

Supplementary Fig 2. Mammal Alignment of BRCA1

| | 282 | 331 |
|------------------------|--|-----|
| HPG | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQHNRWAGSKETCNDR | |
| Great_Apes | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQHNRWAGSKETCNDR | |
| OWMonkeys | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQHNRWAGSKETCNDR | |
| Monkeys | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQHNRWAGSKETCNDR | |
| Primates | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| '+Tupaia' | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Tamadua_Bradypus | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Armadillos | LLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARRQQSRWAESKETCNDR | |
| EuarchLauraXen | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Elephants | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Hyraxes | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESTETCNDR | |
| Sirenia | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| TE_Amblysomus | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Macroscelidae | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Orycteropus_TEAM | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| '+Cynocephalus' | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Myotis_Tadarida | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Taphozous_Tonatia | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Pteropus_Cynopterus | SLQHENSLLLLTKDRMNVEKTDFCNKSQKQPLARSQQNRWVETKETCNDR | |
| Megaderma_Hipposideros | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Manis_C | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Carnivores | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Cetacea | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLAKSQQSRWAESKDTCNDR | |
| BHC | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLAKSQQSRWAESKDTCNDR | |
| Sus_BHC | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLAKSQQSRWAESKDTCNDR | |
| Perissodactyla | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLAKSQQSRWAESKETCNDR | |
| Insectivores | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Glires | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Sciurus_Glaucomys | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAKSKETCNDR | |
| Aplodontia_SG | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAKSKETCNDR | |
| ASG_Graphiurus | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Hystrix_OMMR | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Pedetes_OMMR | SLQHENSLLLLTKDRMNVEKAIEFCNKSQKQPLARSQQSRWAESKETCNDR | |
| Mus_Rattus | SLQHETSLLLLTEDRMNAEKAIEFCNKSQKQSGVAVSQSRWAESKETCNDR | |
| Meriones_MR | SLQHENSLLLLTEDRMNVEKAIEFCNKSQKQSGLARSQQSRWAESKETCNDR | |
| Oryzomys_MMR | SLQHENSLLLLTEDRMNVEKAIEFCNKSQKQSGLARSQQSRWAESKETCNDR | |
| Tenrec_Echinops | SLQRENCSSLLLTkdRlNVEKAIEFCNKSQKQPLARSQHSRWAEKTCNDK | |
| Wombat | SLLPKTSSLLPNTDRMNVEKAELCHKNKQPALGRNQESSLDESKEICSPG | |
| Phascogale | SLLPETSSLLPNTDRMS-EKAELSNKSKQSGLARNQQSRLDESKEICSTG | |
| Echymipera | SLLMETSSLLSNIDRMTTKAELCNKSKDPGLARNQQDCLGESKEISSV | |
| Shrew_Opossum | SLLPEITSSLLPNTDRMNVEKAELCNKSKQPLASNQQSNLDESKEICSAS | |
| Red_Kangaroo | SLLPETTSSLPNTDRMNVEKAELCNKSKQPLAKNQSSLDESKEICSAG | |
| Wallaroo | SLLPETTSSLPNTDRMNVEKAELCNKSKQPLAKNQSSLDESKEICSAG | |
| Tree_Kangaroo | SLLPETTSSLPNTFQMNVEKAELCNKSKQPLAKNQSSLDESKEICSAG | |
| Possum | SLLPDITSSVLPNTDSMNVEKAELCDKSKRPDLAWSQQISQDESKEKCIAG | |
| | 332 | 379 |
| HPG | RTPSTEKKVDLNADPLCERKEWNKQKLPCESENPRDTE--VPWITLNSSI | |
| Great_Apes | QTPSTEKKVDLNADPLCERKEWNKQKLPCESENPRDTE--VPWITLNSSI | |
| OWMonkeys | QTPSTEKKVDLNADPLYERKEWNKQKLPCESENPRDTE--VPWITLNSSI | |
| Monkeys | QTPSTEKKVDLNADPLYGRKEWNKQKPPCESENPRDTE--VPWITLNSSI | |
| Primates | QTPSTEKKVDLNADPLYGRKERNKQKPPCESENPRDTE--VPWITLNSSI | |
| '+Tupaia' | QTPSTEKKVDLNADPLYGRKERNKQKPPCESPRDTE--VPWITLNSSI | |
| Tamadua_Bradypus | QTPSTEKKVDVDADPLYGRKELNKQKPPCESPRDTE--IPWITLNSSI | |
| Armadillos | QTPSTEKKVDVDADPLYGRKELNKQKPPCESPRDTE--IPWITLNSSI | |
| EuarchLauraXen | QTPSTEKKVDLNADPLYGRKELNKQKPPCESPRDTE--IPWITLNSSI | |

| | |
|------------------------|--|
| Elephants | QTPSTEKKVDVNADPLYERKEVKNKQKPPRSENLRDTQD--IPWITLNSSI |
| Hyraxes | QILRTEKKVDTNADPLYGKKEGNKQKPPCSESRTDTQD--IPWITLNSSI |
| Sirenia | QTPSTEKKVDMNANPLYERKEVKNKQKPPCSESVRDTQD--IPWITLNSSI |
| TE_Amblysomus | QTPSTEKKVDMNADPLYGRKEVKNKQKPPCSESPRDTQD--IPWITLNSSI |
| Macroscelidae | QTPSTEKKVDMNADPFYGRKEVKNKQKSPCSES PKDTQD--IPWITLNSSI |
| Orycteropus_TEAM | QTPSTEKKVDMNADPLYGRKEVKNKQKPPCSESPRDTQD--IPWITLNSSI |
| '+Cynocephalus' | QTPSTEKKVDLNADPLYGRKERNKQKPPCSESPRDTQD--VPWITLNSSI |
| Myotis_Tadarida | QTPSTEKRVLNADPLNGRKE-----PPCSDYPRDSQD--VPWITRNSSI |
| Taphozous_Tonatia | QTPSTEKRVLNADPLNGRKE-----PPCSDCPRDSQD--VPWITRNSSI |
| Pteropus_Cynopterus | QTSSTEKKVVLNADPLNGRIELNKQKPPCSDSPRDSQD--IPWITRNSSI |
| Megaderma_Hipposideros | QTPSTEKKVVLNADPLNGRKELNKQKPPCSDSPRDSQD--VPWITRNSSI |
| Manis_C | QTPSTEKKVVLNADPLCGRKELNKQKPPCSDSPRDSQD--VPWITLNSSI |
| Carnivores | QTPSTEKKVVLNADPLCGRKELNKQKPPCSDSPRDSQD--VPWITLNSSI |
| Cetacea | QTPSTEKKVVLNADPLYGRKELNKQKPACSDSPRDSQE--FPWITVNSSI |
| BHC | QTPSTEKKVVLNADPLYGRKELNKQKPACSDSPRDSQD--VPWITLNSSI |
| Sus_BHC | QTPSTEKKVVLNADPLYGRKELNKQKPACSDSPRDSQD--VPWITLNSSI |
| Perissodactyla | QTPNSEKKLVNADPLYGRKELNKQKPPCSDSPRDSQD--VPWITLNSSI |
| Insectivores | QTPSPEKKVDLNADPLYGRKELNKQKPPCSDSPRDSQD--VPWITLNSSI |
| Glires | QTPSTEKKVDLNADPLYGRKERNKQKPPCSENPRDTQD--VPWITLNSSI |
| Sciurus_Glaucomys | QTPSTEKKVDLNADPQYERKEPSKQKPPCSENSRDTQD--VPWITLNSSI |
| Aplodontia_SG | QTPSTEKKVDLNADPLYERKEPSKQKPPCSENPRDTQD--VPWITLNSSI |
| ASG_Graphiurus | QTPSTEKKVDLNADPLYGRKERNKQKPPCSENPRDTQD--VPWITLNSSI |
| Hystrix_OMMR | QTPSTEKKVDLNADPLYGRKERNKQKPPCSENPRDTQD--VPWITLNSSI |
| Pedetes_OMMR | QTPSTEKKVDLNADPLYGRKERNKQKPPCSENPRDTQD--VPWITLNSSI |
| Mus_Rattus | QVPSTEKKVDPNADSLCGRKKWNHPKSLCPENSGATTD--VPWITLNSSI |
| Meriones_MR | QIPSTEKKVDPNADSLCGRKKWNNQKSLCPENSGATQD--VPWITLNSSI |
| Oryzomys_MMR | QIPSTEKKVDLNADSLCGRKKWNNQKSLCPENSRATQD--VPWITLNSSI |
| Tenrec_Echinops | PTPSTEKKVDMNADPVHGRKGVPKQKPPCHESPRKSHD--VPWITRNSSI |
| Wombat | KTPGACERHELNDHHLCEKQGLE-EKPQHPESPRGNPQNCLSGTKLKSSI |
| Phascogale | KTPSVGEQPELNAHHLCEKQGLE-EKPQHPESPRGNPQNCLSGTKLKSSI |
| Echymipera | KTPAAGEQHKLNAHHLCEKQGLE-VKSQHPESPKGSPPRCRSGTKLKSSI |
| Shrew_Opossum | KTPGAEQPELNAHHLCEKQGLE-EKLQCPESPRGDSGDCLSGTKVKNSSI |
| Red_Kangaroo | KTLGA---HELNAHHP CERKELE-DEPQHPESPRGNPQNCQSGTKLKSSI |
| Walleroo | KTLGA---HELNAHHP CERKELE-DEPQHPESPRGNPQNCQSGTKLKSSI |
| Tree_Kangaroo | KTLGA---HELNAHHP CERKELE-DEPQHPESPRGNPQNCQSGTKLKSSI |
| Possum | KTSDAKELHELNAHHL YERQELE-EQPECPNYPRGNSQNCLSGTKLK-SI |
| | 380 |
| HPG | QKVNEWFSRSDELLGSDDSHDGGSESNAKVADVLDV--LNEVDEYSGSSE |
| Great_Apes | QKVNEWFSRSDELLGSDDSHDGGSESNAKVADVLDV--LNEVDEYSGSSE |
| OWMonkeys | QKVNEWFSRSDELLSDDSHDGGSESNAKVADVLDV--LNEVDEYSGSSE |
| Monkeys | QKVNEWFSRSDELLTSDDSHDGGSESNAKVADALEV--LNEVDGYSGSSE |
| Primates | QKVNEWFSRSDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE |
| '+Tupaia' | QKVNEWFSRSDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE |
| Tamadua_Bradypus | QKVNEWFSRSDDILTSDDSHNGGSESNAEVAGALKV--PNEVDGYSGSSE |
| Armadillos | QKVNEWFSRSDDILTSDDSHDGGSESNAEVAGALKV--PNEVDGYSSSSE |
| EuarchLauraXen | QKVNEWFSRSDDMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE |
| Elephants | QKVNEWFFRS DGL---DVLNDEGPES SAEVAGALEV--PNEVH--SNSSE |
| Hyraxes | QKVNEWFFRS DNL---SDSPSEGSELNGKVAGPVKL--PGEVHRYSSFPE |
| Sirenia | QKVNEWFFRS DGL---DDLHDKGSESNAEVAGALEV--PEEVHGYSSSSE |
| TE_Amblysomus | QKVNEWFFRS DGL---DDSHDEGSESNAEVAGAFEV--PNEVHGYSSSSE |
| Macroscelidae | QKVNEWFFRS DGL---DDSHDEGSESNAAIAGALEV--PNEVHGYSSSSE |
| Orycteropus_TEAM | QKVNEWFFRS DGL---DDSHDEGSESNAEVAGALEV--PNEVHGYSSSSE |
| '+Cynocephalus' | QKVNEWFFRSDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE |
| Myotis_Tadarida | QKVNEWFFSRDEILTS DGSHNGRSESNAEVAGAVEV--PNEVDGYSGSPE |
| Taphozous_Tonatia | QKVNEWFFSRDEILTS DGSHDGRSESNT EVAGAVEV--PNEVDGYSGSPE |
| Pteropus_Cynopterus | QKVNEWFFSRDEILTS DVSPDGRSES N-----VVEV--PNEVDGYSGASE |
| Megaderma_Hipposideros | QKVNEWFFSRDEILTS HGSHDGRAESNT EVAGAVEV--PNEVDGYSGSSE |

| | |
|------------------------|---|
| Manis_C | QKVNEWFSRSDDEMLTSDDSHDGGSESNTTEVAGAVEV--PNEVDGYSGSSE |
| Carnivores | QKVNEWFSRSDDEMLTSDDSHDGGSESNTTEVAGAVEV--PNEVDGYSGSSE |
| Cetacea | QKVNEWFSRSDDEMLTSNDSRDGGFESNTTEVACAVEV--PKEVDGYLGSSE |
| BHC | QKVNEWFSRSDDEMLTSDDSRDGGSESNTTEVAGAVEV--PNEVDGYLGSSE |
| Sus_BHC | QKVNEWFSRSDDEMLTSDDSHDGGSESNTTEVAGAVEV--PNEVDGYLGSSE |
| Perissodactyla | QKVNEWFSRSDDEMLTSDDSHDGGPESENTEVAGAVEV--PNEVDGYSGSSE |
| Insectivores | QKVNEWFSRSDDEMLTSDDSHDGGSESNTTEVAGAVEV--PNAVDGFGSGSSE |
| Glires | QKVNEWFSRSDDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE |
| Sciurus_Glaucomys | RKVNEWFSRSDDEMLTSDDSDGGSESNAEVAGVLEI--PNEVDGFGSGSSE |
| Aplodontia_SG | QKVNEWFSRSDDEMLTSDDSHDGGSESNAEVAGVLEI--PNEVDGFGSGSSE |
| ASG_Graphiurus | QKVNEWFSRSDDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE |
| Hystrix_OMMR | QKVNEWFSRSDDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE |
| Pedetes_OMMR | QKVNEWFSRSDDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE |
| Mus_Rattus | QKVNEWFSRTGEMLTSDSASDRRPASNAEAAVVLEV--SNEVDGCFSSSK |
| Meriones_MR | QKVNEWFSRTGEMLTSDSASDRRPASNAEAAVALEV--SNEVDGCFSSSK |
| Oryzomys_MMR | QKVNEWFSRTGEMLTSDGASDRRPESNAEAAVALEV--SNEVDGCSSSSK |
| Tenrec_Echinops | WKVNEWFSKSDGL--GDSHDERPESDADVAGAFEV--PDEARESSSSPE |
| Wombat | QKVNEWLSRSSDILASDNSNGRSHEQSAEVPSALEDGHPDTEAGNSSVSE |
| Phascogale | QKVNEWLSRSDILASDCSLDKNHKQNAEIASALEDGHPDNDGNSIISE |
| Echymipera | QKVSEWLSRSDILNSDYSHERSQEQNAEIAIALEDGHLNTADGNSIISE |
| Shrew_Opossum | QKVNEWLFRSNDVLPDYSSVRSHEQNAEATNALEYGHVET-DGNSSIISE |
| Red_Kangaroo | QKVNEWLSRSDILTSDNSCSRNEQNVEMPSALEDGYPTADGNSIISE |
| Wallaroo | QKVNEWLSRSDILTSDNSYSRNEQNAEMPSALEDGYPTADANSIISE |
| Tree_Kangaroo | QKVNEWLSRSDILISDNSYSRNEQNAEMPSALEDGYPTADGNSIISE |
| Possum | QKVNDWLSKSNLILVSDYSSGRIHEQNAEMDSVLEDGHPDVTGNSIISG |
| | 428 |
| HPG | KIDLLAS-DPHEALICKSERVHKSVESEN-IEDKIFGKTYRRKASLPNLS |
| Great_Apes | KIDLLAS-DPHEALICKSERVHKSVESEN-IEDKIFGKTYRRKASLPNLS |
| OWMonkeys | KIDLLAS-DPHEPLICKSERVHKSVESEN-IEDKIFGKTYRRKASLPNLS |
| Monkeys | KIDLLAS-DPHDPLICKSERVHKSVESEN-IEDKIFGKTYRRKASLPNLS |
| Primates | KIDLLAS-DPHDPLICKSERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| '+Tupaia' | KIDLMS-DPHDALICKSERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| Tamadua_Bradypus | KIDLIAS-DPHNALIFASERVQSKPTESN-IEDKIFGKTYHRKASLPNLS |
| Armadillos | KIDLMS-DPHNALIFASERVQSKPAESN-IEDKIFGKTYHRKASLPNLS |
| EuarchLauraXen | KIDLMS-DPHDALICESERVHSKPAESN-IEDKIFGKTYRRKASLPNLS |
| Elephants | KIDLMS-DLHGALICESERVPSKPAESN-IEDKIFGKTYRRKAGISHLS |
| Hyraxes | NIDLMS-GPPGDLICSERIPCKPPKSN-IEDKIFGKTYQRKGLPHLS |
| Sirenia | KIDLMS-DPHSALICESERVLSKPAESN-IEDKIFGKTYRRKAILPHLS |
| TE_Amblysomus | KIDLMS-DPHDALICESERVLSKPAESN-IEDKIFGKTYRRKASLPNLS |
| Macroscelidae | KIDLMS-DPHDASICESERVLSKPAENN-IEDKIFGKTYRRKASLPNLS |
| Orycteropus_TEAM | KIDLMS-DPHDALICESERVLSKPAESN-IEDKIFGKTYRRKASLPNLS |
| '+Cynocephalus' | KIDLMS-DPHDALICKSERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| Myotis_Tadarida | KIALMAS-DPHGALICESERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| Taphozous_Tonatia | KIALMAS-DPHGALICESERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| Pteropus_Cynopterus | KIALKAS-DPHGALIC--ERVHSKLVESEN-IEDKIFGKTYRRKASLPNLS |
| Megaderma_Hipposideros | KIALMAS-DPHGALICESERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| Manis_C | KIDLMS-DPHDALICESERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| Carnivores | KIDLMS-DPHDALICESERVHTPKVESEN-IEDKIFGKTYRRKASLPNLS |
| Cetacea | KIDLMS-DPHGALIRESERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| BHC | KIDLMS-DPHGALIRESERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| Sus_BHC | KIDLMS-DPHGALIRESERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| Perissodactyla | KIDLMS-DPPGALICESERVHSKPVENN-IEDKIFGKTYRRKASLPNLS |
| Insectivores | KIDLMS-DPHGALICESERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| Glires | KIDLLAS-DPHNALICKSERVHSKPVESEN-IEDKIFGKTYRRKASLPNLS |
| Sciurus_Glaucomys | KIDLLAT-DPHNALISKCERVCSKAVESN-IEDKIFGKTYRRKASLPNLS |
| Aplodontia_SG | KIDLLAT-DPHNALISKCERVCSKAVESN-IEDKIFGKTYRRKASLPNLS |
| ASG_Graphiurus | KIDLLAS-DPHNALICKSERVCSKVESEN-IEDKIFGKTYRRKASLPNLS |

| | |
|------------------------|--|
| Hystrix_OMMR | KIDLLAS-DPHNALICKSERVCSKPVESN-IEDKIFGKTYRRKASLPNLS |
| Pedetes_OMMR | KIDLLAS-DPHNALICKSERVCSKPVESN-IEDKIFGKTYRRKASLPNLS |
| Mus_Rattus | KTDLVAP-DPHNALMCKSGRDFSKPVENN-INDKIFGKTYQRKGSRPHLN |
| Meriones_MR | KTDLVAP-DPHNALMCKSERDFSKPVENN- IKDKIFGKTYQRKGSPLPHLN |
| Oryzomys_MMR | KTDLVAT-DPHNALMCKSERDCSKPVENN- IKDKIFGKTYQRKGSPLPHLN |
| Tenrec_Echinops | KTDLMAS-DPHVPLLHKSERVLSKPVESN- IEDKIFGKTYRRKSSLLNSS |
| Wombat | KTDPVAD-STDDAWLHVPKRSLRPAENN- IEDKIFGKTYRRKSGHPNLN |
| Phascogale | KTDVVAD-TADGAWLHVPKRTYTRPAENNNIKDKIFGKTYRRKSGHPNLN |
| Echymipera | KT-LVA--TTD----VLETS-SRPAKSN- IEDKIFGKTYRRKS-HSNLN |
| Shrew_Opossum | KTDMVAD-STDGSLWHAPEKNCPRPAESNNIEDKIFGKTYRRKSVHPVLN |
| Red_Kangaroo | KTDPVAD-ITYDPWPHVPERSCPRPAENNNIEDKIFGKTYRRKSGHPHLN |
| Wallaroo | KTDPVAD-ITYDPWPHVPERSCPRPAENNNIEDKIFGKTYRRKSGHSHLN |
| Tree_Kangaroo | KTDPVADNNTYDPWPHVPERSCPRPAENNNIEDKIFGKTYRRKSGHPHLN |
| Possum | KTDLVAD-STDGAWLHMSERSCSRKAESNNIEDKIFGKTYHRKSVHINLN |
| | 476 |
| | 524 |
| HPG | HVTENLIIGAFV-TEPQIIQERPLTNKLRKRRTSGLHPEDFIKKADLA |
| Great_Apes | HVTENLIIGAFV-TEPQIIQERPLTNKLRKRRTSGLHPEDFIKKADLA |
| OWMonkeys | HVTENLIIGAFV-TEPQIIQERPLTNKLRKRRTSGLHPEDFIKKADLA |
| Monkeys | HVTENLIIGAFV-TEPQIIQERPLTNKLRKRRTSGLHPEDFIKKADLA |
| Primates | HVTENLIIGAFV-TEPQIIQERPLTNKLRKRRTSGLHPEDFIKKADLA |
| '+Tupaia' | HVTEDLIIGAFV-TEPQITQERPLTNKLRKRRTSGLHPEDFIKKADLA |
| Tamadua_Bradypus | HIAEDLFIGAIA-TEPKITQEHPLTNKIKRKRRTSGLHPEDFIKKVDLT |
| Armadillos | HITEDLFIGAIA-TEPKITQEHSLTNKIKRKRRTSGLHPEDFIKKVDLT |
| EuarchLauraXen | HVTEDLIIGAVA-TEPQITQERPLTNKLRKRRTSGLHPEDFIKKVDLA |
| Elephants | HITEDLIMGAIA-SEPQIAREHPFTNKLKRKR- TSGLHPEDFIKKVDLA |
| Hyraxes | HITEDLVKGGAIA-TQPQIAREHPLTNKLQHKRR- TSGLHPEDFIKKADLT |
| Sirenia | HVTEDLIIGAVA-TEPQIAQERPLTNKLRKR- TSGLHPEDFIKKVDLA |
| TE_Amblysomus | HVTEDLMIGAVA-TEPQIAQERPLTNKLRKR- TSGLHPEDFIKKVDLA |
| Macroscelidae | HVTQDLIIGAVA-TEPQTAQERPLTNKLRKR- TSGLHPEDFIKKVDLT |
| Orycteropus_TEAM | HVTEDLIIGAVA-TEPQIAQERPLTNKLRKR- TSGLHPEDFIKKVDLA |
| '+Cynocephalus' | HVTEDLIIGAVA-TEPQITQERPLTNKLRKRRTSGLHPEDFIKKADLA |
| Myotis_Tadarida | HITENLIIGASA-IEPQITQECPLTNKLRKRRTSGLHPEDFIKKVDLA |
| Taphozous_Tonatia | HITENLIIGASA-IEPQITQECPLTNKLRKRRTSGLHPEDFIKKVDLA |
| Pteropus_Cynopterus | HITENLITGASA-IEPQITQECPLTNKLRKRRTSGLHPEDFIKKIDLA |
| Megaderma_Hipposideros | HITENLIIGASA-VEPQITQECPLTNKLRKRRTSGLHPEDFIKKVDLA |
| Manis_C | HITEDLIIGASA-IEPQITQERPLTNKVRKRRTSGLHPEDFIKKVDLA |
| Carnivores | HTTEDLIIGACA-IEPQITQAHPLTNKAKRKRRTSGLHPEDFIKKVDLA |
| Cetacea | HIAENLIIGAST-VEPQITQERPLTNKLRKRRTSGLHPEDFIKKVDLA |
| BHC | HIAEDLIIGASA-VEPQITQERPLTNKLRKRRTSGLHPEDFIKKVDLA |
| Sus_BHC | HIAEDLIIGASA-VEPQITQERPLTNKLRKRRTSGLHPEDFIKKVDLA |
| Perissodactyla | HITEDLIIGASA-IEPQITQERPLTNKLRKRRTSGLHPEDFIKKVDLA |
| Insectivores | HVTEDLIIGASA-TEPQITQERPLTNKLRKRRTSGLYPEDFIKKVDLA |
| Glires | HVTEDLIIGAFV-TEPQITQERPLTNKLRKRRTSGLHPEDFIKKADLA |
| Sciurus_Glaucomys | HITENLIIGAFV-TEPQITQERPLTNKLRKRRTSCLHPEDFIKKTDLA |
| Aplodontia_SG | HVTENLIIGAFV-TEPQITQERPLTNKLRKRRTSCLHPEDFIKKTDLT |
| ASG_Graphiurus | HVTENLIIGAFV-TEPQITQERPLTNKLRKRRTSCLHPEDFIKKTDLT |
| Hystrix_OMMR | HVTENLIIGAFV-TEPQITQERPLTNKLRKRRTSCLHPEDFIKKTDLT |
| Pedetes_OMMR | HVTENLIIGAFV-TEPQITQERPLTNKLRKRRTSCLHPEDFIKKTDLT |
| Mus_Rattus | HVTE-- IIGTFT-TEPQITQEQPFTNKLKRKR- T-CLHPEDFIKKTDLT |
| Meriones_MR | HVTE-- IIGTFT-TEPQITQEQPFTNKLKRKR- T-CLHPEDFIKKTDLT |
| Oryzomys_MMR | HVTE-- IIGTFT-TEPQITQEQPFTNKLKRKR- T-CLHPEDFIKKTDLT |
| Tenrec_Echinops | HVTEDLMVGAAA-AVPPIAQEHLLTSKLRKR- SSVLHPEDFIKKTDLT |
| Wombat | YVTENLFAEAV-APDSLIPLEAPKNTLKRKR- KRSIADLQPEDFIKKTDLT |
| Phascogale | HITENLIVETV-VPDSLVPPEPLKNTLKRKR- KRTICDLQPEDFIKKTDLT |
| Echymipera | YLTENLLVETI-APDSLIPPEPLKNTLKRKR- KRTISDLQPEDFIKKTDLT |
| Shrew_Opossum | YVTENLIVETI-APDSVIPPEPLKNTLKRKR- KRTICBLQPEDFIKKTDLT |
| Red_Kangaroo | CMTENLIFAGAVVAPDSLIPPEPKTTKLRKR- KRTISNLQPEDFIKKTDLT |

| | | |
|------------------------|--|-----|
| Wallaroo | CITENLFAGAVVAPDSLIPPEPPKTTKLKRKRRTISNLQPE----- | |
| Tree_Kangaroo | CITENLFAGAVVAPDSLIPPEPPKTTKLKHKRRTISNLQPEDF----- | |
| Possum | YVTENLIVGAV-DSDSLIPPEPVKKTRLKRKRRTVSDLQP----- | |
| | 525 | 568 |
| HPG | V-QKTPEMINQGTNQM---EQNGQVMNITNSGHENKTKGDSIQ--NEKNP | |
| Great_Apes | V-QKTPEMINQGTNQM---EQNGQVMNITNSGHENKTKGDSIQ--NEKNP | |
| OWMonkeys | V-QKTPEMINQGTNQM---EQNGQVMNITNSGHENKTKGDSIQ--NEKNP | |
| Monkeys | V-QKTPEKINQGTNQM---EQNGQVMNITNSGHENKTKGDSIQ--NEKNP | |
| Primates | VVQKTPEKINQGTNQM---EQNGQVMNITNSGHENETKGDYVQ--NEKNA | |
| '+Tupaia' | VVQKTPEKINQGTNQM---EQNGQVMNITNSGHENETKGDYVQ--NEKNA | |
| Tamadua_Bradypus | VVQKTPEKINQGTNQM---EQNGQVMNIANSNGHENETKGDYVQ--KEKNA | |
| Armadillos | VVQKTPEKINQGTNQM---EQNDQVMNIANSNGHENETKGDYVQ--KEKNA | |
| EuarchLauraXen | VVQKTPEKINQGTNQM---EQNGQVMNIANSNGHENETKGDYVQ--KEKNA | |
| Elephants | VVQKIPEKINQETDQV---EQNGQVMNIANGGRENETKGDYVQ--KEKNA | |
| Hyraxes | VVQKASEKINQETDKV---EQSQQVINIANGGHENETKDDYVL--KEKNG | |
| Sirenia | VVQKTPEKINQETDQV---EQNGQVMNIANGGHENETKDDYVQ--KEKNA | |
| TE_Amblysomus | VVQKTPEKINQETDQV---EQNGQVMNIADGGHENETKGDYVQ--KEKNA | |
| Macroscelidae | VVQKTPEKINQETDQV---EQNGQVMNIADGGHENETKGDYVQ--KEKNA | |
| Orycteropus_TEAM | VVQKTPEKINQETDQV---EQNGQVMNIADGGHENETKGDYVQ--KEKNA | |
| '+Cynocephalus' | VVQKTPEKINQETDQV---EQNGQVMNITNSGHENETKGDYVQ--KEKNA | |
| Myotis_Tadarida | VVQKTPEKIIIEGTDQI---EQNGHVMNITNNGHENETKGDYVQ--KEKNA | |
| Taphozous_Tonatia | VVQKTPEKIIIEGTDQI---EQNGHVMNITNNGHENETKGDYVQ--KEKNA | |
| Pteropus_Cynopterus | VVQKTPEKIIIEGTDQI---EQNGHVMNSTNNGHENETKGDYVQ--KKKNT | |
| Megaderma_Hipposideros | VVQKTPEKIIIEGTDQI---EQNGHVMNITNNGHENETKGDYVQ--KEKNA | |
| Manis_C | VVQKTPEKIIIEGTDQI---EQNGHVMNITNNGHENETKGDYVQ--KEKNA | |
| Carnivores | IVQKTPEKLIIEGTDQI---EQNGHVMNITNNGPENETKGDYVQ--KEKNA | |
| Cetacea | VIPKTPEKIIIEGTDQI---EQNGHGMNITSNGHETEMKGDYVQ--KEKNA | |
| BHC | VVPKTPEKIIIEGTDQI---EQNGHGMNITSNGHENETKGDYVQ--KEKNA | |
| Sus_BHC | VVPKTPEKIIIEGTDQI---EQNGHGMNITSNGHENETKGDYVQ--KEKNA | |
| Perissodactyla | VVQKTPEKIIIEGTDQI---EQNGHVMNITNNGHENETKGDYVQ--KEKNA | |
| Insectivores | VVQKTPEKIIIEGTDQI---EQNGQVMNIANNNGHENETKGDYVQ--KEKNA | |
| Glires | VVQKTPEKINQGTNQM---EQNGQVMNITNSGHENETKGDYVQ--KEKNA | |
| Sciurus_Glaucomys | VVQKTPEKINQGTNQM---EQNDQVMNITNSGQENETKVDYVQ--KEKNA | |
| Aplodontia_SG | VVQKTPEKINQGTNQM---EQNDQVMNITNSGQENETKVDYVQ--KEKNA | |
| ASG_Graphiurus | VVQKTPEKINQGTNQM---EQNDQVMNITNSGHENETKGDYVQ--KEKNA | |
| Hystrix_OMMR | VVQKTPEKINQGTNQM---EQNGQVMNITNSGHENETKGDYVQ--KEKNA | |
| Pedetes_OMMR | VVQKTPEKINQGTNQM---EQNGQVMNITNNGHENETKGDYVQ--KEKNA | |
| Mus_Rattus | VVQRTPENINQGTNQM---EPNDQAMSI TSNGQENETGNDLQ--KEKNA | |
| Meriones_MR | VVQKTPEKINQGTNQM---EPNDQAMSI TSNGQENETKGNLQ--KEKNA | |
| Oryzomys_MMR | VVQKTPEKINQGTNQM---EPNGQAMSI TSNGQENETKGNLQ--KEKNA | |
| Tenrec_Echinops | VVQKTPEKINQGTNQM---QPKGQVENIPDGGHGHGTKGDCVQ--KEKSA | |
| Wombat | VIHKTPEKKNHSDVQILKREQSDQVMNTANSLPEQKALGGHVGEVKDVQV | |
| Phascogale | VTHKTPEKKNHAAVDQILEREQNDQVMNMDNGHPEQKALNGHVGEIKEAQT | |
| Echymipera | VSHKTPEKKNPAVDQILEKEQNGQVMSTADGQSKQKAPGCHVGEKDAQA | |
| Shrew_Opossum | VIPKTPEKKNHPVDQILEKEQNGQVMSTADGQSKQKAPGCHVGEKDAQA | |
| Red_Kangaroo | VVHKTPERKNHAAVDQILEKEQND-----TANSHLEQKALDGHAGEVKDAQA | |
| Wallaroo | ----- | |
| Tree_Kangaroo | ----- | |
| Possum | ----- | |
| | 569 | 618 |
| HPG | NPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR | |
| Great_Apes | NPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR | |
| OWMonkeys | NPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR | |
| Monkeys | NPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR | |
| Primates | NPTELEKESAFRTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR | |
| '+Tupaia' | NPTELEKESAFRTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR | |
| Tamadua_Bradypus | NPTELEKESAFRTKGEPISSISNMELELNIYNSKASKKNRLRRMSSTR | |

| | |
|------------------------|--|
| Armadillos | NPTESELEKESAFRTKGEPISSSISNMELELNIYNSKASKKNRLRRMSSTR |
| EuarchLauraXen | NPTESELEKESAFRTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR |
| Elephants | IPTESLAKESAFRTKAEPISSSISNMELELNMHNSKAPKKNRLRRKSSTR |
| Hyraxes | NPAESLKKESVFKTKAEPISNSISNMELELNTHNSKSLKKNRLRKKSSSR |
| Sirenia | NPTESLTKESAFRTKAEPISSSISNMELELNMHNSKAPKKNRLRRKSSTR |
| TE_Amblysomus | NPTESLAKESAFRTKAEPISSSISNMELELNMHNSKAPKKNRLRRKSSTR |
| Macroscelidae | NPTESLAKESAFRTKAEPISSSISNMELELNMHSSIAPKKNRLRRKSSTR |
| Orycteropus_TEAM | NPTESLAKESAFRTKAEPISSSISNMELELNMHNSKAPKKNRLRRKSSTR |
| '+Cynocephalus' | NPTESELEKESAFRTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR |
| Myotis_Tadarida | NPTESELEKESAFRTKAEPISSSISNMELELNIHSSKAPKKNRLRRKSSTR |
| Taphozous_Tonatia | NPTESELEKESAFRTKAEPISSSISNMELELNIHSSKAPKKNRLRRKSSTR |
| Pteropus_Cynopterus | NPTESELEKESAFRTKAEPICSSISNMELELNIHSSKALKKKNRLRRKSSTR |
| Megaderma_Hipposideros | NPTESELEKESAFRTKAEPISSSISNMELELNIHSSKAPKKNRLRRKSSTR |
| Manis_C | NPTESELEKESAFRTKAEPISSSISNMELELNIHSSKAPKKNRLRRKSSTR |
| Carnivores | NPTESELEKESAFRTKAEPISSSISNMELELNSHSSKAPKKNRLRRKSSTR |
| Cetacea | NLTESELEKESAFRTKAEPISSSISNMELELNIHSSKAPK-NRLRRKSSTR |
| BHC | NPTESELEKESAFRTKAEPISSSISNMELELNIHSSKAPK-NRLRRKSSTR |
| Sus_BHC | NPTESELEKESAFRTKAEPISSSISNMELELNIHSSKAPK-NRLRRKSSTR |
| Perissodactyla | NPTESELEKESAFRTKAEPISSSISNLELELNIHSSKAPKKNRLRRKSSTR |
| Insectivores | NPTESELEKESAFRTKAEPISSSISNMELELNIHSSKAPKKNRLRRKSSTR |
| Glires | NPTESELEKESAFRTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR |
| Sciurus_Glaucomys | NPVESLEKESAFRTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR |
| Aplodontia_SG | NPIESLEKESAFRTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR |
| ASG_Graphiurus | NPIESLEKESAFRTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR |
| Hystrix_OMMR | NPIESLEKESAFRTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR |
| Pedetes_OMMR | NPIESLEKESAFRTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTR |
| Mus_Rattus | HPIESLRKEPAFTAKAKSISNSISDLEVELNVHSSKAPKKNRLRRKSSTR |
| Meriones_MR | NPIESLGKESAFRTAKAKPISNSISDLEVELNVHNSKAPKKNRLRRKSSTR |
| Oryzomys_MMR | NPIESLGKESAFRTAKAKPISSSISNLELELNVHNSKAPKKNRLRRKSSTR |
| Tenrec_Echinops | NLAESSAKESAFRTVAEPLSSSRKSSMELELTVFNASKAQK-NRLRRKPSAR |
| Wombat | LELFSAEKESTFRGTGTEPVAGSTNHGELELNSRNAKMTKDRKDRKPSAR |
| Phascogale | SELFSAEKESTFRGTGTEPAAS-----LNGEETNITKKDKLRKQPSFK |
| Echymipera | AELFSTEKESTFRTRTEPKAGSIVHGELELNGRGAKMTKKDRKDRKPSAR |
| Shrew_Opossum | SEPSVVEKGSTFKTGSEPAAGSTNQRELELNGRDAKMTKKDRPRKRPSVR |
| Red_Kangaroo | SELFSAEKESTFRGTGTEPTADSTNHRELELNGRDVKMTK----- |
| Wallaroo | ----- |
| Tree_Kangaroo | ----- |
| Possum | ----- |

619

667

| | |
|-------------------|---|
| HPG | HIHALELVVSRNLSPPNCTELQIDSCSSSEEIKK-KKYNQMPVHRSRNLQ |
| Great_Apes | HIHALELVVSRNLSPPNCTELQIDSCSSSEEIKK-KKYNQMPVHRSRNLQ |
| OWMonkeys | HIHALELVVSRNLSPPNCTELQIDSCSSSEEIKK-KKYNQMPVHRSRNLQ |
| Monkeys | HIHALELVVSRNLSPPNYTELQIDSCSSSEEIKK-KKYNQMPVHRSRNLQ |
| Primates | HIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQMPVHRSRNLQ |
| '+Tupaia' | HIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQMPVHRSRNLQ |
| Tamadia_Bradypus | HIHALELVANRNPSPNHTELQIDSCSSSEEIKK-KNSDQKPIRHSRMLQ |
| Armadillos | HIHALELVGNRNPSPNHTELQIDSCSSSEEIEK-INSNQKPIRHSRMLQ |
| EuarchLauraXen | HIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQKPVHRSRNLQ |
| Elephants | HIHALELVVNRNPSPPHTTELQIDSWSSSEETKK-KSSEQKPIRHSRNLQ |
| Hyraxes | HVHALELVVNRNPSPPHTGLQIDSWSGSEEMKK-TSSEQKPVHRINLQ |
| Sirenia | HIHALELVVNRNPSPPHTTELQIDSWSSSEEIKK-KSSEQKPVHRHSRNLQ |
| TE_Amblysomus | HIHALELVVNRNPSPPHTTELQIDSWPSSEEIKK-KSSEQKPVHRSRNLQ |
| Macroscelidae | HIHALELVVNRNPSPPHTTELQIDSWPSSEEIKK-KRSEHKPVHRSRNLQ |
| Orycteropus_TEAM | HIHALELVVNRNPSPPHTTELQIDSWPSSEEIKK-KSSEQKPVHRSRNLQ |
| '+Cynocephalus' | HIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQMPVHRSRNLQ |
| Myotis_Tadarida | HIYALELVVNRNPSPPNHTELQIDSCSSSEEVKE-KNSDQIPVHRSKKLQ |
| Taphozous_Tonatia | HIYALELVVNRNPSPPNHTELQIDSCSSSEEVKK-KNSDQIPVHRSKKLQ |

| | |
|------------------------|--|
| Pteropus_Cynopterus | HIHALELVVNRNPSPPNHTELQIDSCSSSEELKE-KNSDQMPVHRSHKLLQ |
| Megaderma_Hipposideros | HIHALELVVSRNPSPPNHTELQIDSCSSSEEVKK-KNSDQMPVHRSHKLLQ |
| Manis_C | HIHALELVVNRNPSPPNHTELQIDSCSSSEEMKK-KNSDQMPVHRSHKLLQ |
| Carnivores | HIRALELVVNRNPSPPDHTELQIDSCSSSEEMKK-KNSDQMPVHRSHKTLQ |
| Cetacea | KIHALELVVSRNPSPPNHTELQIDSCSSSEEMKK-KHSSQMPVHRHGKLLQ |
| BHC | QIHALELVVSRNPSPPNHTELQIDSCSSSEEMKK-KHSSQMPVHRSHKLLQ |
| Sus_BHC | QIHALELVVSRNPSPPNHTELQIDSCSSSEEMKK-KHSDQMPVHRSHKLLQ |
| Perissodactyla | HIHALELVVSRNPSPPNHTELQIDSCSSSEEMKK-KNSDQMPVHRSHKLLQ |
| Insectivores | HIHALELVVNRNPSPPNHTELQIDSCSSSEEMKK-KNSDQMPVHRSHKLLQ |
| Glires | HIHALELVVNRNPSPPNHTELQIDSCSSSEEMKK-KNSDQMPVHRSHKLLQ |
| Sciurus_Glaucomys | HIHVLEPVVNRNTPSPPHHTELQIDSCSSSEEMKK-KNSDQMPVHRSHKLLQ |
| Aplodontia_SG | HIHALELVVNRNTPSPPHHTELQIDSCSSSEEMKK-KNSDQMPVHRSHKLLQ |
| ASG_Graphiurus | HIHALELVVNRNTPSPPHHTELQIDSCSSSEEMKK-KNSDQMPVHRSHKLLQ |
| Hystrix_OMMR | HIHALELVVNRNPSPPNHTELQIDSCSSSEEMKK-KNSDQMPVHRSHKLLQ |
| Pedetes_OMMR | HIHALELVVNRNPSPPNHTELQIDSCSSSEEMKK-KNSDQMPVHRSHKLLQ |
| Mus_Rattus | CVLPLEP IV-RNPSPPTCAELQIDSCSSSEETTK-NNSNQTPAGHIREPQ |
| Meriones_MR | CVLLEP VV-RNPSPPTCAELQIDSCSSSEETTK-NNSNQTPVHRIRKPQ |
| Oryzomys_MMR | CVLLEP VV-RNPSPPTCTELQIDSCSSSEETTK-NNSNQMPVHRIRKPQ |
| Tenrec_Echinops | HIHPLELVVNRQPSPTTHTTELQISSWPSSEELKK-EESEP KPVRRSRNLQ |
| Wombat | IVRALELVVDRNPSSSNESELQIDSYPSSEEIRKGTNSEQKQIRRSRRLR |
| Phascogale | IVCALELVVDGSPSSSNETELQIDSYPSSEEIRKGNNSEQKQLRRSRRLQ |
| Echymipera | IVRALELVADKNSGSSNEAELQIDSYPSSEIRKGNNSEQKQIRRSRRLQ |
| Shrew_Opossum | TVCALELVTDHRPGSSNETELQIDSYPSSEEIRKGNNSEQKQVRRSRRLQ |
| Red_Kangaroo | ----- |
| Wallaroo | ----- |
| Tree_Kangaroo | ----- |
| Poosum | ----- |

668

717

| | |
|------------------------|--|
| HPG | LMEDKEPATGAKKSNKPNEQTSKRHSDTFPELKL TNAPGSFTNCSNTSE |
| Great_Apes | LMEDKEPATGAKKSNKPNEQTSKRHSDTFPELKL TNAPGSFTNCSNTSE |
| OWMonkeys | LMEDKEPATGAKKSNKPNEQTSKRHASDTFPELKL TNVPGSFTNCSNTSE |
| Monkeys | LMEDKEPATGAKKSNKPNEQTSKRHASDTFPELKL TNIPGSFTNCSNTSE |
| Primates | LMEDKEPATGAKKSNKPNEQTSKRHASDTFPELKL TNIPGFFTNCSSSNK |
| '+Tupaia' | LMEDKEPATGAKKSNKPNEQTSKRHASDAFPELKL TNIPGFFTNCSSSNK |
| Tamadua_Bradypus | LMKDKEATGAKKSNKRNEQTSKRHASDAFPELNL TNVTGFLTCKSSSDK |
| Armadillos | LMKEKETTTGAKKSNKPNEQTSKRHASDAFPELKL TNVTDFLPKSSSDK |
| EuarchLauraXen | LMKDKEATGAKKSNKPNEQTSKRHASDAFPELNL TNITGFFTNCSSSDK |
| Elephants | LMKNQETATGAKKSNKPKEQTSKRHGADSYPELHL TTTAGFITCKSSSDN |
| Hyraxes | LMKNQETTTGAKKSNKPKEQTSKRHASDTYPELNL TSTAGFITACSSSDN |
| Sirenia | LMKNQETTTGAKKSNKPKEQTSKRHASDTYPELNL TSTGLITNCSSSHN |
| TE_Amblysomus | LMKDQETATGAKKSNKPNEQTSKRHATDTFPELNL TNITGFITNCSSSDN |
| Macroscelidae | LMKDQETETGAKKSNKPNEQTSKRHATDTSPERNITG ---FITNCSNTDN |
| Orycteropus_TEAM | LMKDQETATGAKKSNKPNEQTSKRHATDTFPELNL TNITGFITNCSSSDN |
| '+Cynocephalus' | LMEDKEPATGAKKSNKPNEQTSKRHASDAFPELKL TNIPGFFTNCSSSNK |
| Myotis_Tadarida | LMEGKEPATGAKKSNKSNEQTSKRKLASDAFPELNL TNIPGFFTNCSSSNK |
| Taphozous_Tonatia | LMEGKEPATGAKKSNKSNEQTSKRKLASDAFPELNL TNIPGFFTNCSSSNK |
| Pteropus_Cynopterus | FIEDKESATGAKKSNKPNEQTSKRKLASDAFPELNL TNIPGFFTNCSSSNK |
| Megaderma_Hipposideros | LIEDKEPATGAKKSNKPNEQTSKRKLASDAFPELNL TNIPGFFTNCSSSNK |
| Manis_C | LMEDKEPATGAKKSNKPNEQTSKRKLASDAFPELNL TNIPGFFTNCSSSNK |
| Carnivores | LMEDKEPATGAKKSNKPSEQTSKRKLASDAFPELNL TNIPGFFTNCSSSNK |
| Cetacea | FMGDKEPTTGAKKSNKPHEQTSKRKLASDAYPELNL TNIPGFFTHCSSSNK |
| BHC | LMGDKEPTTGAKKSNKPHEQTSKRKLASDAFPELNL TNIPGFFTNCSSSNK |
| Sus_BHC | LMGDKEPTTGAKKSNKPHEQTSKRKLASDAFPELNL TNIPGFFTNCSSSNK |
| Perissodactyla | LMEDKEPATGAKKSNKPNEQTSKRKLASDAFPELKL TNIPGFFTNCSSSNK |
| Insectivores | LMEDKEPATGAMKSNKPNEQTSKRKLASDAFPELNL TNIPGFFTNCSSSNK |
| Glires | LMEDTEPATGAKKSNKPNEQTSKRKLASDAFPELKL TNIPGFFTNCSSSNK |
| Sciurus_Glaucomys | LMEDAEPATEVRKSNKPNEQTSKRKLASDAFPELKL TGISGLFTNCSSSNK |

| | |
|-----------------|---|
| Aplodontia_SG | LMEDAEPATGVKKSNNKPNQINKRHTNDAFPELKLGTGISGLFTNCSSSSK |
| ASG_Graphiurus | LMEDAEPATGVKKSNNKPNQISKRHTNDAFPELKLGTNIPGLFTNCSSSSNK |
| Hystrix_OMMR | LMEDAEPATGAKKSNNKPNQISKRHASDAFPELKLGTNIPGFFFTNCSSSSNK |
| Pedetes_OMMR | LMEDAEPATGAKKSNNKPNQISKRHASDAFPEVKLTNIPGFLTNCSSSSNK |
| Mus_Rattus | LIEDTEPAADAKKN-EPNEHIRKRSASDAFPEEKLMMNKAGLLTSCSSPRK |
| Meriones_MR | LIEDTEPAPDAKKN-EPNEQIRKRSASDAFPEEKLMTNIPGLLTSCSSPSK |
| Oryzomys_MMR | LIEDTEPAPDAKKNNEPNEQIRKRSASDAFPEEKLMTNIPGLLTSCSSSSNK |
| Tenrec_Echinops | LTKDQEMAIGAKKNDKPNNEERGKKHAPDTFPERNLNTNTDLITNCSVSGN |
| Wombat | LLSE-EIVVGAKKAHKPDDQAEESCISEVFPPELKIIGNVPACATDSLTTDR |
| Phascogale | QVSE-EIAIGAKKAHKPDDQAEESCITEVVSELKLGNLPAAPDNVSTDK |
| Echymipera | LLSE-EIAVGTKKAHEPYDQAEERCVKKVFPELEMGTVSAGATDSLSTDR |
| Shrew_Opossum | MLSE-EIAAGAKKAHKPDEEVEENCVNEVSPPELKIIGKVSACSTDSLATDS |
| Red_Kangaroo | ----- |
| Walleroo | ----- |
| Tree_Kangaroo | ----- |
| Possum | ----- |

718

766

| | |
|------------------------|--|
| HPG | LKEFVNPSLPRREEKEEKLETVKVSNNAEDPK-DLMLSGERVLQTERSVE |
| Great_Apes | LKEFVNPSLPRREEKEEKLETVKVSNNAKDPK-DLMLSGERVLQTERSVE |
| OWMonkeys | LKEFVNPSLPRREEKEEKLETVKVSNNAKDPK-DLMLSGERVLQTERSVE |
| Monkeys | LKEFVNPSLPRREETEEKLETVKVSNNAKDPK-DLMLSGERVLQTERSVE |
| Primates | LKEFVNPSLQREEIEENLETIQVSNSTKDPK-DLVLSGERVLQTERSVE |
| '+Tupaia' | LQEFVNPSLQREEIEENLETIQVSNSTKDPK-DLVLSGERGLQTERSVE |
| Tamandua_Bradypus | LQEFVNSSLQGEVAE-NLETIQVSDSTRDPE-DLVLSGGKGLQTERSVE |
| Armadillos | LQEFVNSSLQGEVAE-NLETIQVSDSTRDPE-DLVLSGGKSLQTERSAES |
| EuarchLauraXen | LQEFVNPSLQGEEIEENLETIQVSNSTKDPK-DLVLSGGGRGLQTERSVE |
| Elephants | LQEFVNPSLQGEKTEENLETIQVSNITKEPK-DLVLNNGRDLQTKKSIES |
| Hyraxes | LQEPVNPSLQGEEIEENLATVQMSNTAKEPE-DLELNNGRVLQTKRSVES |
| Sirenia | YQEFVNPSLQGEEIEENLGTIQVSNRTRDPE-DLVLNNGRGLQTEISVES |
| TE_Amblysomus | LQEFVNPSLQGEEIEENLGTMQVSNSTKDPK-DQVLSGGGRGLQTERSVE |
| Macroscelidae | LQEFVNPSLQGEEIEENLGPQVSNSTKDPK-DQVLSRGRGLHTGKCVES |
| Orycteropus_TEAM | LQEFVNPSLQGEEIEENLGTIQVSNSTKDPK-DQVLSGGGRGLQTERSVE |
| '+Cynocephalus' | LQEFVNPSLQREEIEENLETIQVSNSTKDPK-DLVLSGERGLQTERSVE |
| Myotis_Tadarida | LKEFVNPNLQREEIEENLGTQVMSNSTKDLK-DLILSGGRSLQTDPSMES |
| Taphozous_Tonatia | LQEFVDPNLQREEIEENLGTIQVSNSTKDLK-DLILSGGRSLQTDPSMES |
| Pteropus_Cynopterus | LQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLILSGGRSLQTDPSMES |
| Megaderma_Hipposideros | LQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLILSGGRGLQTDPSMES |
| Manis_C | LQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLILSGGRGLQTERSVE |
| Carnivores | LQEFVNPSLQREEIEESRGTIQVSDSTRDPE-ELVLSGGGRGLQTERSVE |
| Cetacea | LQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLTLGGKGLQIERSVES |
| BHC | LQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLILSGGKGLQIERSVES |
| Sus_BHC | LQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLILSGGKGLQIERSVES |
| Perissodactyla | LQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLILSGGRGLQTERSVE |
| Insectivores | LQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLILSGERGLQTERSVE |
| Glires | LQEFVNPSLQREEIEENLETIQVSNSTKDPK-DLVLSGERGLQTERSAES |
| Sciurus_Glaucomys | VEEFVNPNLQKEETEENLEIIQVSNNTKDPK-DMVLSGERVLQTERSAES |
| Aplodontia_SG | LKEFVNPNLQKEETEENLEIIQVSNSTKDPK-DMVLSGERGLQTERSAES |
| ASG_Graphiurus | LKEFVNPNLQKEEIEENLETIQVSNSTKDPK-DLVLSGERGLQTERSAES |
| Hystrix_OMMR | LKEFVNPNLQKEEIEENLETIQVSNSTKDPK-DLVLSGERGLQTERSAES |
| Pedetes_OMMR | LKEFVNPNLQKEEIEENLETIQVSNSTKDPK-DLVLSGERGLQTERSAES |
| Mus_Rattus | PQGPVNPSLQKEEIEENLETIQVSNSTKDPK-DLVLSGERGLQTERSAES |
| Meriones_MR | PQGPVNPSLQKEEIEENLETIQVSNSTKDPK-DLVLSGERGLQTERSAES |
| Oryzomys_MMR | PQGPVNPSLQKEEIEENLETIQVSNSTKDPK-DLVLSGERGLQTERSAES |
| Tenrec_Echinops | LQGSVCPSLPGAKLKEKLGTVQVSNSTRDPE-DEVLGRARGLQTERSAES |
| Wombat | DQVLASCSFTTERDERSLEAIPSSK---DQD--LPLNGGEGLOGERAPGS |
| Phascogale | DQVLASCSFT--GDERSLAIPSSQ---DQD--LALSGKEGLQGEISQGS |
| Echymipera | DEVLASCSFTD-GEERNLEAIPSSK---DQDQDLALSERERLQEKRTQGN |

| | | |
|------------------------|--|-----|
| Shrew_Opossum | DLVLASCSFTE-GDEKSLEAFQPSR---DQDS-LAVSRGEKLGKRTKGN | |
| Red_Kangaroo | ----- | |
| Walleroo | ----- | |
| Tree_Kangaroo | ----- | |
| Possum | ----- | |
| | 767 | 816 |
| HPG | SSISLVPGTDYGTQESISLLEVSTLGKAKTEPNKCVSQCAAFENPKGLIH | |
| Great_Apes | SSISLVPGTDYGTQESISLLEVSTLGKAKTEPNKCVSQCAAFENPKELIH | |
| OWMonkeys | SSISLVPGTDYGTQESISLLEVSTLGKAKTEPNKCVSQCAAFENPKELIH | |
| Monkeys | SSISLVPGTDYGTQESISLLEVSTLGKAKTEPNKCVSQCAAFENPKELIH | |
| Primates | TSISLVPDTDYGTQDSISLLEVNTLGKAKTAPNKRVSQCAAIENPKELIH | |
| '+Tupaia' | TSISLVPDTDYGTQDSISLLEANTLGKAKTAPNQRVSQCAAIENPKELIH | |
| Tamadua_Bradypus | TSISVVPDTDYGTQDSISLLEADTLGKAKAAPNQHVSYAAIGNATELFH | |
| Armadillos | TSISVVPDTDYGTQDSISLLEADTLGKAKTALNQHVSYAAIRNATELSH | |
| EuarchLauraXen | TSISVVPDTDYGTQDSISLLEADTLGKAKTAPNQRASQCAAIENPNELIH | |
| Elephants | TNISVIPDTPVYGTQDSVSLLGADTPGKAKTAPNQCASQCTAIENPSELTN | |
| Hyraxes | TSTSVIPDADCGAQDSISLLEADTLGKAKTAPNQGAGQCSAIENPNELIH | |
| Sirenia | TSISVIPDTPDYGQNSISLLEADTLRKAKTAPNQCASQCAAIENPNELIH | |
| TE_Amblysomus | TSISVIPDTPDYGQDSISLLEAGTLGKAETAPNQCASQCAAIENPNKLIH | |
| Macroscelidae | TSISVIPDTPDYGQNSISLLEAGTLGKAETAPNQCASHCAAIENPNKHVH | |
| Orycteropus_TEAM | TSISVIPDTPDYGQDSISLLEADTLGKAKTAPNQCASQCAAIENPNKLIH | |
| '+Cynocephalus' | TSISLVPDTDYGTQDSISLLEANTLGKAKTAPNQRVSQCAAIENPKELIH | |
| Myotis_Tadarida | TNILLVPETDYGTDQDSISLLEPDTPGKAKTAPNQCAGLCAAIKPNKELIH | |
| Taphozous_Tonatia | TNILLVPETDYGTDQDSISLLEPDTPGKAKTAPNQRAGLCAAIENPKELIH | |
| Pteropus_Cynopterus | TSILLVPETDYGTDQDSISLLEPDI PGRAKTAPNQHADLCAAIENPRELIH | |
| Megaderma_Hipposideros | TSILLVPDTDYGTQDSMSLLEPDTPGKAKTAPNQRAGVCAAIENPKELIH | |
| Manis_C | TSISLVPDTDYGTQDSISLLEADTLGKAKTAPNQRASLCAAIENPKELIH | |
| Carnivores | TSISLVPDTDYGTQDSISLLEADTLGKAKTAPNQRASLCAAIENPKELIH | |
| Cetacea | TSISLVPDTDYGTQDSISLLEADTLGKAKTAPNQRHVSLCAAIENPKELIH | |
| BHC | TSISLVPDTDYGTQDSISLLEADTLGKAKTAPNQRVSLCAAIENPKELIH | |
| Sus_BHC | TSISLVPDTDYGTQDSISLLEADTLGKAKTAPNQRVSLCAAIENPKELIH | |
| Perissodactyla | TSISLVPDTDYGTQDSISLLEADTLGKAKTAPNQRASLCAAIENPKELIH | |
| Insectivores | TSISLVPDTDYGSQDSISLLEADTLGKAKKAPNQCASLCAAIENPKELIH | |
| Glires | TSISLVPDTDYGTQDSISLLEANTLGKAKTAPNQRVSQCAAIENPKELIH | |
| Sciurus_Glaucomys | TSISLVPDTDYGTQDSISLLEANTFGKARTASNQHVYQYVAIENPKELIH | |
| Aplodontia_SG | TSISLVPDTDYGTQDSISLLEANTFGKARTASNQHVYQYVAIENPKELIH | |
| ASG_Graphiurus | TSISLVPDTDYGTQDSISLLEANTLGKARTASNQCVTQYVAIENPKELIH | |
| Hystrix_OMMR | TSISLVPDTDYGTQDSISLLEANTLGKAKTASNQCVTQYVAIENPKELIH | |
| Pedetes_OMMR | TSVSLVPDTDYGTQDSISLLEANTLRKAKTASNQCVTQYVAIENPKELIH | |
| Mus_Rattus | TSVSLVPDTDYDTQNSVSVLEANTVRYARTGSVQCMTQFVASENPKELVH | |
| Meriones_MR | TSVSLVPDTDYDTQNSVSVLEANTVRYAKTGS IQCMTQFVASENPKELVH | |
| Oryzomys_MMR | TSVSLVPDTDYDTQNSVSVLEANTVRYAKTGS IQCMTQFVASENPKELVH | |
| Tenrec_Echinops | TSVSLIPDADDGTQGSISIMEAGNRGEAQTAPDQCARQCAAIENPNKSVH | |
| Wombat | LEALEVPDTDWDTQDSTSLFPADTPQNSKAGPSPHRSHSEIMETPKELLD | |
| Phascogale | LGTVEVPDPAWDTQDSTSLFPADTPQNSKPGPSPHRNHCEIMETPKELLE | |
| Echymipera | LELLEVPDTPYWTQDSTSLFPAETPQNSKAGPSPHRSNCEIMESSKELFD | |
| Shrew_Opossum | MEVLEVASTDWDTDQDSTSLFPDTPVPPNPTADSGPHRNQHEVIETPKELFD | |
| Red_Kangaroo | ----- | |
| Walleroo | ----- | |
| Tree_Kangaroo | ----- | |
| Possum | ----- | |
| | 817 | 865 |
| HPG | GC-SKDTRNDTEGFKYPLGHEVNHSRETSIEMEESSELDAQYLQNTFKVSK | |
| Great_Apes | GC-SKDTRNDTEGFKYPLGHEVNHSQETS IEMEESSELDTQYLQNTFKVSK | |
| OWMonkeys | GC-SKDTRNDTEGFKYPLGREVNHSQETS IEMEESSELDTQYLQNTFKVSK | |
| Monkeys | GC-SKDTRNDTEGFKYPLGREVNHSQETS IEMEESSELDTQYLQNTFKVSK | |
| Primates | GC-SKDTRNDTEGFKDPLRREVNIQETS IEMEESSELDTQYLQNTFKVSK | |

| | |
|------------------------|--|
| '+Tupaia' | GC-SKDTRNDTEGFKDPLRREVNHIQETSIEMEESELDTQYLQNTFKVSK |
| Tamadua_Bradypus | GC-SKDTRNDTEDFKDPLRHEVNHTQETIVEMEESELDTQYLQNTFKISK |
| Armadillos | GC-SKDTRNDTEDFKDPLRHEVNHTQETSVEMEESELDTQYLQNTFKISK |
| EuararchLauraXen | GC-SKDTRNDTEGFKDPLRREVNHIQETSIEMEESELDTQYLQNTFKVSK |
| Elephants | SC-PKDTRNDTEGFKDLLRCEASHIQETCIEIEESELDTQYLQSTFKVSK |
| Hyraxes | GS-PKDTRNDIEGFKDPLRCEVNPIQEICVEMDENELDTQYIQRSTFKVSK |
| Sirenia | GC-PKDTRNDTEDFKDLLRCEVNHIQETCIEMEDSELDTQYLQSTFKVSK |
| TE_Amblysomus | GF-PKDTRNDTEGFKDLLRREVNHIQETCIEMEESELDIQYLQNTFKVSK |
| Macroscelidae | GF-PKDTGNDTEGFKDLLKCDANHIQDTCIEMEDSELDTQYLQNTFKVSK |
| Orycteropus_TEAM | GF-PKDTRNDTEGFKDLLRREVNHIQETCIEMEESELDTQYLQNTFKVSK |
| '+Cynocephalus' | GC-SKDTRNDTEGFKDPLRREVNHIQETSIEMEESELDTQYLQNTFKVSK |
| Myotis_Tadarida | GC-SKDTRNDREGFKDLLRREVNHTQETSIEMEESELDTQYLQNTFKVSK |
| Taphozous_Tonatia | GC-SKDTRNDTEGFKDLLRCEVNHTQETSIEMEESELDTQYLQNTFKVSK |
| Pteropus_Cynopterus | GC-SKDTRNDTEGFKDPLRREVNHTQETSIEMEESELDTQYLQNTFKVSK |
| Megaderma_Hipposideros | GC-SKDTRNDTEGFKDPLRREVNHTQETSIEMEESELDTQYLQNTFKVSK |
| Manis_C | GC-SKDTRNDTEGFKDPLRREDNHTQETSIEMEESELDTQYLQNTFKVSK |
| Carnivores | GC-SKDTRNDTEGFTDPLRREDNHTQETSIEMEESELDTQCLHNTFKVSK |
| Cetacea | GC-SKDIRNDTEDFQDPLGHVNHIQEASTEMEENELDTQYLQNMFKVSK |
| BHC | GC-SKDTRNDTEGFKDPLRREVNHTQETSIEMEESELDTQYLQNTFKVSK |
| Sus_BHC | GC-SKDTRNDTEGFKDPLRREVNHTQETSIEMEESELDTQYLQNTFKVSK |
| Perissodactyla | DC-SKDTRNDTEGFKDPLRREVNHTQETSIEMEESELDTQYLQNTFKVSK |
| Insectivores | GC-SKDTRNDTEGFKDPLRREVNHTQETSIEMEESELDTQYLQNTFKVSK |
| Glires | GC-SKDTRNDTEGFKDPLRREVNHIQETSIEMEESELDTQYLQNTFKVSK |
| Sciurus_Glaucomys | GH-SKDTRNDPEGFKDSLRCVNHIQETNVEMEESELDTQYLENTFQVSK |
| Aplodontia_SG | GH-SKDTRNDTEGFKDSLRCVNHIQETNVEMEESELDTQYLENTFQVSK |
| ASG_Graphiurus | GC-SKDTRNDTEGFKDSLRCVNHIQETNIEMEESELDTQYLQNTFQVSK |
| Hystrix_OMMR | GC-SKDTRNDTEGFKDPLRREVNHIQETNIEMEESELDTQYLQNTFQVSK |
| Pedetes_OMMR | GC-SKDTRNDTEGFKDPLRREVNHIQETNIEMEESELDTQYLQNTFQVSK |
| Mus_Rattus | G--SNNAGSGTECFKHPLRHELNHSQET-VEMEDSELDTQYLQNTFQVSK |
| Meriones_MR | G--SNNAGSGTECFKHPLRHELNHIQET-VEMEESELDTQYLQNTFQVSK |
| Oryzomys_MMR | G--SNNAGSGTECFKHPLRHELNHIQET-VEMEESELDTQYLQNTFQVSK |
| Tenrec_Echinops | GL-SKDTRNTEGFEFLLTHDVNHIQETCTEMEESELDIQSLQNTFKVSK |
| Wombat | GCSSKNTESDEEDLRLSLMRQEVKNASKTTTEMEDSELDTQYLQNTFKRSK |
| Phascogale | SSSSKNTESSEVEDLRLSLMKQEVKNASKTITEMEDSELDTQYLQNTFKRSK |
| Echymipera | AYSSKNTDSGTEG---LIRQEIKYGSETSSVMEDSELDTQYLQNTFKRSK |
| Shrew_Opossum | DCSSKNTGSGKED---LTRQEVKNTSETTTEIEDSELDTQYLQNTFKRSK |
| Red_Kangaroo | ----- |
| Wallaroo | ----- |
| Tree_Kangaroo | ----- |
| Possum | ----- |

866

914

| | |
|------------------|---|
| HPG | RQSFALFSNPGNPEEEECATFSAHSRSLKKQSPKVTFECEQKEEN-QGKNE |
| Great_Apes | RQSFALFSNPGNPEEEECATFSAHSRSLKKQSPKVTFECEQKEEN-QGKNE |
| OWMonkeys | RQSFALFSNPGNPEEEECATFSAHSRSLKKQSPKVTFECEQKEEN-QGKKE |
| Monkeys | RQSFALFSNPGNPEKEECATFSAHSRSLKKQSPKVTLECEQKEEN-QGKKE |
| Primates | RQSFALFSNPGNPEKEECATVCAHSRSLRKQSPKVTLECEQKEEN-QGKKE |
| '+Tupaia' | RQSFALFSNPGNPEKEECATVCAHSRSLRKQSPKVTLECEQKEEN-QGKKE |
| Tamadua_Bradypus | RQSFALFSNP---EKECATVCAHSRSLGKQSPKVTFDQRQKEEN-QGKKE |
| Armadillos | RQSFALFSNP---ENECATVCAHSRFLGKQSPKVTFEQRQKEEN-QGKKE |
| EuararchLauraXen | RQSFALFSNP---EKECATVCAHSRSLRKQSPKVTLECGQKEEN-QGKKE |
| Elephants | RQSFALFSNP---EKKCATICAHSKSLRKQSPKVTLCVCGEKEEN-QGNRE |
| Hyraxes | RHSFALFSNP---EKECATSYTHSKSLRKENPKVTLQRGEEEEEN-QGNKE |
| Sirenia | RQSFALFSNP---EKECATICAHSKSLRKQSPKVTPEYGEKEEN-QGNKE |
| TE_Amblysomus | RQSFALFSNP---EKECATVCAHSRSLRKQSPKVTLECGEKEEN-QGNKE |
| Macroscelidae | RQSFALFNP---EKECTTVCAHSRSLRKQSPKVTLECGEKEEN-QGNKE |
| Orycteropus_TEAM | RQSFALFSNP---EKECATVCAHSRSLRKQSPKVTLECGEKEEN-QGNKE |
| '+Cynocephalus' | RQSFALFSNPGNPEKEECATVCAHSRSLRKQSPKVTLECEQKEEN-QGKKE |

Myotis_Tadarida RQSFALFSN---PEKECATVYAHRSRLRKQSPKVTLECGQKEEN-QGEKE
 Taphozous_Tonatia RQSFALFSNPGNPEKECATVYAHRSRLRKQSPKVTLECGQKEEN-QGEKE
 Pteropus_Cynopterus RQS---FSNPGNLEKECATGYAHRSRLRKQSPKVTLECDRKEGN-QGKKE
 Megaderma_Hipposideros RQSFALFSNPGNPEKECATVYAHRSRLRKQSPKVTLECGQKEEN-QGKKE
 Manis_C RQSFALFSNPGNPEKECATVCAHSRSLRKQSPKVTLECGQKEEN-QGKKE
 Carnivores RQSFALFSNPGNPEKECATVCAHSRSLRKQSPKVTLECGQKEEN-QGKKE
 Cetacea RQTFALFSNPNPEKECATVCAHSGSLREQSPRVPLECRQKEEN-QGKSE
 BHC RQTFALFSNPGNPEKECATVCAHSGSLREQSPRVPLECGQKEEN-QGKSE
 Sus_BHC RQTFALFSNPGNPEKECATVCAHSGSLREQSPKVTLECGQKEEN-QGKSE
 Perissodactyla RQSFALFSNPGNPEKECATVCAHSRSLRKQSPKVTLECGQKEEN-QGKKE
 Insectivores RQSFALFSNPGNSEKECATVSAHSRSLRKQSPKVTLECEQKEEN-QGKKE
 Glires RQSFALFSNPGNPEKECATVCAHSKSLRKQSPKVTLECEQKEEN-QGKKE
 Sciurus_Glaucomys RQSFALFSNPGNLEKECAAIYTPSKSLRKQSPEVTLECEQKEEN-WGKKE
 Aplodontia_SG RQSFALFSNPGNPEKECAAVCTPSKSLRKQSPEVTLECEQKEEN-QGKKE
 ASG_Graphiurus RQSFALFSNPGNPEKECATVCAHSLRKQSPKVTLECEQKEEN-QGKKE
 Hystrix_OMMR RQSFALFSNPGNPEKECATVCAHSLRKQSPKVTLECEQKEEN-QGKKE
 Pedetes_OMMR RQSFALFSNPGNPEKECATVCAHSLRKQSPKVTLECEQKEEN-QGKEE
 Mus_Rattus RQSFALFSKPRSPQKDVCAHS---RELSPKVTSKGEQKER--QGQEE
 Meriones_MR RQSFALFSKPRSPQKECAAVCAHSNSFRELSPKVTSKGEQKEG--QGQEE
 Oryzomys_MMR RQSFALFSKPGNPQKECAAVCAHSNSFRELSPKVTSKGEQKEGI--QGQEE
 Tenrec_Echinops RQSFALSSNP---EKECATLCAHPSAFRQNPVVALECGEKEGT-QENKE
 Wombat RQSFALRSSP---RQECRKPSAVPGTVNQSPDNTTDCGGQEKEKQGNRE
 Phascogale RQSFALCSSP---RQEYVKTCAVPGAISQQS----TVRRYQEKEKQENRE
 Echymipera RQTFALCSNP---KQEQIKPCSVPRAVSHQSSDNASDCGGQEKEKQGNRE
 Shrew_Opossum RQSFALCPSP---RQTSMKLRSIPRALSHQSPDKATNHGGQEKKKQGSRE
 Red_Kangaroo -----
 Wallaroo -----
 Tree_Kangaroo -----
 Possum -----

915

962

HPG SNIKPVQTVNITAGFPVVCQKD-KPVDYAKCSIKGGSRFCLSSQF-RGNE
 Great_Apes SNIKPVQTVNITAGFPVVCQKD-KPVDYAKCSIKGGSRFCLSSQF-RGNE
 OWMonkeys SNIKPVQTVNITAGFPVVCQKD-KPVDYAKCSIKGGSRFCLSSQF-RGNE
 Monkeys SNIKPVQTVNTTAGFPVVCQKD-KPVDYAKCSIKGGSRLCLSSQF-RGNE
 Primates SKIKHVQAVNTTAGFPVVCQKD-KPGDYAKCSIKGVSRLCLSSQF-RGNE
 '+Tupaia' SKIKHVQAVNTTAGFPVVCQKD-KPGDYAKCSIKGVSRLCPSSQF-RGNE
 Tamadua_Bradypus SKIKHVQAVHTTAGFPVVCQKD-KPGDYAKCSIQGVSKLCQSSQF-RGNE
 Armadillos SKIKHVQAVHTTAGFPVVCQKD-KPGDYAKCSIQGVSRCLQSSQF-RGNE
 EuarchLauraXen SKIKHVQAVHTTAGFPVVCQKD-KPGDYAKCSIKGVSRLCQSSQF-RGNE
 Elephants PKIKHEQAVHMPAGYPEACQKE-KPSDYTKYSIKGVSGLCQSSQF-RGSE
 Hyraxes SKIKH---VHTTASCPEVCQED-TPSDRNTCSVKGLPRLCHSSQF-KGSE
 Sirenia SKIKHEQAVHTTAGYPEDCQKE-KPSDYTKCSIKGVSRLCQSSQF-RGSE
 TE_Amblysomus SKIKHVQAVHTTAGYPGVQCQKE-KPSDYTKCSIQGVSRCLQSSQF-RGNE
 Macroscelidae SKIKHVQVHTTAGYPGVCEEE-KPNDYTKCSIKGVSRLCQSSPF-RGNE
 Orycteropus_TEAM SKIKHVQAVHTTAGYPGVQCQKE-KPSDYTKCSIKGVSRLCQSSQF-RGNE
 '+Cynocephalus' SKIKHVQAVNTTAGFPVVCQKD-KPGDYAKCSIKGVSRLCPSSQF-RGNE
 Myotis_Tadarida SKIKHVQAVHTTAGFPVVCQKD-KPGDYAKYSIKGTSRLCQSSQF-RGNE
 Taphozous_Tonatia SKIKHVQAVHTTAGFPVVCQKD-KPGDYAKYSIKGTSRLCQSSQF-RGNE
 Pteropus_Cynopterus SNIKHVQAVYTTVGFVVCQKD-KPGDYAKYGIKEVSRLCQSFQF-RGNE
 Megaderma_Hipposideros SKIKHVQAVHTTAGFPVVCQKD-KPGDYAKYSIKGVSRLCQSSQF-RGNE
 Manis_C SEIKHVQAVHTTAGFPVVSQKD-KPGDYAKCSIKGVSRLCQSSQF-RGNE
 Carnivores SEIKHVQAVHTTAGFSAVSQKV-KPGDYAKCSIKGVSRLCQSSQF-RGNE
 Cetacea SKIKHVRAINTTVDFPVAGQKD-KPSDHAKRSPKRVTRLCQSSQF-RSNK
 BHC SKIKHVQAIYTTVDFPVAGQKD-KPSDYAKCSTKGVTRLCQSSQF-RGNK
 Sus_BHC SKIKHVQAVHTTVDFPVVQKD-KPSDYAKCSTKGVTRLCQSSQF-RGNK
 Perissodactyla SKIKHVQSVHTTVGFVVCQKD-KPGDYVCKSIKEVSRLCQSSQF-RGNE
 Insectivores SKIKHVQAVHTTAGFPVVCQKD-KPGDYAKCSIKGVSRLCQSSQF-RGNE

Glires SKIKHVQAVNTTVGFPVVCQKD-KPGDYAKCSIKGVSRLCPSSQF-RGNE
Sciurus_Glaucomys SKIRHVQAVNATMGF--VCQKD-KPDDDAQCSITEVSRICPSFQF-RGNE
Aplodontia_SG SKIRHVQAVNATMGFPVVCQKD-KPGDDAKCSITEVSRICPSFQF-RGNE
ASG_Graphiurus SKIRHVQAVNTTMGFPVVCQKD-KPGDDAKCSITGVSRLCPSSQF-RGNE
Hystrix_OMMR SKIRHVQAVNTTVGFPVVCQKD-KPGADAKCSITGVSRLCPSSQF-RGNE
Pedetes_OMMR SKIRHVQAVNTTVGFPVVCQED-KPGADAKCSITGVSRLCPSSQF-RGNE
Mus_Rattus SEISHVQAVTATVGLPVLCEG-KPGADTMCA--GVSRLCPSSHY-RSGE
Meriones_MR SEISHVQAVTATVGLPVLCEG-KPGADTMCA--GVSRLCPSSQY-RSNE
Oryzomys_MMR SEISHVQAVTATVGFVLCQEG-KPGADTMCAITGVSRLCPSSQY-RSNE
Tenrec_Echinops STIKPVQAVHTTVGGAGGSPTE-KPSDYTKSSLQGVSRLLGQASQF-RGSE
Wombat SNKPVWPKSAVMSLAAACQTEERKPGVYAKCSTTEVSRLLCHIAPLHGVID
Phascogale SNKPGQLASAVRSSAATCQTE-RKPGDPDKCSATGVSRLCHIAPLQEGND
Echymipera SDKAVQPELAVMSSAAVCQTEKKEKPGDYAKCST--VSRLCHIAPLHDDND
Shrew_Opossum -----
Red_Kangaroo -----
Wallaroo -----
Tree_Kangaroo -----
Possum -----

963

1011

HPG TGLITPNKHGLLQNPYHIPPLFPKSFV-KTKCKKNLLEENFEEHSMSPE
Great_Apes TGLITPNKHGLLQNPYHIPPLFPKSFV-KTKCKKNLLEENSEEHSMSPE
OWMonkeys TGLITPNKHGLLQNPYHIPPLFPKSFV-KTKCKKNLLEENSEEHSMSPE
Monkeys TGLITPNKHGLLQNPYHMPPLFPKSFV-KTKCKKNLLEENSEEHSMSPE
Primates TELITANKHGILQNPYHMPPLSPKSFV-KTKCKKNLLEERFEEHSVSPE
'+Tupaia' TELITANKHGISQNPYHMPPLSPKSFV-KTKCKKNLSEERFEEHSVSPE
Tamadua_Bradypus SELITANEHEISQNPDMPSLSPKSFV-KTKCKKNLSEERFEEHTVSLE
Armadillos SELITANEHEISQNPDMPSLSPKSFV-KTKCKKNLSEERFEEHTVSLE
EuarchLauraXen SELITANEHGISQNPDMPSLSPKSFV-KTKCKKNLSEERFEEHTVSLE
Elephants SELITADGHGISQNPDMPSLSPKSFV-KTKCKKNLSEERFEEHTVSLE
Hyaxes SELITEGEHGIAQNPDMPSLSPKSFV-KTKCKKNLSEERFEEHTVSLE
Sirenia SEHITAGEHGISQNPDMPSLSPKSFV-KS--KKNLSEERFEEHTVSLE
TE_Amblysomus SELITANEHGISQSPDQTPSLSPKSFV-KTKCKKNLSEERFEEHTVSLE
Macroscelidae SELITANEHEMSPDQTPSLSPKSFV-KTKCKKNLSEERFEEHTVSLE
Orycteropus_TEAM SELITANEHGISQNPDMPSLSPKSFV-KTKCKKNLSEERFEEHTVSLE
'+Cynocephalus' TELITANKHGISQNPYHMPPLSPKSFV-KTKCKKNLSEERFEEHSVSPE
Myotis_Tadarida TELTIANKHGISQNPYHMPPLSPKSFV-KTICKKNLSEERFEEHSVSPE
Taphozous_Tonatia TELTIANKHGISQNPYHMPPLSPKSFV-KTICKKNLSEERFEEHSVSPE
Pteropus_Cynopterus TELTIANKLGISQNPYHMPPLSPKSFV-KTICKKNLSEERFEEHSVSPE
Megaderma_Hipposideros TELTIANKHGISQNPYHIPPLSPKSFV-KTICKKNLSEENFEEYSVSPE
Manis_C TELI IANKHGISQNPYHIPPLSPKSFV-KTICKKNLSEERFEEHSMSPE
Carnivores TELFIANNHGISQNPYHIPPLSPKSFV-KTICKKNLSEERFEEHSMSPE
Cetacea TELI IANKHGISQNPYLIPSLSPKSFV-KTICKKNLSEERFEEHVMSPE
BHC TELI IANKHGISQNPYLIPSLSPKSFV-KTICKKNLSEERFEEHVMSPE
Sus_BHC TELI IANKHGISQNPYLIPSLSPKSFV-KTICKKNLSEERFEEHVMSPE
Perissodactyla TELITANKHGISQNPYIPSLSPKSFV-KTICKKNLSEERFEEHSVSPE
Insectivores TELI IANKHLISQNPYHIPPLSPKSFV-KSICKKNLSEERFEEHSVSPE
Glires TELITANKHGISQNPYHMPPLSPKSFV-KTKCKKNLSEERFEEHSVSPE
Sciurus_Glaucomys TKLITADKHGISQNPYHMPPLSPKSFV-KTKCKKNLSEERFEEHSVSPE
Aplodontia_SG TKLITADKHGISQNPYHMPPLSPKSFV-KTKCKKNLSEERFEEHSVSPE
ASG_Graphiurus TELITADKHGISQNPYHMPPLSPKSFV-KTKCKKNLSEERFEEHSVSPE
Hystrix_OMMR TELITADKHGISQNPYHMPPLSPKSFV-KTKCKKNLSEERFEEHSVSPE
Pedetes_OMMR TELSTADKHGISQNPYHMPPLSPKSFV-KTKCKKNLSEERFEEHSVSPE
Mus_Rattus NGLSTTGKSGISQNSHFQSVSPKSFV-KTDNRKTLTEGRFEKHTLSTE
Meriones_MR NELSTAGKPGISQNSHLKQSVSPKSFV-KTDHRKTLSEGRFEKHTLSTE
Oryzomys_MMR NELSTAGKPGISQNSHLKQSVSPKSFV-KTDHRKTLSEGRFEKHTLSTE
Tenrec_Echinops SDPSTSVHEHGILQTEHTPPLSPKSFV-KSKCKEKLSEERLEDAESLE
Wombat CEHIAGNNQGISQVPDQKPSVSPARSSASKTINTKNLLEERLDEQTTTCPE

| | | |
|------------------------|--|------|
| Phascogale | CEPIAEINQGISQVPDQNQSVSPARSSDSKTIYAKNFLEERLDEQTTTCPE | |
| Echymipera | CEYIAGKKQGISQVPNQKQSVSPTRSSVSK-IYTKNLLKDRL-EQTTTCPE | |
| Shrew_Opossum | CDHSAENNKGISQVPDQKQSVSPAKSSAGRSIYTKSLLEERLDEQTTTCPE | |
| Red_Kangaroo | ----- | |
| Wallaroo | ----- | |
| Tree_Kangaroo | ----- | |
| Possum | ----- | |
| | 1012 | 1060 |
| HPG | REMGNENI-PSTVSTISRNNIRENVFKEASSSNINEVGSSTNEVGSSSINE | |
| Great_Apes | REMGNENI-PSTVSTISRNNIRENVFKEASSSNINEVGSSTNEVGSSSINE | |
| OWMonkeys | RAMGNENIIPSTVSTISHNNIRENAFKEASSSNINEVGSSTNEVGSSSINE | |
| Monkeys | RAMGNENIIPSTVSTISHNNIRENAFKEASSSNINEVGSSTNEVGSSSINE | |
| Primates | RAMGNENIIPSTVSTISQNNIRESAFKEASSSNINEVGSSTNEVGSSSINE | |
| '+Tupaia' | RAMGNESI IQSTVSTISQNNIRESAFKEASSSNINEVGSSTNEVGSSSINE | |
| Tamadua_Bradypus | RAVGNENI IQSTVSTISQNNIRESAFKEASSSNINEVGSSTNEVGSSSINE | |
| Armadillos | RTVGNENI IQSTVSTISHNNIRENAFKEASSSSI-----NE | |
| EuarchLauraXen | RAMGNESI IQSTVSTISQNNIRESAFKEASSSNINEVGSSTNEVGSSSINE | |
| Elephants | RAMRNENVIQSTVSTV SQNNIRESAFKEASSSSI-----NEVCSSSINE | |
| Hyraxes | RTTGNETIVQSTVSTVSGQDNIRGSASKETSSSSI-----NE | |
| Sirenia | RAVGNESIVQSTVSTV SQNNIRESAFKEASSSSI-----NEVGSSVNE | |
| TE_Amblysomus | RAMGNESI IQSTVSTV SQNNIRESAFKEASSSSI-----NEVGSSSINE | |
| Macroscelidae | RAMGNESI IHSTVSTV SQNNIRGSFAFKEASSSNINEVGSSTNEVGSSSINE | |
| Orycteropus_TEAM | RAMGNESI IQSTVSTV SQNNIRESAFKEASSSNINEVGSSTNEVGSSSINE | |
| '+Cynocephalus' | RAMGNESI IQSTVSTISQNNIRESAFKEASSSNINEVGSSTNEVGSSSINE | |
| Myotis_Tadarida | RAMGNENI-QSTVSPISLNNIRESTFKEGSSSST-----NEVGSSSINE | |
| Taphozous_Tonatia | RAMGNENI IQSTVSTISQNNIRESAVKEGSSSST-----NEVGSSSINE | |
| Pteropus_Cynopterus | RAIGNETIIQSTVGTISQNNIRESTFKEGSSSIIYEAGSSTNELGSSVNE | |
| Megaderma_Hipposideros | RAMGNESI IQSTVSTISQNNIRESTFKEGSSSNIYEADSSTNEVGSSSINE | |
| Manis_C | RAVGNESI IQSTVSTISQNNIRESTFKEVSSSINEVGSSTNEVGSSSINE | |
| Carnivores | RAMENESI IQSTVSTISQNNIRESTFKEVSSSINEVGSSTNEVGSSSINE | |
| Cetacea | RAMGNESI IQSTVSTISQNNIRESTFKEVSSSINEVGSSTNEVGSSSINE | |
| BHC | RAMGNESI IQSTVSTISQNNIRESTFKEVSSSINEVGSSTNEVGSSSINE | |
| Sus_BHC | RAMGNESI IQSTVSTISQNNIRESTFKEVSSSINEVGSSTNEVGSSSINE | |
| Perissodactyla | RAMGNESI IQSTVSTISQNNIRESTFKEVSSSINEVGSSTNEVGSSSINE | |
| Insectivores | RAMGNESI IQSTVSTISQNNIRESAFKEVSSSINEVGSSTNEVGSSSINE | |
| Glires | RAMGNESI IQSTVSTISQNNIRESAFKEASSSNINEVGSSTNEVGSSSINE | |
| Sciurus_Glaucomys | KAVGYKRI IQSTVSTISQNNIRQSAFKEANSGSINEVGSSTNEVGSSSINE | |
| Aplodontia_SG | KAVGYKRI IQSTVSTISQNNIRESAFKEANSGSINEVGSSTNEVGSSSINE | |
| ASG_Graphiurus | KAVGYERI IQSTVSTISQNNIRESAFKEANSGSINEVGSSTNEVGSSSINE | |
| Hystrix_OMMR | KAMGNESI IQSTVSTISQNNIRESAFKEASSGSINEVGSSTNEVGSSSINE | |
| Pedetes_OMMR | KAMGNESI IQSTVYTI SQNNIRESAFKEASSGSINEVGSSTNEVGSSSINE | |
| Mus_Rattus | RAMGNETVVQSTVHTISLNN-RGNACQEASSGSI-----NE | |
| Meriones_MR | RAMGNETVVQSTVHTISQNN-RGNACQEASSGSI-----NE | |
| Oryzomys_MMR | RAMGNETVVQSTVHTISQNN-RENACQEASSGSI-----NE | |
| Tenrec_Echinops | RASGNESI IQSTVSTISQNTLRENAFKGTSSSSL-----NE | |
| Wombat | TAMGNESLAQSSLSPVSQNSREYISKATDLNRF-----IS | |
| Phascogale | TTMGNESLAQSSISLVSQNSREYVSNPIDL--I-----IS | |
| Echymipera | TVMGNESLQSSLSPVSQNSREYISKATDLNRF-----IS | |
| Shrew_Opossum | TVMGNESLVHSSLSLVSQNSGEYISKATDSNRF-----VG | |
| Red_Kangaroo | ----- | |
| Wallaroo | ----- | |
| Tree_Kangaroo | ----- | |
| Possum | ----- | |
| | 1061 | 1120 |
| HPG | VGSSDENIQAELGRNRGPKLNAMLRGLVLPQPEVYKQSLPGSNCKHPEIKK | |
| Great_Apes | VGSSDENIQAELGRNRGPKLNAMLRGLVLPQPEVYKQSLPGSNCKHPEIKK | |
| OWMonkeys | VGSSDENIQAELGRNRGPKLNAMLRGLLQPEVYKQSLPISNCKHPEIKK | |

| | |
|------------------------|--|
| Monkeys | VGSSDENIQAE LGRNRGPKLNAMLRLGLLQPEVYKQSLPISNCKHPEIKK |
| Primates | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPISNCKHPEIKR |
| '+Tupaia' | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPISNCKHPEIKR |
| Tamadua_Bradypus | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPITNCKHPEIKK |
| Armadillos | VGSSGENIQAE LGRNRAPKLNAMLRLGLMQPEVYKQSLPITNCKHPEIKR |
| EuarchLauraXen | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPISNCKHPEIKR |
| Elephants | VGSSGENIQAE LSRKRGPKNLAVLRLGLMQPEVYKQSLPISDCKHPGIKT |
| Hyraxes | VGSSSENIQAE LSRNREPRLNAVLRLGLVMQPEVYKQSLSISNCKQPEIKK |
| Sirenia | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPVSNCKHPEIKR |
| TE_Amblysomus | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPISNCKHPEIKR |
| Macroscelidae | VGSSGENIQAE LDRNRGPELNAVLRLGLMQPEVYKQSLPTSINCKHPEIKR |
| Orycteropus_TEAM | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPISNCKHPEIKR |
| '+Cynocephalus' | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPISNCKHPEIKR |
| Myotis_Tadarida | VGSSGENIQAE LGRNRGSKLNAMLRLGLMQPEVYKPSLPVSNCKHPEIKR |
| Taphozous_Tonatia | VGSSGENIQAE LGRNRGSKLNAMLRLGLMQPEVYKPSLPVSNCKHPEIKR |
| Pteropus_Cynoapterus | VGSSGENIQAE LSRNRGPKLNAMLRLGLMQPEVYKQSLPLSNCKHPEIKR |
| Megaderma_Hipposideros | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPVSNCKHPEIKR |
| Manis_C | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPISNCKHPEIKR |
| Carnivores | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPISNCKHPKMKR |
| Cetacea | VGSSGENIQAE LDRNRGPKLSALLRLGLMQPEVYKQSLPVSNCQLPEIKR |
| BHC | VGSSGENIQAE LGRNRGPKLSALLRLGLMQPEVYKQSLPVSNCQHPEIKR |
| Sus_BHC | VGSSGENIQAE LGRNRGPKLSAMLRLGLMQPEVYKQSLPVSNCKHPEIKR |
| Perissodactyla | VGSSGENIQAE LGRNRGPKLNAILRLGLMQPEVYKQSLPISNCKHPEIKR |
| Insectivores | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPISNCKHPEIKR |
| Glires | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPISNCKHPEIKR |
| Sciurus_Glaucomys | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEACKQNLNLSNCKYPEIKR |
| Aplodontia_SG | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEACKQNLNLSNCKYPEIKR |
| ASG_Graphiurus | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEAYKQSLPVSNCKHPEIKR |
| Hystrix_OMMR | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVYKQSLPVSNCKHPEIKR |
| Pedetes_OMMR | VGSSGENIQAE LGRNRGPKLNAMLRLGLMQPEVCKQSLPVSNCKHPEIKR |
| Mus_Rattus | VCSTGENVQQLGRNRGPKVNTVPLDLMQPEVCKQSVVSD-KYLEIKK |
| Meriones_MR | VCSSGENVQQLGRNRGPKVNTVPLDLMQPEVCKQSVVSDYKYLEMCK |
| Oryzomys_MMR | VCSSGENVQQLGRNRGPKLNTVPLDLMQPEVCKQSLPVSDYKYLEMCK |
| Tenrec_Echinops | VGSSSENIQAE LARNREPKLDAVLRLGLVQPEVCKESLPIRKCKHPEVCR |
| Wombat | IGSSGEGSQAQKGENKESELNTQPKLKLVPQICQQSFPQDNCKESKRKG |
| Phascogale | VGSSGEGTQAEKSENKESELNTPPKLKLMPQVSQQTFFQNNCK----- |
| Echymipera | RDSSGEDSRAEKGIKESELNTPTKFKLVQPVCQLSFSQDNCKEPRKRG |
| Shrew_Opossum | VDSSGEGSQEKGKGENK---LN-----QSQVCQS----- |
| Red_Kangaroo | ----- |
| Wallaroo | ----- |
| Tree_Kangaroo | ----- |
| Possum | ----- |

1121

| | |
|------------------|--|
| HPG | QG-YEEVVQTVNTDFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Great_Apes | QG-YEEVVQTVNTDFSPCLISDNLEQPMGSSHASQVCSETPDD |
| OWMonkeys | QG-HEEVVQTVNTDFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Monkeys | QG-HEEVVQTVNTDFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Primates | QGENEGVVQAVNTDFSPCLISDNLEQPMGSSHASQVCSETPDD |
| '+Tupaia' | QGENEGVVQAVNTDFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Tamadua_Bradypus | QGENEEVVQAVNTDFSPCLISDNLELPMGSSHASQICSETPDD |
| Armadillos | QGENEEAIQAVDNTDFSPCLISDNLELPMGNSHASQICSETPDD |
| EuarchLauraXen | QGENEGVVQAVNTDFSPCLISDNLEQPMGSSHASQICSETPDD |
| Elephants | QGENEGVVQAVNTDFSPCLISDNLEQPVGTSRASQVCSETPDD |
| Hyraxes | QGENEGVVQAVSTDFSAQPISENLEQPVRSSTHSQVCSQTPDN |
| Sirenia | QGENEGVVQAVNMDFSPLISDNLEQPMGSSRASQICSETPDD |
| TE_Amblysomus | QGDNEGVVQAVNPDFSPCLISDNLEQPMGSSHASQICSETPDD |
| Macroscelidae | PGENEGVIQAVNPDFSPCLISDNLEQPMGSSHASQICSETPDD |

| | |
|------------------------|---|
| Orycteropus_TEAM | QGENEGVVQAVNTDFSPCLISDNLEQPMGSSHASQICSETPDD |
| '+Cynocephalus' | QGENEGVVQAVNTDFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Myotis_Tadarida | QGENEGVVQAVNADFSPCQISDNLEQPMGSSPASQVCSETPDD |
| Taphozous_Tonatia | QGENEGVVQAVNADFSPCQISDNLEQPMGSSPASQVCSETPDD |
| Pteropus_Cynopterus | QGENEGVVQAVNADVSPRQISDNLEQPMGNSNASQVCSETPDD |
| Megaderma_Hipposideros | QGENEGVVQAVNADFSPCQISDNLEQPMGSSHASQVCSETPDD |
| Manis_C | QGENEGVVQAVNADFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Carnivores | QGENEGVVQSVNADFSPCLISDNLEQPMGSSRASQVCSETPDD |
| Cetacea | QGENEGTLQAVNADFSPCLISDNLEQPMGRSHASQVCSETSDE |
| BHC | QGENEGILQAVNADFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Sus_BHC | QGENEGIFQAVNADFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Perissodactyla | QGENEGVVQAVNADFSPCLISDNLEQPMGSSCASQVCSETPDD |
| Insectivores | QGENEGVVQAVNTDFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Glires | QGENEGVVQAVNTDFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Sciurus_Glaucomys | QGE-EGVVQVNTDFSPCLISDDLEQPMGNSHVTQVCSETPDD |
| Aplodontia_SG | QGE-EGVVQVNTDFSPCLISDDLEQPMGNSHVTQVCSETPDD |
| ASG_Graphiurus | QGE-EGVVQAVNTDFSPCLISDNLEQPMGNSHASQVCSETPDD |
| Hystrix_OMMR | QGENEGVVQAVNTDFSPCLISDNLEQPMGSSHASQVCSETPDD |
| Pedetes_OMMR | QGENEGVVQAVDADFSPCLISDNLEQPMGSGHVSQVCSETPDD |
| Mus_Rattus | Q-E-EG---AVSADFSPCLFSDHLEQPMRSGKIFQVCSETPDD |
| Meriones_MR | Q-E-EG---AVGADFSPCLFSDHLEQPMRSGNIFQVCSETPDD |
| Oryzomys_MMR | Q-E-EG---AVDADFSPCLFSDNLEQPMGSGNIFQVCSETPDD |
| Tenrec_Echinops | QKGNGLVPAVNPDFSRYLMSHNPEQPMESNH-SQICSETPED |
| Wombat | KGGNGKLAQAISTDSSPCL----- |
| Phascogale | ----- |
| Echymipera | KGGNGILALATSTDSSPCL----- |
| Shrew_Opossum | ----- |
| Red_Kangaroo | ----- |
| Wallaroo | ----- |
| Tree_Kangaroo | ----- |
| Possum | ----- |