSTRSSEPLFLLPPP-----STRDVSSSQPERYPSFATLEHKKS : 110
BoCNGC22  : -----MAPPNE--KDDVPML-PISSSSSSRTRSFTRSFRSTSLANTSSAIDGF-DSSNVVLGYTGPLQTYGRPAF-VQMSASLSTLIPEPLFLHPTPTGG-SSHSIGVSSSQPESCP-FAALEHKNS : 117
Bra031529 : -----MAPPNE--NDDALKL-PVLDTSSSRTRPFTRSRSVLSLNTSSTSEGL-DSSTVVLRYTDPHRTQRRPPS-VQMNGLPSTSSSEPLILLPPPSTGGSSDPVGVSSSQPERYPSFAALEHDNS : 119
Bra001676 : -----MASPME--NDDVPML-PASDTSSSRTRPFTRSRSVLSLNTSSTIDVF-NSSTVVLGYTDPLGTQRRPPL-VQMSYPLSSTRSPEPRFALPPP-----STGASYSVSVGASSSQPNER : 108
BoCNGC18  : -----MASPME--NDDVPML-PASDTSSSRTRPFTRSRSVLSLNTSSTIDVF-NSSTVVLGYTNEHLGTQRRPPL-VQMSDPLSSTRSPEPRFALPPP-----STGASYSVSVGASSSQPNER : 108
Bra001678 : -----MASSNG--YDDVPML-PVSCITSSSRTRPFTRSRSVLSLNTSSTIDVFENSSTVVLGYTDPLGTQRRPQL-VQMGDPISSSTRNLELV----- : 84
BoCNGC19  : -----MASSNG--YDDVPML-PVSCITSSSRTRPFTRSRSVLSLNTSSTIDVFENSSTVVLGYTDPLGTQRRPQL-VQMGDPISSSTRNLELVSKHAHPY-----GTTCPSDYNREAAQIPTPR : 110
Bra021265 : -----MISPNE--NDQV---SPEATSAHTAFNFKNRSVLSLNTSSTIYIDGC-DNSKVALGYTVPIRTQRRPP-----GPLYSTPRP--ESHFPSP-----IEPPDS---SS-TVDVRSSE : 95
BoCNGC24  : -----MISPNE--NDQV---SPEATSAHTAFNFKNRSVLSLNTSSTIYIDGC-DNSKVALGYTVPIRTQRRPP-----GPLYSTPRP--ESHFPSP-----IEPPDS---SS-TVDVRSSE : 95
Bra022232 : -----MASPNE--KDEFPILLPVPEARSANTRAFNRSRVSFSNSTYSTNRV-DNSSVVLGYTGPLRTQRRLLPSPVQMSGPLYSTRRP-DQSFPPSP-----VQPPDS---SS-TVDVPSEE : 107
BoCNGC25  : -----MASPNE--KDEFPILLPVSEARPRANTRALNRSRVSFSNSTYSTNRV-DNSSVVLGYTGPLRTQRRPPSPVQMSGPLYSTRRP-DQSFPPSP-----VQPPDSLSLSS-TVDVPSEE : 110
Bra022233 : -----MASPNE--KDEFPILLPVSEARPRANTRALNRSRVSFSNSTYSTNRV-DNSSVVLGYTGPLRTQRRPPSPVQMSGPLYSTRRP-DQSFPPSP-----VQPPASLSS-TVDIPSEE : 102
BoCNGC26  : -----MAYPNE--SDEFPMLRQVPEARSRAQSRALNRSRVSFSNSTYSTNRV-DNSSVVLGYTGPLRTQRRPPSPVQMSGPLYSTRRP-DQSFPPSP-----VQPPESLSSSTVDIPSEE : 106
Bra029958 : -----MLPISDASSSSQTRVFTSRTSRVLSLNTSSTIETG---NSKAATLGYAGSLPSQRFPLF--MTGPLSSSTRR-----SSGYFGDLEEVNSSD : 82
BoCNGC23  : -----MVSPNK--NDKIHLPISDASSSSQTRVFTSRTSRVLSLNTSSTIETG---NSNAVTLYAGSLLSQRPPLV--MTGPLSSSTRRPEPLFPRPAP-----PPTRRSSGYFGDLEEVNSSD : 108
Bra022702 : -----MATEQEFTR---ASRVSGASSVGYSDDYKDEEEEEEEEE---EEMEETKDEEEEEPRVRVTCGGR---NGSPGSYNKWM--- : 76
BoCNGC15  : -----MATEQEFTR---ASRVSGASSVGYSDDYKDEEEEEEEEE---EEMEETKDEEEEEPRVRVTCGGR---NGSPGSYNKWM--- : 76
Bra003001 : -----MATEQEFTR---ASRVSRASSIGYSDDYTTDEEEEEEEEE---MEELE-EAEEEEETHVGGTCGIRRR---NGSSSYNKWMV--- : 76
BoCNGC16  : -----MATEQEFTR---ASRVSRASSIGYSDDYTTDEEEEEEEEE---MEELE-EAEEEEETHVGGTCGIRRR---NGSSSYNKWM--- : 76
Bra008699 : -----MPSHTNLFWRWIGLFSQKLRRETTISENNVGESSSSDDTFLVSSGECYACTQGVGPAFHSTSCDQANAFWRASAGSSLVFIQEGSAPFVRARIRR----- : 99
BoCNGC17  : -----MPSHTNLFWRWIGLFSQKLRRETTISENNVGESSSS-DDTFLVSSGECYACTQGVGPAFHSTSCDQANAFWRASAGSSLVFIQEGSAPDFVRARFRR----- : 98

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160      *      180      *      200      *      220      *      240      *      260      *      280      *      300
Bra004537 : -----IIRVMNENDSYIQNWNKIFLLLCVVATA-----FDPLFFELIPVW : 105
BoCNGC2  : -----IIRVMNENDSYIQNWNKIFLLLCVVATA-----FDPLFFELIPVW : 105
Bra034281 : -----AILLVCVVALG-----VDPLFFELIPVW : 58
BoCNGC3  : -----AILLVCVVALG-----VDPLFFELIPVW : 58
Bra003323 : -----RFPIVSAVDIGGVTVARNDDPTNNVPDSIFESNYANCYHQATVDPLFFELIPVW : 103
Bra031515 : -----IVLLVCLVATA-----IDPLFFELIPVW : 30
Bra000937 : -----KKNLINEQGSFIQNWNKIFLFASVIALA-----IDPLFFELIPVW : 110
BoCNGC1  : -----KKNLINEQGSFIQNWNKIFLFASVIALA-----IDPLFFELIPVW : 111
Bra022632 : -----SHKILDEQGFPIQRWNKIFVLACIIAVS-----IDPLFFELIPVW : 114
Bra003081 : -----THEILDEQGFPIQRWNKIFVLACIIAVS-----VDPLFFELIPVW : 146
Bra020402 : -----EKKILDEQDKTILFCNKLFVVISCIISVF-----VDEFFELIPVW : 152
BoCNGC7  : -----EKKILDEQDKTILFCNKLFVVISCIISVF-----VDEFFELIPVW : 124
Bra024067 : -----ERKILDEQDKFLLCNKLFVVISCIISVF-----VDPLFFELIPVW : 115
BoCNGC6  : -----EKKILDEQDKFLLCNKLFVVISCIISVF-----VDPLFFELIPVW : 141
Bra039221 : -----EKKILDEQDKFLLCNKLFVVISCIISVF-----VDPLFFELIPVW : 127
BoCNGC4  : -----EKKILDEQDKFLLCNKLFVVISCIISVF-----VDPLFFELIPVW : 127
Bra032132 : -----EKKILDEQDKFLLCNKLFVVISCIISVF-----VDPLFFELIPVW : 137
BoCNGC5  : -----EKKILDEQDKFLLCNKLFVVISCIISVF-----VDPLFFELIPVW : 137
Bra026086 : -----EKKILDEQDKTILWNRMLVISCIISVF-----VDPLFFELIPVW : 95
BoCNGC8  : -----EKKILDEQDKTILWNRMLVISCIISVF-----VDPLFFELIPVW : 124
Bra008733 : -----HQLLDEDSNIITYWNHVFLVTSIILALF-----LDFEYFNAPVW : 75
BoCNGC13 : -----HQLLDEDSNIITYWNHVFLVTSIILALF-----LDFEYFNAPVW : 75
Bra018089 : -----DTLLDESGDLIRWNHIFLITCLIALF-----LDFEYFNAPVW : 80
BoCNGC14 : -----DTLLDESGDLIRWNHIFLITCLIALF-----LDFEYFNAPVW : 80
Bra011186 : -----YKTLDEGSEILKWNWVFIISCMIALF-----IDPLFFELIPVW : 109
BoCNGC10 : -----YKTLDEGSEILKWNWVFIISCMIALF-----IDPLFFELIPVW : 109
Bra007839 : -----RDKILDEGGDVLLQWNRVFLFWCLVALY-----VDPLFFELIPVW : 112
BoCNGC12 : -----RDKILDEGGDVLLQWNRVFLFWCLVALY-----VDPLFFELIPVW : 112
Bra032081 : -----RDKILDEGGDVLLQWNRVFLFWCLVALY-----VDPLFFELIPVW : 108
BoCNGC11 : -----RDKILDEGGDVLLQWNRVFLFWCLVALY-----VDPLFFELIPVW : 108
Bra011963 : -----KNKILDERGQIRKWNKFLFLIACVLSIF-----VDPLFFELIPVW : 110
BoCNGC9  : -----KNKILDERGQIRKWNKFLFLIACVLSIF-----VDPLFFELIPVW : 110
Bra021266 : DDEFVLKHANLLRSQGLGMCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----KFHNALYDDARGWARRFATTANRYLPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 224
BoCNGC21 : DDEFVLKHANLLRSQGLGMCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----KFHNALYDDARGWARRFATTANRYLPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 223
BoCNGC20 : EEEFVLKHAHLLRSQGLGMCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----TFH----DARGWARRFATSINRHLPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 218
BoCNGC22 : DDELGLG-----SGOLEVCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----KLHHAMCDDARGWATRFVTSINKELTGLINEHYKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 214
Bra031529 : DDNSVLN-PHLLRSEKFGVCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----MFHSALYEDAKARARRFATSINRHLPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 231
Bra001676 : NHA-----YSRKAQSRTPRVFATSDF----TLHNALDDDARGWA-----KYFSGIIEESNFIQIWTTFALSCLLAIIF-----IDPLFFELIPVW : 185
BoCNGC18 : NHA-----YS-----RTPRVFATSDF----TLHNALDDDARGWA-----KYFSGIIEESNFIQIWTTFALSCLLAIIF-----IDPLFFELIPVW : 179
Bra001678 : -----HNARDDDARGWARRFVTSVDKYLPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 145
BoCNGC19 : -----MVHNARDDDARGWARRFVTSVDKYLPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 177
Bra021265 : E--SVLENANILKSGQLGMCNEPYCTTcpsyynrkaaQIPSSRVSAFFDS----FHTVLYDDARGWARRFASVRRCPVPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 203
BoCNGC24 : E--SVVKNANILTSQGLGMCNEPYCTTcpsyynrkaaQIPSSRVSAFFDS----FHTALYDDARGWARRFASVRRCPVPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 203
Bra022232 : D-EVVLKKNANLLKSGQLGMCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----FRTALYDDARGWARRFASVRRCPVPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 217
BoCNGC25 : D-EVVLKKNANLLKSGQLGMCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----FRTALYDDARGWARRFASVRRCPVPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 220
Bra022233 : V-EALLKKNANLLKSGQLGMCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----FHTVLYDDARGWARRFASVRRCPVPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 220
BoCNGC26 : V-EALLKKNANLLKSGQLGMCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----FHTVLYDDARGWARRFASVRRCPVPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 218
Bra029958 : N-DELLKHAHRLRSQGLGMCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----FHNALYDDARGWARRFASVRRCPVPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 191
BoCNGC23 : N-DELLKHAHRLRSQGLGMCNDPYCTTcpsyynrkaaQIPSSRVSAFFDS----FHNALYDDARGWARRFASVRRCPVPGIMNHSKFIQSWTKFFALSCLLAIIF-----IDPLFFELIPVW : 217
Bra022702 : -----LGRILDERSKLVQEWNRVFLVLCATGLF-----VDPLFFELIPVW : 115
BoCNGC15 : -----LGRILDERSKLVQEWNRVFLVLCATGLF-----VDPLFFELIPVW : 115
Bra003001 : -----LGRILDERSKLVQEWNRVFLVLCATGLF-----VDPLFFELIPVW : 115
BoCNGC16 : -----LGRILDERSKLVQEWNRVFLVLCATGLF-----VDPLFFELIPVW : 115
Bra008699 : -----LKGPFGEVLDERSKLVQEWNRVFLVLCATGLF-----VDPLFFELIPVW : 142
BoCNGC17 : -----LKGPFGEVLDERSKLVQEWNRVFLVLCATGLF-----VDPLFFELIPVW : 141

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Bra004537 : DPD---RFLKLDKLEAVACVFRFDIDAFYLVHMLFQF---NTGFIAPSS---RGFGRGLVQSSKRIAVRYL--KSYFIIDVLSLPIPIQ---VVVLAVVPE-SMSRPAASLVTKELDKWAIFC : 214  
 BoCNGC2 : DPG---RFLKLDKLEAVACVFRFDIDAFYVVHMLFQF---NTGFIAPSS---RGFGRGLVQSYKRIAVRYL--KSYFIIDVLSLPIPIQ---VVVLAVVPE-SMGRPAASLVTKELDKWVIFC : 214  
 Bra034281 : DSP---NFCFTFLDKKLAAVSAIRTFIDTFYVIHIFNF---ITBFIAPRS---QVSLRGLIVHSHKATRKRLF--FFQFIVDICSVLIPIQ---VVVLILH-RSD---SLVSQAIDKWIIT : 164  
 BoCNGC3 : DSP---NFCFTFLDKKLAAVSAIRTFIDTFYVIHIFNF---ITBFIAPRS---QVSLRGLIVHSHKATRKRLF--FFHFIIVDICSVLIPIQ---VVVLILH-RSD---SLVSQAIDKWIIT : 164  
 Bra003323 : DSH---KCFITLKKLVAVCVLRTLIDVFYVIHIFHFE---ITELVAPRS---QASLRG---NSKPIRKRLF--FFYFSDIVSVLPIPIQ---VMVLTLS-RKQK-TSLVSKELDKWAMFC : 207  
 Bra031515 : DSH---RLOFTYDKKLVATAVFRFDIDTFYGIHIFHFE---ITKHAPRS---QVSRFGETTVYSVAISERHL--IFYFIIDVIVSVLPIH--- : 110  
 Bra000937 : DGK---KFCINDHSSLEIAASVLRFDVDAFYIIVFQF---RTAYVSPLS---RVFGRGLVEDPKAIALKYL--SSYFIIDVLSLPLPQ---LVVLAVVPE-NVDKPVSLLTKDYITVIFA : 219  
 BoCNGC1 : DGK---KFCINDHSSLEIAASVLRFDVDAFYIIVFQF---RTAYVSPLS---RVFGRGLVEDPKAIALKYL--SSYFIIDVLSLPLPQ---LVVLAVVPE-NVEKPVSLLTKDYITVIFA : 220  
 Bra022632 : DDA---KRCIGLGNKMEITASVLRSEFTLDFYVIHIFQF---RTGFIAPSS---RVFGRGLVEDTRQIAIRYL--SSHFIIDILAVLPLPQVRIEIEIEIDLVLSTCISKPLMIVCFPQ---VVVLIIH-HMGRSRLNTRNLKFIIVFF : 251  
 Bra003081 : DKA---NNCLDVKMKQTTASVLRSEFTLDFYAIHVMVQF---RTGFIAPSS---RVFGRGLVEDRRKIAKRYL--SSHFIIDILAVLPLH---CMVHSIIEP-RMREPKTLHTKNMKFIVFF : 255  
 Bra020402 : DGE---SPCIGIDRKLAIATTTFTFDVYFLAHMAQL---RTAYIAPSS---RVFGRGLVIDBAQIAKRYL--QRWFIIIFLSVLPVPO---IVVWRFLQ-SSRGSVDLQKALFIVIV : 261  
 BoCNGC7 : NGE---SSCIGIDRKLAIATTTFTFDVYFLAHMAQL---RTAYIAPSS---RVFGRGLVIDBAQIAKRYL--QRWFIIIFLSVLPVPO---IVVWRFLQ-RSRGSVDLQKALFIVIV : 233  
 Bra024067 : NDS---GRCIGIDRRLATIATTTFTFDVYFLFRMAQF---RTAFVAPSS---RVFGRGLVIDBAQIAKRYL--QQYFIIDVFLSVLPLPQ---IVVWRFLY-TSTGGSVLETKQALRSIIV : 224  
 BoCNGC6 : NDS---GRCIGIDRRLATIATTTFTFDVYFLFRMAQF---RTAFVAPSS---RVFGRGLVIDBAQIAKRYL--QQYFIIDVFLSVLPLPQ---IVVWRFLY-TSTGGSVLETKQALRSIIV : 250  
 Bra039221 : NDK---ARCVGIDRKLAIIVTTLRTVIDSFYLFHMAFRE---RTAYVAPSS---RVFGRGLVIDBAQIAKRYL--QQYFIIDLLSVLPVPO---IVVWRFLY-SSRGSVDLQKALRYIVIV : 236  
 BoCNGC4 : NDK---ARCVGIDRKLAIIVTTLRTVIDSFYLFHMAFRE---RTAYVAPSS---RVFGRGLVIDBAQIAKRYL--QQYFIIDLLSVLPVPO---IVVWRFLY-SSRGSVDLQKALRYIVIV : 236  
 Bra032132 : NDK---ARCIGIDRKLAIIVATTLRTVIDSFYLFHMAFRE---RTAYVAPSS---RVFGRGLVIDPKQIAKRYL--RQYFIIDLLSVLPLPQ---IVVWRFLY-TSRGANVLATKQALRYIVIV : 246  
 BoCNGC5 : NDK---ARCIGIDRKLAIIVATTLRTVIDSFYLFHMAFRE---RTAYVAPSS---RVFGRGLVIDPKQIAKRYL--RQYFIIDLLSVLPLPQ---IVVWRFLY-TSRGANVLATKQALRYIVIV : 246  
 Bra026086 : DNS---GSSCIGIDTKLAVTTTTLRTILDVYFLTRMAQF---RTAYIAPSS---RVFGRGLVIDPAKIAQRYL--TRYFIIDVFLAVLPLPQ---IIVWKFLH-GSRGMDVLPKTAALNIVIT : 205  
 BoCNGC8 : DNS---GSSCIGIDTKLAVTTTTLRTILDVYFLTRMAQF---RTAYIAPSS---RVFGRGLVIDPAKIAQRYL--TRYFIIDVFLAVLPLPQ---IIVWKFLH-GSRGMDVLPKTAALNIVIT : 234  
 Bra008733 : G---G-PACLSVDVGLAATVIFFRSVALFHLHIFEMKE---RTAFVAPSS---RVFGRGLVDRPREIAMKYL--KSEFIIDVAAMLPLPQ---LVVWLVIH-AATNGTANHANSTALIVIV : 183  
 BoCNGC13 : G---G-PACLSVDVGLAATVIFFRSVALFHLHIFEMKE---RTAFVAPSS---RVFGRGLVDRPREIAMKYL--KSEFIIDVAAMLPLPQ---LVVWLVIH-AATNGTANHANSTALIVIV : 183  
 Bra018089 : QA---G-TACMSIIGFGLVIFFRTLADFSFLIHILKFE---RTAFVSKSS---RVFGRGLVIDRREIAIRYL--KSEFIIDLAATLPLPQ---IMVWFVFNAGEFRYAASHQNHLSLVVLI : 190  
 BoCNGC14 : QA---G-TACMSIIGFGLVIFFRTLADFSFLIHILKFE---RTAFVSKSS---RVFGRGLVMDRREIAIRYL--KSEFIIDLAATLPLPQ---IMVWFVFNAGEFRYAASHQNHLSLVVLI : 190  
 Bra011186 : GGNKD-YFCAKTIINLRILVIFFRTIADFLYLLHIFEMKE---RTGFIAPSSST---RVFGRGLVMDPKAIAWRYL--KSEFIIDLVATLPLPQ---IVVWFVMP-ATRSYRFDHSNNDALIVIL : 222  
 BoCNGC10 : GGNKD-YFCAKTIINLRILVIFFRTIADFLYLLHIFEMKE---RTGFIAPSSST---RVFGRGLVMDPKAIAWRYL--KSEFIIDLVATLPLPQ---IVVWFVMP-ATRSYRFDHSNNDALIVIL : 222  
 Bra007839 : KNTGR-SSCMTLLKLGIVVIFFRTLADFLYVLHIVKFE---RTAYVSRIS---RVFGRGLVKDKPKLIARRYL--RSDFIIDVLIACLPLPQ---IVSWFIFP-SIRSSHDHTTNAVLIVIV : 223  
 BoCNGC12 : KNTGR-SSCMTLLKLGIVVIFFRTLADFLYVLHIVKFE---RTAYVSRIS---RVFGRGLVKDKPKLIARRYL--RSDFIIDVLIACLPLPQ---IVSWFIFP-SIRSSHDHTTNAVLIVIV : 223  
 Bra032081 : KRTGR-SSCMTLLNNGIIVVIFFRTLADFLYVLHIVKFE---RTAYVSRIS---RVFGRGLVKDKPKLIARRYL--RSDFIIDVLIACLPLPQ---IVSWFIFP-SIRSSHDHTTNAVLIVIV : 219  
 BoCNGC11 : KRTGR-SSCMTLLNNGIIVVIFFRTLADFLYVLHIVKFE---RTAYVSRIS---RVFGRGLVKDKPKLIARRYL--RSDFIIDVLIACLPLPQ---IVSWFIFP-SIRSSHDHTTNAVLIVIV : 219  
 Bra011963 : R---K-EACITIGIRLEVVLIVRSIADAFYIAQIVRF---RTAYIAPSS---RVFGRGLVIDSRKIAWRYL--NRSEFVHVAALPLPQ---VLLWIVIF-NLRGSPMTNTRNTRFIIF : 218  
 BoCNGC9 : R---K-EACITIGIRLEVVLIVRSIADAFYIAQIVRF---RTAYIAPSS---RVFGRGLVIDSRKIAWRYL--NRSEFVHVAALPLPQ---VLLWIVIF-NLRGSPMTNTRNTRFIIF : 218  
 Bra021266 : KQNDK---CIVIDWPMAKAFVAVRSVTDILFVSNLILQF---RLAYVAPES---TVVGAGQLVAHPRKIAARMF--RGKFLDLFIVMPLPQ---ILLWIFPAHLGASGANYAKNLDRAAVIF : 334  
 BoCNGC21 : KQNDK---CIVIDWPMAKAFVAVRSVTDILFVSNLILQF---RLAYVAPES---TVVGAGQLVAHPRKIAARMF--RGKFLDLFIVMPLPQ---ILLWIFPAHLGASGANYAKNLDRAAVIF : 333  
 BoCNGC20 : KQNNN---CIVIDWPMAHTFVAVRSVTDVLFVSNLILQF---RLAYVAPES---TVVGAGQLVDHPRKIASHMF--RGKFLDLFIVMPLPQ---ILLWIFPAHLAISGANYAKNLDRAAVIF : 328  
 BoCNGC22 : KENDK---CIVIDWPMAKAFIAVRSVTDVLFVSNLILQF---RLAYATLES---TVVGAGQLVDHPRKIAARMF--RVKFLDLFIVMPLPQ---IIVWFILPVQLGASGDNYAKNLDRAAVIF : 324  
 Bra031529 : KQNNK---CIVIDWPMAKAFIAVRSVTDVLFVSNLILQF---RLAYVSPES---MVGVTWLVDPKIAARMF--QGNFLLDFIVMPLPQ---ILLWIFPAHLGASWENNAYSLLQAIVIL : 341  
 Bra001676 : YKEER---CIVIDWWTINNVFIVRSITDGLYALNIVQF---RLAYVDLES---TVVGAGQLVDDPKKIASHMF--RGKFLDFFIVLPIPIQ---ILLWIFPQLLGTSGANNTKNYLRAAIV : 295  
 BoCNGC18 : YKEER---CIVIDWWTINNVFIVRSITDGLYALNIVQF---RLAYVDLES---TVVGAGQLVDDPKKIASHMF--RGKFLDFFIVLPIPIQ---ILLWIFPQLLGTSGANNTKNYLRAAIV : 289  
 Bra001678 : SESGK---CIVIDWWTINNVFIVRSITDGLYALNIVQF---RLAYTDEKS---TVVGAGQLVKGSVETAKRYL--RGNFLLDLVIVIPPIQ---ILLWIFPQLLGTSGANNTKNYLRAAIV : 255  
 BoCNGC19 : SQSGK---CIVIDWWTINNVFIVRSITDGLYALNIVQF---RLAYTDEKS---TVVGAGQLVKGSVETAKRYL--RGNFLLDLVIVIPPIQ---ILLWIFPQLLGTSGANNTKNYLRAAIV : 212  
 Bra021265 : RHDNK---CIVIDWPRTITVLVSRSMFDLIFFNILQ---FRMAYVAPES---RIVGAGQLVDHPRKIAARMF--RGKFLDLFIVLPIPIQ---IMTILSIHFAHLGTSTAGFERNITRSTFIV : 313  
 BoCNGC24 : RHDNK---CIVIDWPKTKVFSVSRSMFDLIFFNILQ---FRMAYVAPES---RIVGAGQLVDHPRKIAARMF--RGKFLDLFIVLPIPIQ---IMTILSIHFAHLGTSTAGFERNITRSTFIV : 313  
 Bra022232 : RQDNK---CIVIDWPRTKVFVSRSMFDLIFFNILQ---FRMAYVAPES---RIVGAGQLVDHPRKIASNYL--RGKFLDLILVLPMPQ---IMTILSIHFAHLGTFRSELEKNIIRIVFLF : 327  
 BoCNGC25 : RQDNK---CIVIDWPRTKVFVSRSMFDLIFFNILQ---FRMAYVAPES---RIVGAGQLVDHPRKIASNYL--RGKFLDLILVLPMPQ---IMTILSIHFAHLGTFRSELEKNIIRIVFLF : 330  
 Bra022233 : RDDNK---CTDIDWPKATLFLFRSMDFIFFNIDILQ---FRMAYVAPES---RIVGAGQLVDHPRKIAARMF--RGKFLDVIIVVPPVPO---IMLISILP-----KSEFEENAIIGFIFL : 324  
 BoCNGC26 : --DNK---CTDIDWPKATLFLFRSMDFIFFNIDILQ---FRMAYVAPES---RIVGAGQLVDHPRKIAARMF--RGKFLDVIIVVPPVPO---IMLISILP-----KSEFEENAIIGFIFL : 320  
 Bra029958 : QKNNK---CIVIDWPIATAFVIVRTLTVIFFANMLIQ---FRMAYVARES---TVVGAGQLV-----LVLSVIFPAQLAISGTNYAKNLDRTGIV : 273  
 BoCNGC23 : QKNNK---CIVIDWPIATAFVIVRTLTVIFFANMLIQ---FRMAYVARES---TVVGAGQLV-----LVLSVIFPAQLAISGTNYAKNLDRTGIV : 331  
 Bra022702 : N---DACMCLLDGWLALVTIAIRSMTDLLHLWNILQFKIARWVFPGGSDGDKNGDTRVVM--RGPFPYVKKNG--EFFDLFVILPLPQ---VVLVVVVIPSLLKRGSVILVSVLILTLFLF : 231  
 BoCNGC15 : N---DACMCLLDGWLALVTIAIRSMTDLLHLWNILQFKIARWVFPGGSDGDKNGDTRVVM--RGPFPYVKKNG--EFFDLFVILPLPQ---VVLVVVVIPSLLKRGSVILVSVLILTLFLF : 231  
 Bra003001 : N---DACMCLLDGWLALVTIAIRSMTDLLHLWNILQFKIARWVFPGGSDGDKNGDTRVVM--RGPFPYVKKNG--EFFDLFVILPLPQ---VVLVVVVIPSLLKRGSVILVSVLILTLFLF : 234  
 BoCNGC16 : N---DACMCLLDGWLALVTIAIRSMTDLLHLWNILQFKIARWVFPGGSDGDKNGDTRVVM--RGPFPYVKKNG--EFFDLFVILPLPQ---VVLVVVVIPSLLKRGSVILVSVLILTLFLF : 234  
 Bra008699 : GRT-TGPRCLYMDGFAAVVIVVRCCLDALHLHWVWQFRLA---YVSRES---LVVGCGLVWDPRALISHYARSLTGEWFVDVIVLFPVPO---AVFWLVVPKLIREEKVKLIMTILLLIFL : 256  
 BoCNGC17 : GRT-TGPRCLYMDGFAAVVIVVRCCLDALHLHWVWQFRLA---YVSRES---LVVGCGLVWDPRALISHYARSLTGEWFVDVIVLFPVPO---AVFWLVVPKLIREEKVKLIMTILLLIFL : 255

C d R3 D s g g l a y f d p pq



460 \* 480 \* 500 \* 520 \* 540 \* 560 \* 580 \* 600  
 Bra004537 : QYVPRIRIYPIYFKEVTRTSGLVTEATAGAALNLFYMLASHVFGSFWYLSIERKDRCWRECAKI-----EGCVHG--NLYCGGGED-----NSQYLIGSCPLMDPEEIKN-STVENFGIFADALQSGVVE--MNEFKKE : 343  
 BoCNGC2 : QYVPRIRIYPIYFKEVTRTSGLVTEATAGAALNLFYMLASHVFGSFWYLSIERKDRCWRECAKI-----KGC1HA--YLYCGGGED-----NSQYLIGSCPLMDPEEIKN-STVENFGIFADALQSGVVE--MDFPKKE : 343  
 Bra0034281 : QYVPRIRIYPIYFKEVTRASCTIAETKVGAAFNLFYMLASHVFGAFWYVSSVEKKNKOWRECAKI-----SGCNLR--HYCGARGR-N-----NGRYLNTTCLPIDPDIIG-STVENFGIYTDALRSIVGVEKPRDFPRKE : 296  
 BoCNGC3 : QYVPRIRIYPIYFKEVTRASCTIAETKVGAAFNLFYMLASHVFGAFWYVSSVEKKNKOWRECAKI-----FGCNLR--YQYCARGRQ-N-----NGRYLNTTCLPIDPDIIG-STVENFGIYTDALRSIVGVEKPRDFPRKE : 296  
 Bra003323 : QSIPIRSIRIYPIYKNGTKLYGRVAVTRVGAALNLFYVLIYPSHVIAGIYVLSAVEKKECTCWRECAKI-----DECLT--NLLCARGAGGD-----NSRFLNTSCPLIDPEQITN-STVNLFGIYTDALRSIVGVE--RDFPRKE : 338  
 Bra0031515 : -----QVFGAFWYLSAIEKKNRSDCAKAS--SMCNLTNLDLYCGVGGG-D-----NSHFLKISCPILDPGEITN-STVENFGIYTDALRSIVGVE--RDFPRKE : 200  
 Bra000937 : QYIPRILRIYPIYSEVTRTSGIVTEATAGAAWNLSIYMLASHVFGALWYLSVEREDROWRECAKRR-----QGCELR--FLYCGDNNN-V-----INDYLTSCPFINPDDITN-STVENFGIYTDALRSIVGVE--DDFWKKE : 349  
 BoCNGC1 : QYIPRILRIYPIYSEVTRTSGIVTEATAGAAWNLSIYMLASHVFGALWYLSVEREDROWRECAKRR-----QGCELR--FLYCGDNNN-V-----INDYLTSCPFINPDDITN-STVENFGIYTDALRSIVGVE--DDFWKKE : 350  
 Bra022632 : QYIPRFIRIYPIYKQVTRTSGILTEATAGAAFNLFYMLASHVFGAFWYLSIERETVQWRQACNRN-----RNICDIT--SLYCDHKAAG-----GNAFLNASCPVQTP---N-ATLDFGIFLALQSGVVE--QDFPQKE : 378  
 Bra003081 : QYIPRFMRIYPIYKQVTRTSGILTEATAGAAFNLFYMLASHVFGAFWYLSIERETVQWRQACNRN-----RSKCDMR--SLYCAREHY-G-----NNTFLNGSCPVLKP---N-ATLDFGIFLALQSGVVE--HDFPQKE : 383  
 Bra020402 : QYIPRFLRVLPIYSELKRTAGVFAETAAGAAYYLLYMLASHVFGAFWYLSALERNDAQWQEAQSDAG---KKICTTG--FLYCGNQMDG-YDVWNKTKAEVLESRCRADLDD---P-NPPDFGIFLALQSGVVE--QKFIITKY : 398  
 BoCNGC7 : QYIPRFLRVLPIYSELKRTAGVFAETAAGAAYYLLYMLASHVFGAFWYLSALERNDAQWQEAQSDAG---KKICTTG--FLYCGNQMDG-YDVWNKTKAEVLESRCRADLDD---P-NPPDFGIFLALQSGVVE--QKFIITKY : 370  
 Bra024067 : QYIPRFIRIYPIYSELKRTAGVFAETAAGAAYYLLYMLASHVFGAFWYLSALERNDAQWQEAQSDAG---QNCTRN--FLYCGNENMDG-YAAWNITIKESVLQKSCPVNVTG--D-NPPDFGIFLALQSGVVE--ESFVAKY : 361  
 BoCNGC6 : QYIPRFFRIYPIYSELKRTAGVFAETAAGAAYYLLYMLASHVFGAFWYLSALERNDAQWQEAQSDAG---QNCTRN--FLYCGNENMDG-YAAWNITIKESVLQKSCPVNVTG--D-NPPDFGIFLALQSGVVE--ESFVAKY : 387  
 Bra039221 : QYIPRFLRMYPIYSELKRTAGVFAETAAGAAYYLLYMLASHVFGAFWYLSALERNDAQWQEAQSDAG---DNCTRN--FLYCGNQMKG-YDAWDDVKDFLQRCFVNVTG--E-EPPDFGIFLALQSGVVE--KKEVSKY : 372  
 BoCNGC4 : QYIPRFLRMYPIYSELKRTAGVFAETAAGAAYYLLYMLASHVFGAFWYLSALERNDAQWQEAQSDAG---DNCTRN--FLYCGNQMKG-YDAWDDVKDFLQRCFVNVTG--E-EPPDFGIFLALQSGVVE--KKEVSKY : 372  
 Bra032132 : QYIPRFRMYPIYSELKRTAGVFAETAAGAAYYLLYMLASHVFGAFWYLSALERNDAQWQEAQSDAG---DNCTRN--FLYCGNQMEG-YAAWYAKSSVLQEMCPVNVTG--E-EPPDFGIFLALQSGVVE--KKEVSKY : 382  
 BoCNGC5 : QYIPRFLRMYPIYSELKRTAGVFAETAAGAAYYLLYMLASHVFGAFWYLSALERNDAQWQEAQSDAG---DNCTRN--FLYCGNQMEG-YAAWYAKSSVLQEMCPVNVTG--E-EPPDFGIFLALQSGVVE--KKEVSKY : 382  
 Bra026086 : QYIPRVRFIPIYSELKRTAGVFAETAAGAAYYLLYMLASHVFGAFWYLSALERNDAQWQEAQSDAG---DPKLCVQ--ILYCGTKFVSSRETEWIKTVPPELLKNSCSAKADD-----AKENYGIYQALSSGIVS--TTFFSKE : 341  
 BoCNGC8 : QYIPRVRFIPIYSELKRTAGVFAETAAGAAYYLLYMLASHVFGAFWYLSALERNDAQWQEAQSDAG---DPKLCVQ--ILYCGTKFVSSRETEWIKTVPPELLKNSCSAKADD-----AKENYGIYQALSSGIVS--TTFFSKE : 370  
 Bra008733 : QYIPRSFIYPIYFNQRIIKTGFIAKTAAGAAYNLLYILASHVFGAMWYLSIGRQFSQWKEKDH-ALRVLDCPLS--FLDCK-SLQFP-----ERQYQNVTVQLSHCDATSS-TTNKFGIFADALFTTQVAT---DFVSN-- : 318  
 BoCNGC13 : QYIPRSFIYPIYFNQRIIKTGFIAKTAAGAAYNLLYILASHVFGAMWYLSIGRQFSQWKEKDH-ALRVLDCPLS--FLDCK-SLQFP-----ERQYQNVTVQLSHCDATSS-TTNKFGIFADALFTTQVAT---DFVSN-- : 317  
 Bra018089 : QYVPRILVLPINRRIIKATGVAAKTASGAAYNLLYVLSHVLGSAWYVLSLQRQHECWRRREIKEMNATHSPSCNLL--FLDCG-SLRDP-----GRQAWMRITRVLNSCDARNDDQHFQFGMFGDFTNDVTS---PFFDKY : 327  
 BoCNGC14 : QYVPRILVLPINRRIIKATGVAAKTASGAAYNLLYVLSHVLGSAWYVLSLQRQHECWRRREIKEMNATHSPSCNLL--FLDCG-SLRDP-----GRQAWMRITRVLNSCDARNDDQHFQFGMFGDFTNDVTS---PFFDKY : 327  
 Bra011186 : QYIPRFYIYPIYSSQIVKATGVVTKTATAGAAYNLLYMLASHVFGAAYWYLSLFDRTYSQWTRONKEH---GGVNCYLY--YLDOSPLYDA-----RQQQWANVTNVFKLCDAR-K--GEKYGIFADALTKNVVS---NFENERY : 354  
 BoCNGC10 : QYIPRFYIYPIYSSQIVKATGVVTKTATAGAAYNLLYMLASHVFGAAYWYLSLFDRTYSQWTRONKEH---GGVNCYLY--YLDOSPLYDA-----RQQQWANVTNVFKLCDAR-K--GEKYGIFADALTKNVVS---NFENERY : 354  
 Bra007839 : QYIPRLYIYPIYSAEIIKATGVVTTATAGAAYNLLYMLASHVFGAAYWYLSLFDRTYSQWTRONKEH---GPIRCVTD--FFDCG-TVNR-----DRNNWQNVTVVFNCDPSNK--IRTFGIFADALTKNVVS---PFLEKY : 355  
 BoCNGC12 : QYIPRLYIYPIYSAEIIKATGVVTTATAGAAYNLLYMLASHVFGAAYWYLSLFDRTYSQWTRONKEH---GPIRCVTD--FFDCG-TVNR-----DRNNWQNVTVVFNCDPSNK--IRTFGIFADALTKNVVS---PFLEKY : 355  
 Bra032081 : QYIPRLYIYPIYSAEIIKATGVVTTATAGAAYNLLYMLASHVFGAAYWYLSLFDRTYSQWTRONKEH---APLECVID--FFDCG-TLHRP-----DRNNWQNVTVVFNCDPSND--IRTFGIFADALTKNVVS---PFLEKY : 351  
 BoCNGC11 : QYIPRLYIYPIYSAEIIKATGVVTTATAGAAYNLLYMLASHVFGAAYWYLSLFDRTYSQWTRONKEH---APLECVID--FFDCG-TLHRP-----DRNNWQNVTVVFNCDPSND--IRTFGIFADALTKNVVS---PFLEKY : 351  
 Bra011963 : QYVPRMFLIYPIYSRQIIKATGVVTTATAGAAYNLLYMLASHVFGAAYWYLSLFDRTYSQWTRONKEH---PICQYR--FFDCR-RLEDP-----QRNSWFWSNITICKPGTR---FMEFGIYGDVAVTSTVTS---NFISKY : 347  
 BoCNGC9 : QYVPRMFLIYPIYSRQIIKATGVVTTATAGAAYNLLYMLASHVFGAAYWYLSLFDRTYSQWTRONKEH---TICQYR--FFDCR-RLEDP-----QRNSWFWSNITICKPGTR---FMEFGIYGDVAVTSTVTS---NFINKY : 347  
 Bra021266 : QYIPKLYRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----SDHECRNIDCG-----RGSESAFAAWKGNASASACFQEGGFYGIYKAVNLTNHTS----LFTRY : 459  
 BoCNGC21 : QYIPKLYRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----SDHECRNIDCG-----RGSESAFAAWKGNASASACFQEGGFYGIYKAVNLTNHTS----LFTRY : 458  
 BoCNGC20 : QYIPKLYRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----TDRPCRELIDCG-----HGSETSASAANKDNAGASACFQEDGFYGIYKAVNLTNHTS----LFTRY : 452  
 BoCNGC22 : QYIPKLCRLLPILAGQT-PTVFLFESACS-FVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----SHQECELIDCG-----HGNS--HVAAWKDNASAIACFQEDGFYGIYKAVNLTNHTS----LFTRY : 446  
 Bra031529 : QYIPKLYRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----TDRACRELIDCG-----RGSSDVVLAALKYNTSASACFQENGFFYGIYKAVNLTNHTS----LITIH : 465  
 Bra001676 : QYIPKLRLLPILAGQT-PRGFRFDSALAKFFINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----SSFECKQIDCG-----RENTEVLHAWKINVSANACFQEDGFYGIYKAVNLTNHTS----WYRRY : 415  
 BoCNGC18 : QYIPKLRLLPILAGQT-PRGFRFDSALAKFFINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----SSFECKQIDCG-----RENTEVLHAWKINVSANACFQEDGFYGIYKAVNLTNHTS----WYRRY : 415  
 Bra001678 : QYIPKLRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----ESKCHGVCKELIDGLRLREK-LIDCERRNTVTQAVLNWNVTAAACFQENGFFYGIYKAVNLTNHTS----LPKRY : 396  
 BoCNGC19 : -----RVNRLRETQEDHM---ELKCHGVCKELIDGLRLREK-LIDCERRNTVTQAVLNWNVTAAACFQENGFFYGIYKAVNLTNHTS----LPKRY : 299  
 Bra021265 : QYIPKLYRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----NSVDERRNIDARG-----NIYASLARWRDSDSVNACFQESGFYGIYKAVNLTNHTS----IFTRY : 442  
 BoCNGC24 : QYIPKLYRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----NSVDERRNIDARG-----NMYASASLRWRDSDSVNACFQESGFYGIYKAVNLTNHTS----IFTRY : 442  
 Bra022232 : QYIPKLYRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----YTMDEARNIDARG-----VNYARESQUALWRDSDSVNACFQEGGFYGIYKAVNLTNHTS----IFTRY : 455  
 BoCNGC25 : QYIPKLYRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----YTMDEARNIDARG-----VNYARESQUALWRDSDSVNACFQEGGFYGIYKAVNLTNHTS----IFTRY : 458  
 Bra022233 : QYIPKLYRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----FTMDERRNIDARG-----ESYLR---ALWRDSDSVNACFQEGGFYGIYKAVNLTNHTS----IFTRY : 448  
 BoCNGC26 : QYIPKLYRLLPILAGQT-PTGFIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----FTMDERRNIDARG-----ESYLR---ALWRDSDSVNACFQEGGFYGIYKAVNLTNHTS----IFTRY : 444  
 Bra029958 : QYIPKLYRLLPILAGQT-PTGLIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----HSGRECRGIDCGHG-----NSNISASLRAIWRNSANACFQEDGFYGIYKAVNLTNHTS----LLTRY : 401  
 BoCNGC23 : QYIPKLYRLLPILAGQT-PTGLIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----HSGRECRGIDCGHG-----NSNISASLRAIWRNSANACFQEDGFYGIYKAVNLTNHTS----LLTRY : 459  
 Bra022702 : QYIPKLYRLLPILAGQT-PTGLIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----CDLRMLSCKEFYGGTTEVMV---DRARLAWARNHQ---ARSVCLDIDTNYGAYKWIQLVSNES----RLEKI : 367  
 BoCNGC15 : QYIPKLYRLLPILAGQT-PTGLIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----CDLRMLSCKEFYGGTTEVMV---DRARLAWARNHQ---ARSVCLDIDTNYGAYKWIQLVSNES----RLEKI : 367  
 Bra003001 : QYIPKLYRLLPILAGQT-PTGLIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----CDLRMLSCKEFYGGTTEVMV---DRARLAWARNHQ---ARSVCLDIDTNYGAYKWIQLVSNES----RLEKI : 370  
 BoCNGC16 : QYIPKLYRLLPILAGQT-PTGLIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----CDLRMLSCKEFYGGTTEVMV---DRARLAWARNHQ---ARSVCLDIDTNYGAYKWIQLVSNES----RLEKI : 370  
 Bra008699 : QYIPKLYRLLPILAGQT-PTGLIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----CNI-SLSCQEBVYGFVSPSS---TIGFPVCSGNLTSVVKPKMCLDSGDFRYGIFGVALPVISSN---LAVKI : 394  
 BoCNGC17 : QYIPKLYRLLPILAGQT-PTGLIFESANFVINLLTFMLAGHVGSCWYLFGLQRVNQLRDAAGN-----CNI-SLSCQEBVYGFVSPSS---TIGFPVCSGNLTSVVKPKMCLDSGDFRYGIFGVALPVISSN---LAVKI : 393



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*      620      *      640      *      660      *      680      *      700      *      720      *      740      *
Bra004537 : FICFW-----WGLRNL SAVGQNLKTSDFEGEIIIGAVLIIICISGLVLFALLIGNMCKYLOSTT-----VRIDEMRVKRRDAPQCWM SHRMLHDDLKRVRR : 430
BoCNGC2 : FICFW-----WGLRNL SALGQNLKTSDFEGEIIIGAVLIIICISGLVLFALLIGNMCKYLOSTT-----VRVEEMRVKRRDAPQCWM SHRMLHDDLKRVRR : 430
Bra0034281 : FICFW-----WGLRNL SALGQNLKTSNSVGDIVFALIIICVSGLLLEAVLIGNIQKYLQSTT-----IRLDEMEEKRRDIDKQWMSNRMLHEYLKERIR : 383
BoCNGC3 : FICFW-----WGLRNL SALGQNLKTSNSVGDIVFALIIICVSGLLLEAVLIGNIQKYLQSTT-----IRLDEMEEKRRDIDKQWMSNRMLHEYLKERIR : 383
Bra003323 : LKCFW-----WGLRNL SALGQNLKTSNSAGSVFAGLIIICVSGVLLFAGLIGNVQKYLQSTT-----IRVDWEAKRRDIDQCWMPSEDLHDDLEKCTI- : 424
Bra0031515 : FICFW-----WGLRNL SALGQNLKTSNSVGEIIFGAVLIIICVSGLLLEAVLIGNVQKYLQSTT-----VRINDMEEKRRDIDKQWMSYRMLHESLKERIR : 287
Bra000937 : FICFW-----WGLRNL SALGQNLKTSKFVGEIIGAVLIIICISGLVLFALLIGNMCKYLESTT-----VRDEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 436
BoCNGC1 : FICFW-----WGLRNL SALGQNLKTSKFVGEIIGAVLIIICISGLVLFALLIGNMCKYLESTT-----VRDEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 437
Bra022632 : FICFW-----WGLQNLSSLGQNLKTSYIWFNCGAVFTSISGLVLFESLIGNMCTYLOSTT-----TRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 465
Bra003081 : FICFW-----WGLQNLSSLGQNLKTSYIWFNCGAVFTSISGLVLFESLIGNMCTYLOSTT-----TRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 470
Bra020402 : CYCLW-----WGLQNLSTLGGQLETSYPLBIMESITTAISGLLIFALLIGNMCTYLOSLT-----TRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 485
BoCNGC7 : CYCLW-----WGLQNLSTLGGQLETSYPLBIMESITTAISGLLIFALLIGNMCTYLOSLT-----TRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 457
Bra024067 : FECLW-----WGLQNLSTLGGQLETSYPLBIMESITTAIAVAGLLLEALLIGNMCTYLOSLT-----TRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 448
BoCNGC6 : FECLW-----WGLQNLSTLGGQLETSYPLBIMESITTAIAVAGLLLEALLIGNMCTYLOSLT-----TRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 474
Bra039221 : FECLW-----WGLQNLSTLGGQLETSYPLBIMESITTAIAVAGLLLEALLIGNMCTYLOSLT-----TRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 459
BoCNGC4 : FECLW-----WGLQNLSTLGGQLETSYPLBIMESITTAIAVAGLLLEALLIGNMCTYLOSLT-----TRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 459
Bra032132 : FECLW-----WGLQNLSTLGGQLETSYPLBIMESITTAIAVAGLLLEALLIGNMCTYLOSLT-----TRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 469
BoCNGC5 : FECLW-----WGLQNLSTLGGQLETSYPLBIMESITTAIAVAGLLLEALLIGNMCTYLOSLT-----TRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 469
Bra026086 : CYCLW-----WGLQNLSTLGGQLETSYPLBIMESITTAIAVAGLLLEALLIGNMCTYLOSLT-----VRLEEMRIKRRDAPQCWM SHRMLHEDLKRKRR : 428
BoCNGC8 : CYCLW-----WGLQNLSTLGGQLETSYPLBIMESITTAIAVAGLLLEALLIGNMCTYLOSLT-----VRLEEMRIKRRDAPQCWM SHRMLHEDLKRKRR : 457
Bra008733 : LKCLW-----WGLRNLSSYGQNLITTSVYLGSTLECHITTCIFGLLIFALLIGNMCTYLOSTT-----VRVEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 405
BoCNGC13 : -----SYGQNLITTSVYLGSTLECHITTCIFGLLIFALLIGNMCTYLOSTT-----VRVEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 392
Bra018089 : FICFW-----WGLRNLSSYGQSLAASITLSSITLSECFICVAGLVFESHIGNVQKYLQSTT-----ARLDQWRVRRDIDQWMSHRMLHEDLKRKRR : 414
BoCNGC14 : FICFW-----WGLRNLSSYGQSLAASITLSSITLSECFICVAGLVFESHIGNVQKYLQSTT-----ARLDQWRVRRDIDQWMSHRMLHEDLKRKRR : 414
Bra011186 : FICFW-----WGLQQLSSYGQNLITTSVYLGSTLECHITTCIFGLLIFALLIGNMCTYLOSLT-----VRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 441
BoCNGC10 : FICFW-----WGLQQLSSYGQNLITTSVYLGSTLECHITTCIFGLLIFALLIGNMCTYLOSLT-----VRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 441
Bra007839 : LKCLW-----FGLQQLSSYGQNLITTSVYLGSTLECHITTCIFGLLIFALLIGNMCTYLOSLT-----VRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 442
BoCNGC12 : LKCLW-----FGLQQLSSYGQNLITTSVYLGSTLECHITTCIFGLLIFALLIGNMCTYLOSLT-----VRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 442
Bra032081 : LKCLW-----FGLQQLSSYGQNLITTSVYLGSTLECHITTCIFGLLIFALLIGNMCTYLOSLT-----VRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 438
BoCNGC11 : LKCLW-----FGLQQLSSYGQNLITTSVYLGSTLECHITTCIFGLLIFALLIGNMCTYLOSLT-----VRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 438
Bra011963 : FICFW-----WGLRNLSSLGQNLKTSYVGEIIGAVVWATLGLVLFALLIGNMCTYLOSTT-----MRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 434
BoCNGC9 : FICFW-----WGLRNLSSLGQNLKTSYVGEIIGAVVWATLGLVLFALLIGNMCTYLOSTT-----MRLEEMRVKRRDAPQCWM SHRMLHEDLKRKRR : 434
Bra021266 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 546
BoCNGC21 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 545
BoCNGC20 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 539
BoCNGC22 : ILSLL-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 522
Bra031529 : KIHLSFLGFSANLIRMFYGFDIRKSALVIGCGSLTLAYCQLSIVYISPKQISTLAGNQPVSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 592
Bra001676 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 508
BoCNGC18 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 502
Bra001678 : IYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 483
BoCNGC19 : IYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 386
Bra021265 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 529
BoCNGC24 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 529
Bra022232 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 542
BoCNGC25 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 545
Bra022233 : SESEF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 535
BoCNGC26 : SESEF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 531
Bra029958 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 448
BoCNGC23 : SYSLF-----WGFQCI STLGNQVPSYFLGQVFTMGITGLGLLLEALLIGNMCTYLOSLT-----DRNLEMTLRRRDAPQCWM SHRMLHEDLKRKRR : 569
Bra022702 : LKPIF-----WGLMTLSTFGN-LESITTEWSVVENIIVLTSGLLLVIMLIGNIKVFIHATT-----SKQAMHLRMRNIDQWMSHRMLHEDLKRKRR : 453
BoCNGC15 : LKPIF-----WGLMTLSTFGN-LESITTEWSVVENIIVLTSGLLLVIMLIGNIKVFIHATT-----SKQAMHLRMRNIDQWMSHRMLHEDLKRKRR : 453
Bra003001 : LKPIF-----WGLMTLSTFGN-LESITTEWSVVENIIVLTSGLLLVIMLIGNIKVFIHATT-----SKQAMHLRMRNIDQWMSHRMLHEDLKRKRR : 456
BoCNGC16 : LKPIF-----WGLMTLSTFGN-LESITTEWSVVENIIVLTSGLLLVIMLIGNIKVFIHATT-----SKQAMHLRMRNIDQWMSHRMLHEDLKRKRR : 456
Bra008699 : LKPIF-----WGLMTLSTFGN-LESITTEWSVVENIIVLTSGLLLVIMLIGNIKVFIHATT-----SKQAMHLRMRNIDQWMSHRMLHEDLKRKRR : 481
BoCNGC17 : LKPIF-----WGLMTLSTFGN-LESITTEWSVVENIIVLTSGLLLVIMLIGNIKVFIHATT-----SKQAMHLRMRNIDQWMSHRMLHEDLKRKRR : 480

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g s e f g lf lign q l e r e w m h lp r6



Bra004537 : EYEQYKQETRGVDEEALLSLEKDLRLEIKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LEAGDFCGDILLTVALDP-----NTS-HLHISTSTVQA : 567  
 BoCNGC2 : KYEQYKQETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LGVGQFCGDILLTVALDP-----NTS-HFPISTSTVQA : 567  
 Bra004281 : RYENYKRRKTRGIEEBALLHSLEKDLRLETKRHLYLITLINSVFWLNMDSWLEALCDRVKSVFNSANSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----HSSSSLFSTSTVQA : 522  
 BoCNGC3 : RYENYKRRKTRGIEEBALLHSLEKDLRLETKRHLYLITLINSVFWLNMDSWLEALCDRVKSVFNSANSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----HSSSSLFSTSTVQA : 522  
 Bra003323 : ----EYKNSSTERRAHLRSLKDLRVEAKNLYLYSIENVFWLNSFIIDWLLNBYVDRVQVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----HTSPSLFSTSTVQA : 559  
 Bra0031515 : KSEDHWRQETRGVDEEALLSLEKDLRLEIKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----PHSSVPISSMIIKA : 419  
 Bra000937 : RYEQYKQETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----QSSSHFFISSTVQA : 575  
 BoCNGC1 : RYEQYKQETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----QSSSHFFISSTVQA : 576  
 Bra022632 : RYEQYKQETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----HTSNLPISTSTVQA : 604  
 Bra003081 : RYEQYKQETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----HTSNLPISTSTVQA : 609  
 Bra020402 : RYDQYKLETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSGVNLPSSTSTVKA : 624  
 BoCNGC7 : RYDQYKLETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSGVNLPSSTSTVKA : 596  
 Bra024067 : RYDQYKLETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSGVNLPSSTSTVKA : 587  
 BoCNGC6 : RYDQYKLETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSGVNLPSSTSTVKA : 613  
 Bra0039221 : RYDQYKLETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSGVNLPSSTSTVKA : 598  
 BoCNGC4 : RYDQYKLETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSGVNLPSSTSTVKA : 598  
 Bra0032132 : RYDQYKLETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSGVNLPSSTSTVKA : 608  
 BoCNGC5 : RYDQYKLETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSGVNLPSSTSTVKA : 608  
 Bra026086 : RYDQYKLETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KAGSNLPSSTSTVKA : 567  
 BoCNGC8 : RYDQYKLETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KAGSNLPSSTSTVKA : 596  
 Bra008733 : RFVQYKALATRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----NSTLNFPSSTSTVKA : 544  
 BoCNGC13 : RFVQYKALATRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----NSTLNFPSSTSTVKA : 531  
 Bra018089 : RFVQYKALATRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----NINQNLPLSTSTVKA : 553  
 BoCNGC14 : RFVQYKALATRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----NINQNLPLSTSTVKA : 553  
 Bra011186 : RYEQYKQETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSTLNLPSSTSTVKA : 580  
 BoCNGC10 : RYEQYKQETRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSTLNLPSSTSTVKA : 580  
 Bra007839 : RFVQYKALATRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSKVNLPSSTSTVKA : 581  
 BoCNGC12 : RFVQYKALATRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSKVNLPSSTSTVKA : 581  
 Bra0032081 : RFVQYKALATRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSKVNLPSSTSTVKA : 577  
 BoCNGC11 : RFVQYKALATRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----KSKVNLPSSTSTVKA : 577  
 Bra011963 : KYDQYKALATRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----RPVVLPSTSTVKA : 573  
 BoCNGC9 : KYDQYKALATRGVDEEALLSLEKDLRDKRHLCLNLLKVVPLFESMD-D-RLDDAICARLNTVLYTENSYIVREGDFVDEMLFIMRGKLTSTTTYGGQGFNFNIAH-LQAGDIDCGDILLFVLDLDP-----RPVVLPSTSTVKA : 573  
 Bra021266 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 688  
 BoCNGC21 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 687  
 BoCNGC20 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----YVLPISSEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 681  
 BoCNGC22 : LAEWNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----YVLPISSEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 664  
 Bra0031529 : EVERLNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 734  
 Bra001676 : EVERLNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----YRILPISSEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 650  
 BoCNGC18 : EVERLNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----YRILPISSEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 644  
 Bra001678 : NAERLNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SCTRIKRDVYCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 624  
 BoCNGC19 : DAERLNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----YRILPISSEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 528  
 Bra0021265 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 671  
 BoCNGC24 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 671  
 Bra022232 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 684  
 BoCNGC25 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 687  
 Bra022233 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 677  
 BoCNGC26 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 673  
 Bra029958 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 587  
 BoCNGC23 : EAERFNAAATRGVNEEALLFENMEDDLCQDIRRHLFI-FLKKVRIHSLMDE-SILDAIRERLRKQRTIIRSSMVLHRRGIVKRMVFIIVRGEMBSIGEDG-----SVLPISEGIVCGEBELLTWCERSVNPDGTRIRIPSKGLLSAVNVC : 708  
 Bra022702 : NYERQRFAAMRGVDECEMVQNLLEGIRDKYHLCLDLVRCVPLFQHMED-LVLENICDRVSLIETKGETIQKEGDVQRMLFVVRGHLQSSQLLR--DGVKSCCMGPFNFSGEDLLSWCIRR-----PFVERLPFSSSTLVT : 590  
 BoCNGC15 : NYERQRFAAMRGVDECEMVQNLLEGIRDKYHLCLDLVRCVPLFQHMED-LVLENICDRVSLIETKGETIQKEGDVQRMLFVVRGHLQSSQLLR--DGVKSCCMGPFNFSGEDLLSWCIRR-----PFVERLPFSSSTLVT : 590  
 Bra003001 : NYERQRFAAMRGVDECEMVQNLLEGIRDKYHLCLDLVRCVPLFQHMED-LVLENICDRVSLIETKGETIQKEGDVQRMLFVVRGHLQSSQLLR--DGVKSCCMGPFNFSGEDLLSWCIRR-----PFVERLPFSSSTLVT : 593  
 BoCNGC16 : NYERQRFAAMRGVDECEMVQNLLEGIRDKYHLCLDLVRCVPLFQHMED-LVLENICDRVSLIETKGETIQKEGDVQRMLFVVRGHLQSSQLLR--DGVKSCCMGPFNFSGEDLLSWCIRR-----PFVERLPFSSSTLVT : 593  
 Bra008699 : RFERQRWALGEGDEBLELQDLPEGLRDKYHLCLDLVRCVPLFQHMED-LVLENICDRVSLIETKGETIQKEGDVQRMLFVVRGHLQSSQLLR--KGVVATSTIEPEGYLEDLLSWCIRR-----PFIDRLPFSSATFVC : 618  
 BoCNGC17 : RFERQRWALGEGDEBLELQDLPEGLRDKYHLCLDLVRCVPLFQHMED-LVLENICDRVSLIETKGETIQKEGDVQRMLFVVRGHLQSSQLLR--KGVVATSTIEPEGYLEDLLSWCIRR-----PFIDRLPFSSATFVC : 617

W t g ee 6p 6 di rh 6 6 f 6d 66 6 g 6 66f6 G g g g eLL W 1 S r



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Bra004537 : ETEVEGVLADDLKVFSTQRRRLHSKQLRHTC----YVQVQTWAAFCFCAAWKRYCRKLSRLVREEE-----ERLQNTLQTTDDSGGNKLNLGAAIYASRFASHALRNVRANAARS----SMLP : 682
BoCNGC2 : QTEVEGVLADDLKVFATQRRINSKQLRHMFR----YHVVQWRTWAAFCFCAAWKRYCRKLSRLALREEE-----ERLENTLQT--DDSGGNKLNLGAAIYASRFASHALRNVRANAARN----SMLP : 683
Bra034281 : LTDVEGVLADDLKVFASCHRRFHSRLRHMF----YSAHWRLWAAFCFCAAWREHYKRLSRLHAKR-----DYNH--IPQG-----TQLNLGAALYVSRFVSKALRNQRKNAANC----SISP : 629
BoCNGC3 : LTDVEGVLADDLKVFASCHRRFHSRLRHMF----FYSAHWRLWAAFCFCAAWREHCKRKLRSRLHAKR-----DYNH--IPQG-----PQLNLGAALYVSRFVSKALRNQRKNAANC----SISP : 631
Bra003323 : LTYVEGLTISADDLKCHS-----KSWRSWAAFYFCAAWGAHCRKASKKILPAIK-----DEQQ--ILQD-----TQRNLGATLYASRFVSKALRNHRVDSAECC----SSFP : 649
Bra003151 : RTEVEGVLADDLKVFAAQCRRLHRKKARHISRQEFQLHCRKWRNAAFCFCAAWTEYCRKLSKDLGEEE-----AKLHSTIQKDDSDAG--NTHNLGGTAFASRLASTVLRNLRVNASRK----DRVR : 538
Bra000937 : LTEVEAFLAEEELKVFASQRRRLHSKQLQHTFR---FYVQVQWRTWAAFCFCAAWRHCRERLARSLETEE-----DHFRIAVAKRERRAASSPSLVATLYASRFASNALRNLRQHNNNTL----PLLP : 692
BoCNGC1 : LTEVEAFLAEEELKVFASQRRRLHSKQLQHTFR---FYVQVQWRTWAAFCFCAAWRHCRERLARSLETEE-----DQFRIAVAKRERRAASSPSLVATLYASRFASNALRNLRQHNN--TL----PLLP : 691
Bra022632 : LVEVEAFLKADDLKVFASQRRRLHSKQLRHTFR---FYVQVQWRTWAAFCFCAAWRHVVKRMEESLKEEE-----NRLQDALAKEACG--SSPSLGATMYASRFAANILRTIRRSVGSVRK----PRMP : 719
Bra003081 : LVEVEAFLKADDLKVFASQRRRLHSKQLRHTFR---FYVQVQWRTWAAFCFCAAWRHVVKRMEESLKEEE-----NRLQDALAKEACG--SSPSFGATMYASRFAANILRTIRRSVGSVRK----PRML : 724
Bra020402 : LTEVEAFLAEEELKVFASQRRRLHSRQVQHTFR---FYSHQWRTWAAFCFCAAWRYCKRKKMEEAEAEA-----VPMST-----TGSSSMGAAFLVTKFAASALRTIHRNRNTR----- : 728
BoCNGC7 : LTEVEAFLAEEELKVFASQRRRLHSRQVQHTFR---FYSHQWRTWAAFCFCAAWRYCKRKKMEEAEAEA-----VPMST-----TGSSSMGAAFLVTKFAASALRTIHRNRNTR----- : 700
Bra024067 : LTEVEAFLIADDELKVFASQRRRLHSRQVQHTFR---FYVQVQWRTWAAFCFCAAWRYVVKRKKLEQLKKEE-----EEE-----GEGHVASIRATFLASKFAANALRKVHQNRIA-----A : 690
BoCNGC6 : LTEVEAFLIADDELKVFASQRRRLHSRQVQHTFR---FYVQVQWRTWAAFCFCAAWRYVVKRKKLEQLKKEE-----EEEE-----EGEGPVASIRATFLASKFAANALRKVHQNRIA-----A : 719
Bra039221 : LTEVEAFLIADDELKVFASQRRRLHSRQVQHTFR---FYVQVQWRTWAAFCFCAAWRYTKRKKLEELRKEE-----EMEESSSTARLIAGSSPFSIRATFLASRFAANALRGVRKNRTAKL----LALS : 716
BoCNGC4 : LTEVEAFLIADDELKVFASQRRRLHSRQVQHTFR---FYVQVQWRTWAAFCFCAAWRYTKRKKLEELRKEE-----EMEESSAARLIAGSSPFSIRATFLASRFAANALRGVRKNRTAKL----LALS : 716
Bra032132 : LTEVEAFLIADDELKVFASQRRRLHSRQVQHTFR---FYVQVQWRTWAAFCFCAAWRYTKRKKLEQLRKEE-----EEEEESAARLIAGGS--PYSIRATFLASKFAANALRSVHKNRIRKS----NLAP : 725
BoCNGC5 : LTEVEAFLIADDELKVFASQRRRLHSRQVQHTFR---FYVQVQWRTWAAFCFCAAWRYTKRKKLEQLRKEE-----EEEE--TAARLIAGGS--PYSIRATFLASKFAANALRSVHKNRIRKS----NLAP : 724
Bra026086 : LTEVEAFLAEEELKVFASQRRRLHSRQVQHTFR---FYVQVQWRTWAAFCFCAAWRHCRERLARSLETEE-----DDAEEEDERTPVFTRTESSRLRSTIFASRFAANALRGHRLRSTE----- : 693
BoCNGC8 : LTEVEAFLAEEELKVFASQRRRLHSRQVQHTFR---FYVQVQWRTWAAFCFCAAWRHCRERLARSLETEE-----DDAEEEDERTPVFTRTESSRLRSTIFASRFAANALRGHRLRSTE----- : 722
Bra008733 : LSEVEAFLSADDLKVFACHQKRLQSKKLQHAFR---YVSHQWRTWAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 690
BoCNGC13 : LSEVEAFLSADDLKVFACHQKRLQSKKLQHAFR---YVSHQWRTWAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 677
Bra018089 : LSEVEAFLRADDLKVFANQRRRLHSKKLQHAFR---YVSHQWRTWAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 688
BoCNGC14 : LSEVEAFLRADDLKVFANQRRRLHSKKLQHAFR---YVSHQWRTWAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 688
Bra011186 : LVEVEAFLRADDLKVFANQRRRLHSKKLQHTFR---FYVPHQWRTWAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 705
BoCNGC10 : LVEVEAFLRADDLKVFANQRRRLHSKKLQHTFR---FYVPHQWRTWAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 704
Bra007839 : LEEVEAFLQADDLKVFANQRRRLHSKKLQHTFR---YVSHQWRTWAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 711
BoCNGC12 : LEEVEAFLQADDLKVFANQRRRLHSKKLQHTFR---YVSHQWRTWAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 711
Bra032081 : LEEVEAFLQADDLKVFANQRRRLHSKKLQHTFR---YVSHQWRTWAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 706
BoCNGC11 : LEEVEAFLQADDLKVFANQRRRLHSKKLQHTFR---YVSHQWRTWAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 706
Bra011963 : IYEVEAFLRADDLKVFATQRRRLHSKQLKHKFR---FYVSHQWRTWAAFCFCAAWRHCKRKYATELRVKEEFQCMFETAS-----MVRLNSGKFTR-----SG : 664
BoCNGC9 : IYEVEAFLRADDLKVFATQRRRLHSKQLKHKFR---FYVSHQWRTWAAFCFCAAWRHCKRKYATELRVKEEFQCMFETAS-----MVRLNSGKFTR-----SG : 664
Bra021266 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 760
BoCNGC21 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 759
BoCNGC20 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 753
BoCNGC22 : VTDVEAFLSADDLKVFATQRRFLRNRVQGAII---R--SPHWRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 734
Bra0031529 : VTNVDAEFLSADDLKVFATQRRFLRNRVQGAII---R--SPHWRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 758
Bra001676 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---R--SPHWRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 680
BoCNGC18 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---R--SPHWRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 674
Bra001678 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---R--SPHWRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 654
BoCNGC19 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---R--SPHWRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 558
Bra021265 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 743
BoCNGC24 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 743
Bra022232 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 786
BoCNGC25 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 781
Bra022233 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 748
BoCNGC26 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 744
Bra029958 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 670
BoCNGC23 : VTNVEAFLSADDLKVFATQRRFLRNRVQGAII---RYEFPYWRRLRAAFCFCAAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 789
Bra022702 : LETTEAFLDADLVKVTQCHERYTFVNEKVKRSAR---YVSGWRTWAAVAVQLAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 684
BoCNGC15 : LETTEAFLDADLVKVTQCHERYTFVNEKVKRSAR---YVSGWRTWAAVAVQLAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 684
Bra003001 : LETTEAFLDADLVKVTQCHERYTFVNEKVKRSAR---YVSGWRTWAAVAVQLAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 687
BoCNGC16 : LETTEAFLDADLVKVTQCHERYTFVNEKVKRSAR---YVSGWRTWAAVAVQLAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 687
Bra008699 : LDNTEAFLGSDDLRYTDFERYKFANERLKRTR---YVSNWRTWAAVAVQLAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 711
BoCNGC17 : LDNTEAFLGSDDLRYTDFERYKFANERLKRTR---YVSNWRTWAAVAVQLAWRYCKRKLAKELSLHSSGGYRDETGYNEEGDEENYGSDDDDFEGERLSVDNTNNSQNLGATMLASKFAANTRRGTNQKASSSTAGKKGDS : 708

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	1060	*	1080	
Bra004537	: HMLSLL--PQKPADPEFPMDET-----			: 702
BoCNGC2	: HMLSLL--PQKPADPEFPMDET-----			: 703
Bra034281	: HMLPPI--PHKPADPEFSKN-----			: 647
BoCNGC3	: HMLPPI--PHKPADPEFSKN-----			: 649
Bra003323	: EMLP----DKPADPEFSKKEA-----			: 666
Bra031515	: QISLP----EKFVDPKFPMDI-----			: 556
Bra000937	: -----PKFSEPDFSVDDD-----			: 705
BoCNGC1	: -----PKFSEPDFGVDDD-----			: 704
Bra022632	: ERM----LLQKPAEPDFNSDDYCI-----			: 739
Bra003081	: ERMPPMLLQKPAEPDFNSDDYMRIVPIYKNRSL			: 758
Bra020402	: --IRELVKIQKPEPDFTAEDAD-----			: 749
BoCNGC7	: --IRELVKIQKPEPDFTAEDAD-----			: 721
Bra024067	: KSTKELVIFQKPEPDFSADDP-----			: 712
BoCNGC6	: KSTKELVIFQKPEPDFSADDP-----			: 741
Bra039221	: QPTKELLKVQKPEPDFSADC-----			: 737
BoCNGC4	: QPTKELLKVQKPEPDFSADC-----			: 737
Bra032132	: PSTKELVKFQKPEPDFSADC-----			: 746
BoCNGC5	: PSTKELVKFQKPEPDFSADC-----			: 745
Bra026086	: -SSKRLNLQKPEPDFDAE-----			: 712
BoCNGC8	: -SSKRLNLQKPEPDFDAE-----			: 741
Bra008733	: SNSLKMPQLFKPEPDFSMDKEDV-----			: 714
BoCNGC13	: SNSLKMPQLFKPEPDFSMDKEDV-----			: 701
Bra018089	: DPTLKMPKMFKEEDPGFF-----			: 706
BoCNGC14	: DPTLKMPKMFKEEDPGFF-----			: 706
Bra011186	: VKDVEMPRFKKEEPEPDSAEFDD-----			: 728
BoCNGC10	: VKDVEMPRFKKEEPEPDSAEFDD-----			: 727
Bra007839	: MKDVDVEMLPKKEEPEPDSVDAD-----			: 733
BoCNGC12	: IKDVDVEMLPKKEEPEPDSVDAD-----			: 733
Bra032081	: LKDVEVEMLPKKEEPEPDSVDGD-----			: 728
BoCNGC11	: LKDVEVEMLPKKEEPEPDSVDGD-----			: 728
Bra011963	: SDSGMVSSIQKFEVPEPDSSE-----			: 684
BoCNGC9	: SDSGMVSSIQKFEVPEPDSSE-----			: 684
Bra021266	: -----			: -
BoCNGC21	: -----			: -
BoCNGC20	: -----			: -
BoCNGC22	: -----			: -
Bra031529	: -----			: -
Bra001676	: -----			: -
BoCNGC18	: -----			: -
Bra001678	: -----			: -
BoCNGC19	: -----			: -
Bra021265	: -----			: -
BoCNGC24	: -----			: -
Bra022232	: -----			: -
BoCNGC25	: -----			: -
Bra022233	: -----			: -
BoCNGC26	: -----			: -
Bra029958	: -----			: -
BoCNGC23	: -----			: -
Bra022702	: -----PKENPDDFDDY-----			: 695
BoCNGC15	: -----PKENPDDFDDY-----			: 695
Bra003001	: -----PKENPDDFDDY-----			: 698
BoCNGC16	: -----PKENPDDFDDY-----			: 698
Bra008699	: -----IREH-DHLE-----			: 719
BoCNGC17	: -----IREH-DHLE-----			: 716