

HPG SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQHNRWAGSKETCNDR
 Great_Apes SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQHNRWAGSKETCNDR
 OWMonkeys SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQHNRWAGSKETCNDR
 Monkeys SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQHNRWAGSKETCNDR
 Primates SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 '+Tupaia' SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Tamadua_Bradypus SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Armadillos LLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARRQQRWAESKETCNDR
 EuarchLauraXen SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Elephants SLQHKNSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Hyraxes SLQHENSLLLLTKDRMDVEKAAEFCNKSQKQPLARSQQRWAESTETCNDR
 Sirenia SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 TE_Amblysomus SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDK
 Macroscelidae SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Orycteropus_TEAM SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 '+Cynocephalus' SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Myotis_Tadarida SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Taphozous_Tonatia SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Pteropus_Cynopterus SLQHENSLLLYTKDRMNVEKTDFCNKSQKQPLARSQQRWVETKETCNDR
 Megaderma_Hipposideros SLQHENSLLLLTEDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Manis_C SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Carnivores SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Cetacea SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLAKSQQSRWAESKDTCNDR
 BHC SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLAKSQQSRWAESKDTCNDR
 Sus_BHC SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLAKSQQSRWAESKDTCNDR
 Perissodactyla SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLAKSQQSRWAESKETCNDR
 Insectivores SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Glires SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Sciurus_Glaucomys SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAKSKETCNDR
 Aplodontia_SG SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAKSKETCNDR
 ASG_Graphiurus SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Hystrix_OMMR SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Pedetes_OMMR SLQHENSLLLLTKDRMNVEKAAEFCNKSQKQPLARSQQRWAESKETCNDR
 Mus_Rattus SLQHETSLLLLTEDRMNAEKAAEFCNKSQKQSGVAVSQQSRWAESKETCNDR
 Meriones_MR SLQHENSLLLLTEDRMNVEKAAEFCNKSQKQSGLARSQQRWAESKETCNDR
 Oryzomys_MMR SLQHENSLLLLTEDRMNVEKAAEFCNKSQKQSGLARSQQRWAESKETCNDR
 Tenrec_Echinops SLQRENCSSLLLTkdrlNVEKAGFCNESKQKQPLARSQHNRWAGSKETCNDK
 Wombat SLLPKTSSLLPNTDRMNVEKAELCHKNKQPALGRNQESSLDESKEICSPG
 Phascogale SLLPETSSLLPNTDRMS-EKAELSNKSQKQSGLARNQQSRLDESKEICSTG
 Echymipera SLMLETSSLLSNIDRMTTKAELCNKSQKQPLARNQQDCLGESKEISSTV
 Shrew_Opossum SLLPEITSSLLPNTDRMNVEKAELCNKSQKQPLASNQQSNLDESKEICCSAS
 Red_Kangaroo SLLPETSSLLPNTDRMNVEKAELCNKSQKQPLAKNQSSLDESKEICCSAG
 Wallaroo SLLPETSSLLPNTDRMNVEKAELCNKSQKQPLAKNQSSLDESKEICCSAG
 Tree_Kangaroo SLLPETSSLLPNTFQMNVEKAELCNKSQKQPLAKNQSSLDESKEICCSAG
 Possum SLLPDITSSVLPNTDSMNVEKAELCDKSKRPDLAWSQQISQDESKEKCIAG
 Gallus SPLKNDTSSFLKNAEEMDVEETQCSHKNQELDLDESSEGRDLKIKEKDICV

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332

EQFPNDHHCSFKQNIADAEQNKRNQHCNVFPFAPMGKSNLDE-KETVETD

379

HPG RTPSTEKKVDLNADPLCERKEWNKQKLPCCSENPRDTE--VPWITLNSSI
Great_Apes QTPSTEKKVDLNADPLCERKEWNKQKLPCCSENPRDTE--VPWITLNSSI
OWMonkeys QTPSTEKKVDLNADPLYERKEWNKQKLPCCSENPRDTE--VPWITLNSSI
Monkeys QTPSTEKKVDLNADPLYGRKEWNKQKPPCCSENPRDTE--VPWITLNSSI
Primates QTPSTEKKVDLNADPLYGRKERNKQKPPCCSENPRDTQD--VPWITLNSSI
'+Tupaia' QTPSTEKKVDLNADPLYGRKERNKQKPPCCSESPRDTQD--VPWITLNSSI
Tamadua_Bradypus QTPSTEKKVDVDADPLYGRKELNKQKPPCCSESPRDTQD--IPWITLNSSI
Armadillos QTPSTEKKVDVDADPLYGRKELNKQKPPCCSESPRDTQD--IPWITLNSSI
EuarchLauraXen QTPSTEKKVDLNADPLYGRKELNKQKPPCCSESPRDTQD--IPWITLNSSI
Elephants QTPSTEKKVDVNADPLYERKEVKNKQKPPRSENLRDTQD--IPWITLNSSI
Hyraxes QILRTEKKVDTNADPLYGKKEGNKQKPPCCSESRDTQD--IPWITLNSSI
Sirenia QTPSTEKKVDMNANPLYERKEVKNKQKPPCCSESVRDTQD--IPWITLNSSI
TE_Amblysomus QTPSTEKKVDMNADPLYGRKEVKNKQKPPCCSESPRDTQD--IPWITLNSSI
Macroscelidae QTPSTEKKVDMNADPFYGRKEVKNKQKSPCCSESPKDTQD--IPWITLNSSI
Orycteropus_TEAM QTPSTEKKVDMNADPLYGRKEVKNKQKPPCCSESPRDTQD--IPWITLNSSI
'+Cynocephalus' QTPSTEKKVDLNADPLYGRKERNKQKPPCCSESPRDTQD--VPWITLNSSI
Myotis_Tadarida QTPSTEKRVVLNADPLNGRKE-----PPCSDYPRDSQD--VPWITRSSSI
Taphozous_Tonatia QTPSTEKRVVLNADPLNGRKE-----PPCSDCPRDSQD--VPWITRNSSI
Pteropus_Cynopterus QTSSTEKKVVLNADPLNGRIELNKQKPPCCSDSPRDSQD--IPWITRNSSI
Megaderma_Hipposideros QTPSTEKKVVLNADPLNGRKEVKNKQKPPCCSDSPRDSQD--VPWITRNSSI
Manis_C QTPSTEKKVVLNADPLCGRKELNKQKPPCCSDSPRDSQD--VPWITLNSSI
Carnivores QTPSTEKKVVLNADPLCGRKELNKQKPPCCSDSPRDSQD--VPWITLNSSI
Cetacea QTPSTEKKVVLNADPLYGRKELNKQKPPCCSDSPRDSQD--FPWITVNSSI
BHC QTPSTEKKVVLNADPLYGRKELNKQKPPCCSDSPRDSQD--VPWITLNSSI
Sus_BHC QTPSTEKKVVLNADPLYGRKELNKQKPPCCSDSPRDSQD--VPWITLNSSI
Perissodactyla QTPNSEKKLVVLNADPLYGRKELNKQKPPCCSDSPRDSQD--VPWITLNSSI
Insectivores QTPSPEKKVDLNADPLYGRKELNKQKPPCCSDSPRDSQD--VPWITLNSSI
Glires QTPSTEKKVDLNADPLYGRKERNKQKPPCCSENPRDTQD--VPWITLNSSI
Sciurus_Glaucomys QTPSTEKKVDLNADPOYERKEPSKQKPPCCSENSRDTQD--VPWITLNSSI
Aplodontia_SG QTPSTEKKVDLNADPLYERKEPSKQKPPCCSENPRDTQD--VPWITLNSSI
ASG_Graphiurus QTPSTEKKVDLNADPLYGRKERNKQKPPCCSENPRDTQD--VPWITLNSSI
Hystrix_OMMR QTPSTEKKVDLNADPLYGRKERNKQKPPCCSENPRDTQD--VPWITLNSSI
Pedetes_OMMR QTPSTEKKVDLNADPLYGRKERNKQKPPCCSENPRDTQD--VPWITLNSSI
Mus_Rattus QVPSTEEKVDPNADSLCGRKKWNNHPKSLCPENSGATD--VPWITLNSSI
Meriones_MR QIPSTEKKVDPNADSLCGRKKWNNQKSLCPENSGATQD--VPWITLNSSI
Oryzomys_MMR QIPSTEKKVDLNADSLCGRKKWNNQKSLCPENSRATQD--VPWITLNSSI
Tenrec_Echinops PTPSTEKKVDMNADPVHGRKGVPKQKPPCHESPRKSHD--VPWKTRKSSI
Wombat KTPGACERHELNDHHLCEQGLE-EKPQHPEPRGNPQNCLSGTKLKSSI
Phascogale KTPSVGEQPELNAHHLCEKQELK-EKPQGEPRGNPQNCLSGTKLKSSI
Echymipera KTPAAGEQHKLNAHHLCEKQELE-VKSQHPEPRGNPQNCLSGTKLKSSI
Shrew_Opossum KTPGAEEQPELNAHHLCEKQELE-EKLQCPESPRGDSGDCLSGTKVKNSI
Red_Kangaroo KTLGA---HELNAHHP CERKELE-DEPQHPEPRGNPQNCLSGTKLKSSI
Wallaroo KTLGA---HELNAHHP CERKELE-DEPQHPEPRGNPQNCLSGTKLKSSI
Tree_Kangaroo KTLGA---HELNAHHP CERKELE-DEPQHPEPRGNPQNCLSGTKLKSSI
Possum KTSDAKELHELNAHHL YERQELE-EQPECPNYPRGNPQNCLSGTKLK-SI
Gallus PSVEDVEMCEPMDDSLLE-KEPPVEKPLQPKIPHCPPTLNEVSTKGLNQSI

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380

FDNQHNDSNPENNDPLG-----KVTKLMRR-ST

427

HPG QKVNEWFSRSDELLGSDDSHDGGSESNAKVADVLDV--LNEVDEYSGSSE
Great_Apes QKVNEWFSRSDELLGSDDSHDGGSESNAKVADVLDV--LNEVDEYSGSSE
OWMonkeys QKVNEWFSRSDELLSSDDSHDGGSESNAKVADVLDV--LNEVDEYSGSSE
Monkeys QKVNEWFSRSDELLTSDDSHDGGSESNAKVADALEV--LNEVDGYSGSSE
Primates QKVNEWFSRSDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE
'+Tupaia' QKVNEWFSRSDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE
Tamadua_Bradypus QKVNEWFSRSDDILTSDDSHNGGSESNAEVAGALKV--PNEVDGYSGSSE
Armadillos QKVNEWFSRSDDILTSDDSHDGGSESNAEVAGALKV--PNEVDGYSSSSE
EuarchLauraXen QKVNEWFSRSDDMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE
Elephants QKVNEWFFRSDGL---DVLNDEGPESAEVAGALEV--PNEVH--SNSSE
Hyraxes QKVNEWFSRSDNL---SDSPSEGSELNGKVAGPVKL--PGEVHRYSSFPE
Sirenia QKVNEWFFRSDGL---DDLHDKGSESNAEVAGALEV--PEEVHGYSSSSE
TE_Amblysomus QKVNEWFSRSDGL---DDSHDEGSESNAEVAGAFEV--PNEVHGYSSSSE
Macroscelidae QKVNEWFSRSDGL---DDSHDEGSESNAAIAGALEV--PNEVHGYSSSSE
Orycteropus_TEAM QKVNEWFSRSDGL---DDSHDEGSESNAEVAGALEV--PNEVHGYSSSSE
'+Cynocephalus' QKVNEWFSRSDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE
Myotis_Tadarida QKVNEWFSRRDEILTSDGSHNGRSESNAEVAGAVEV--PNEVDGYSGSPE
Taphozous_Tonatia QKVNEWFSRRDEILTSDGSHDGRSESNTAVAGAVEV--PNEVDGYSGSPE
Pteropus_Cynopterus QKVNEWFSRRDEILTSDVSPDGRSESN-----VVEV--PNEVDGYSGASE
Megaderma_Hipposideros QKVNEWFSRRDEILTSHGSHDGRAESNTAVAGAVEV--PNEVDGYSGSSE
Manis_C QKVNEWFSRSDEMLTSDDSHDGGSESNTAVAGAVEV--PNEVDGYSGSSE
Carnivores QKVNEWFSRSDEMLTSDDSHDGGSESNTAVAGAVEV--PNEVDGYSGSSE
Cetacea QKVNEWFSRSDEMLTSNDSRDGGFESNTAVACAVEV--PKEVDGYLGSSE
BHC QKVNEWFSRSDEMLTSDDSRDGGSESNTAVAGAVEV--PNEVDGYLGSSE
Sus_BHC QKVNEWFSRSDEMLTSDDSHDGGSESNTAVAGAVEV--PNEVDGYLGSSE
Perissodactyla QKVNEWFSRSDEMLTSDDSHDGGPESNTAVAGAVEV--PNEVDGYSGSSE
Insectivores QKVNEWFSRSDEMLTSDDSHDGGSESNTAVAGAVEV--PNAVDGFGSGSSE
Glires QKVNEWFSRSDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE
Sciurus_Glaucomys RKVNEWFSRSDEMLTSDDSDGGSESNAEVAGVLEI--PNEVDGFGSGSSE
Aplodontia_SG QKVNEWFSRSDEMLTSDDSHDGGSESNAEVAGVLEI--PNEVDGFGSGSSE
ASG_Graphiurus QKVNEWFSRSDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE
Hystrix_OMMR QKVNEWFSRSDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE
Pedetes_OMMR QKVNEWFSRSDEMLTSDDSHDGGSESNAEVAGALEV--PNEVDGYSGSSE
Mus_Rattus QKVNEWFSRTGEMLTSDSASDRRPASNAEAAVVLEV--SNEVDGCFSSSK
Meriones_MR QKVNEWFSRTGEMLTSDSASDRRPASNAEAAVALEV--SNEVDGCFSSSK
Oryzomys_MMR QKVNEWFSRTGEMLTSDGASDRRPESNAEAAVALEV--SNEVDGCSSSSK
Tenrec_Echinops WKVNEWFSKSDGL---GDSDERPESDADVAGAFEV--PDEARESSSSPE
Wombat QKVNEWLSRSSDILASDNSNGRSHEQSAEVPSALEDGHPDPTAEGNSSVSE
Phascogale QKVNEWLSRSNDILASDCSLDKNHKQNAEIASALEDGHPDNSDGNSSISE
Echymipera QKVSEWLSRSNDILNSDYSHERSQEQNAEIAIALEDGHLNTADGNSSISE
Shrew_Opossum QKVNEWLFRSNDVLPDYSSVRSHEQNAEATNALEYGHVET-DGNSSISE
Red_Kangaroo QKVNEWLSRSNDILTSDNSCSRNEQNVEMPSALEDGYPDTADGNSSISE
Wallaroo QKVNEWLSRSNDILTSDNSYSRNEQNVEMPSALEDGYPDTADANSNISE
Tree_Kangaroo QKVNEWLSRSNDILISDNSYSRNEQNVEMPSALEDGYPDTADGNSSISE
Possum QKVNDWLSKSNLILVSDYSSGRIHEQNAEMDSVLEDGHPDVTADGNSSISG
Gallus QKVNEWFSKSSRILSSSSSQND-HAEATDASG---EGDISLSDKDCISE

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428

ERVNEWLLKTNQDFSTLSAEE-----PILDALALQNKETS DKRSCSSD

473

HPG KIDLLAS-DPHEALICKSERVHKS SVESN-IEDKIFGKTY--RRKASLPN
Great_Apes KIDLLAS-DPHEALICKSERVHKS SVESN-IEDKIFGKTY--RRKASLPN
OWMonkeys KIDLLAS-DPHEPLICKSERVHKS SVESN-IEDKIFGKTY--RRKASLPN
Monkeys KIDLLAS-DPHDPLICKSERVHKS SVESN-IEDKIFGKTY--RRKASLPN
Primates KIDLLAS-DPHDPLICKSERVHSKP VESN-IEDKIFGKTY--RRKASLPN
'+Tupaia' KIDLMAS-DPHDALICKSERVHSKP VESN-IEDKIFGKTY--RRKASLPN
Tamadua_Bradypus KIDLIAS-DPHNALIFASERVQSKP TESN-IEDKIFGKTY--HRKASLPN
Armadillos KIDLMAS-DPHNALIFASERVQSKP AESN- IKDKIFGKTY--HRKASLPN
EuarchLauraXen KIDLMAS-DPHDALICESERVHSKP AESN- IEDKIFGKTY--RRKASLPN
Elephants KIDLMAS-DLHGALICESERVPSK P AESN- IEDKIFGKTY--RRKAGISH
Hyraxes NIDLMAS-GPPGD LICESERIPCKP P KSN- IKDKIFGKTY--QRKGS LPH
Sirenia KIDLMAS-DPHSALICESERVLSK P AESN- IEDKIFGKTY--RRKAILPH
TE_Amblysomus KIDLMAS-DPHDALICESERVLSK P AESN- IEDKIFGKTY--RRKASLPN
Macroscelidae KIDLMAS-DPHDASICESERVLSK P AENN- IEDKIFGKTY--RRKASLPN
Orycteropus_TEAM KIDLMAS-DPHDALICESERVLSK P AESN- IEDKIFGKTY--RRKASLPN
'+Cynocephalus' KIDLMAS-DPHDALICKSERVHSKP VESN- IEDKIFGKTY--RRKASLPN
Myotis_Tadarida KIALMAS-DPHGALICESERVHSKP VESN- IEDKIFGKTY--RRKASLPN
Taphozous_Tonatia KIALMAS-DPHGALICESERVHSKP VESN- IEDKIFGKTY--RRKASLPN
Pteropus_Cynopterus KIALKAS-DPHGALIC--ERVHSKL VESN- IEDKIFGKTY--RRKASLPN
Megaderma_Hipposideros KIALMAS-DPHGALICESERVHSKP VESN- IEDKIFGKTY--RRKASLPN
Manis_C KIDLMAS-DPHDALICESERVHSKP VESN- IEDKIFGKTY--RRKASLPN
Carnivores KIDLMAS-DPHDALICESERVHTK P VESN- IEDKIFGKTY--RRKASLPN
Cetacea KIDLMAS-DPHGALIRESERVHSKP VESN- IEDKIFGKTY--RRKASLPN
BHC KIDLMAS-DPHGALIRESERVHSKP VESN- IEDKIFGKTY--RRKASLPN
Sus_BHC KIDLMAS-DPHGALIRESERVHSKP VESN- IEDKIFGKTY--RRKASLPN
Perissodactyla KIDLMAS-DPPGALICESERVHSKP VENN- IEDKIFGKTY--RRKASLPN
Insectivores KIDLMAS-DPHGALICESERVHSKP VESN- IEDKIFGKTY--RRKASLPN
Glires KIDLLAS-DPHNALICKSERVHSKP VESN- IEDKIFGKTY--RRKASLPN
Sciurus_Glaucomys KIDLLAT-DPHNALISKCERVCSKAVESN- IEDKIFGKTY--RRKASLPN
Aplodontia_SG KIDLLAT-DPHNALISKCERVCSKAVESN- IEDKIFGKTY--RRKASLPN
ASG_Graphiurus KIDLLAS-DPHNALICKSERVCSK P VESN- IEDKIFGKTY--RRKASLPN
Hystrix_OMMR KIDLLAS-DPHNALICKSERVCSK P VESN- IEDKIFGKTY--RRKASLPN
Pedetes_OMMR KIDLLAS-DPHNALICKSERVCSK P VESN- IEDKIFGKTY--RRKASLPN
Mus_Rattus KTDLVAP-DPHNALMCKSGRDFSKP VENN- INDKIFGKTY--QRKGS RPH
Meriones_MR KTDLVAP-DPHNALMCKSERDFSKP VENN- IKDKIFGKTY--QRKGS LPH
Oryzomys_MMR KTDLVAT-DPHNALMCKSERDCSKP VENN- IKDKIFGKTY--QRKGS LPH
Tenrec_Echinops KTDLMAS-DPHVPLLHKSERVLSK P VESN- IEDKIFGKTY--RRKSS LLN
Wombat KTDPVAD-STDDAWLHVPKRSLRPAENN- IEDKIFGKTY--RRKSGHPN
Phascogale KTDVVAD-TADGAWLHVPKRTYTRPAENNNIKDKIFGKTY--RRKSGHPN
Echymipera KT-LVA--TTD-----VLETS-SRPAKSN- IEDKIFGKTY--RRKS-HSN
Shrew_Opossum KTD MVAD-STDGSWLHAPEKNCPRPAESNNIEDKIFGKTY--RRKSVHPV
Red_Kangaroo KTDPVAD-ITYDPWPHVPERSCPRPAENNNIEDKIFGKTY--RRKSGHPH
Wallaroo KTDPVAD-ITYDPWPHVPERSCPRPAENNNIEDKIFGKTY--RRKSGHSH
Tree_Kangaroo KTDPVADNNTYDPWPHVPERSCPRPAENNNIEDKIFGKTY--RRKSGHPH
Possum KTDLVAD-STDGAWLHMSERSCSRKAESNNIEDKIFGKTY--HRKSVHIN
Gallus KTNPIVD-SVEFAVIERNKRWTQTTYS--IEDKIFGKTY--ERGRK-SN

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474

DSELMVPV-LHKHAEKGISGGGFDKPAVG--VKDKIFCKVYKRERKAMPPN

518

HPG LSHVTENLII--GAFV---TEPQIIQERPLTNKLRKRRTSGLHPEDFI
Great_Apes LSHVTENLII--GAFV---TEPQIIQERPLTNKLRKRRTSGLHPEDFI
OWMonkeys LSHVTENLII--GAFV---TEPQIIQERPLTNKLRKRRTSGLHPEDFI
Monkeys LSHVTENLII--GAFV---TEPQIIQERPLTNKLRKRRTSGLHPEDFI
Primates LSHVTENLII--GAFV---TEPQIIQERPLTNKLRKRRTSGLHPEDFI
'+Tupaia' LSHVTEDLII--GAFV---TEPQITQERPLTNKLRKRRTSGLHPEDFI
Tamadua_Bradypus LSHIAEDLFI--GAIA---TEPKITQEHPLTNKIKRKRRTSGLHPEDFI
Armadillos LSHITEDLFI--GAIA---TEPKITQEHSLTNKIKRKRRTSGLHPEDFI
EuarchLauraXen LSHVTEDLII--GAVA---TEPQITQERPLTNKLRKRRTSGLHPEDFI
Elephants LSHITEDLIM--GAIA---SEPQIAREHPFTNKLKRKR--TSGLHPEDFI
Hyraxes LSHITEDLVK--GAIA---TOPQIAREHPLTNKLQHKRR--TSGLHPEDFI
Sirenia LSHVTEDLII--GAVA---TEPQIAQERPLTNKLRKR--TSGLHPEDFI
TE_Amblysomus LSHVTEDLMI--GAVA---TEPQIAQERPLTNKLRKR--TSGLHPEDFI
Macroscelidae LSHVTQDLII--GAVA---TEPQTAQERPLTNKLRKR--TSGLHPEDFI
Orycteropus_TEAM LSHVTEDLII--GAVA---TEPQIAQERPLTNKLRKR--TSGLHPEDFI
'+Cynocephalus' LSHVTEDLII--GAFV---TEPQITQERPLTNKLRKRRTSGLHPEDFI
Myotis_Tadarida LSHITENLII--GASA---IEPQITQECPLTNKLRKRRTSGLHPEDFI
Taphozous_Tonatia LSHITENLII--GASA---IEPQITQECPLTNKLRKRRTSGLHPEDFI
Pteropus_Cynopterus LSHITENLIT--GASA---IEPQITQECPLTNKLRKRRTSGLHPEDFI
Megaderma_Hipposideros LSHITENLII--GASA---VEPQITQECPLTNKLRKRRTSGLHPEDFI
Manis_C LSHITEDLII--GASA---IEPQITQERPLTNKVRKRRTSGLHPEDFI
Carnivores LSHTTEDLII--GACA---IEPQITQAHPLTNKAKRKRRTSGLHPEDFI
Cetacea LSHIAENLII--GAST---VEPQITQERPLTNKLRKRRTSGLHPEDFI
BHC LSHIAEDLII--GASA---VEPQITQERPLTNKLRKRRTSGLHPEDFI
Sus_BHC LSHIAEDLII--GASA---VEPQITQERPLTNKLRKRRTSGLHPEDFI
Perissodactyla LSHITEDLII--GASA---IEPQITQERPLTNKLKHKRRTSGLHPEDFI
Insectivores LSHVTEDLII--GASA---TEPQITQERPLTNKLRKRRTSGLYPEDFI
Glires LSHVTEDLII--GAFV---TEPQITQERPLTNKLRKRRTSGLHPEDFI
Sciurus_Glaucomys LSHITENLII--GAFV---TEPQITQERPLTNKLRKRRTSGLHPEDFI
Aplodontia_SG LSHVTENLII--GAFV---TEPQITQERPLTNKLRKRRTSGLHPEDFI
ASG_Graphiurus LSHVTENLII--GAFV---TEPQITQERPLTNKLRKRRTSGLHPEDFI
Hystrix_OMMR LSHVTENLII--GAFV---TEPQITQERPLTNKLRKRRTSGLHPEDFI
Pedetes_OMMR LSHVTENLII--GAFV---TEPQITQERPLTNKLRKRRTSGLHPEDFI
Mus_Rattus LNHVTE--II--GTFT---TEPQITQEQPFTNKLKRKR--T-CLHPEDFI
Meriones_MR LNHVTE--II--GTFT---TEPQITQEQPFTNKLKRKR--T-CLHPEDFI
Oryzomys_MMR LNHVTE--II--GTFT---TEPQITQEHFPTNKLKRKR--T-CLHPEDFI
Tenrec_Echinops SSHVTEDLMV--GAAA---AVPPIAQEHLLTSKLRKR--SSVLHPEDFI
Wombat LNYVTENLFA--EAV-A--PDSLIPLEAPKNTRLKRKGRSIADLQPEDFI
Phascogale LNHITENLIV--ETV-V--PDSLVPPEPLKNTKLRKRRTICDLQPEDFI
Echymipera LNYLTENLLV--ETI-A--PDSLIPPEPLKNTKLRKRRTICDLQPEDFI
Shrew_Opossum LNYVTENLIV--ETI-A--PDSVIPPEPLKNTKLRKRRTICDLQPEDFI
Red_Kangaroo LNCMTENLFA--GAVVA--PDSLIPPEPKTTKLRKRRTISNLQPEDFI
Wallaroo LNCITENLFA--GAVVA--PDSLIPPEPKTTKLRKRRTISNLQPE---
Tree_Kangaroo LNCITENLFA--GAVVA--PDSLIPPEPKTTKLRKRRTISNLQPEDFI
Possum LNYVTENLIV--GAV-D--SDSLIPPEPVKTRLKRKRRTVSDLQP----
Gallus PSTILRDILP--ATKKEDAAEEGCLNNSRKDRLKRKRKSACILQPEDFI

Xenopus_Prot_FASTA

519

NITCVAEVHHD SALETG--KENMTLEYGTGMSHLMSKRKMVYSLNPENTS

563

HPG KKADLAV-QKTPEMINOQGTNQM---EQNGQVMNITNSGHENKTKGDSIQ-

Great_Apes KKADLAV-QKTPEMINOQGTNQM---EQNGQVMNITNSGHENKTKGDSIQ-

OWMonkeys KKADLAV-QKTPEMINOQGTNQM---EQNGQVMNITNSGHENKTKGDSIQ-

Monkeys KKADLAV-QKTPEKINQGTNQM---EQNGQVMNITNSGHENKTKGDSIQ-

Primates KKADLAVVQKTPEKINQGTNQM---EQNGQVMNITNSGHENETKGDYVQ-

'+Tupaia' KKADLAVVQKTPEKINQGTDOM---EQNGQVMNITNSGHENETKGDYVQ-

Tamadua_Bradypus KKVDLTVVQKTPEKINQGTDOM---EQNGQVMNIANS GHENETKGDYVQ-

Armadillos KKVDLTVVQKTPEKINQGTDOM---EQNDQVMNIANS GHENETKGDYVQ-

EuarchLauraXen KKVDLAVVQKTPEKINQGTDOM---EQNGQVMNIANS GHENETKGDYVQ-

Elephants KKVDLAVVQKIPEKINQETDHV---EQNGQVMNIANGGRENETKGDYVQ-

Hyraxes KKADLTVVQKASEKINQETDKV---EQSGQVINIANGGHENETKDDYVL-

Sirenia KKVDLAVVQKTPEKINQETDQV---EQNGQVMNIANGGHENETKDDYVQ-

TE_Amblysomus KKVDLAVVQKTPEKINQETDOM---EQNGQVKNIADGGHENETKGDYVQ-

Macroscelidae KKVDLTVVQKTPEKINQETDOM---EQNGQVKNIAGGGHENETKGDYVQ-

Orycteropus_TEAM KKVDLAVVQKTPEKINQETDOM---EQNGQVKNIADGGHENETKGDYVQ-

'+Cynocephalus' KKADLAVVQKTPEKINQGTDOM---EQNGQVMNITNSGHENETKGDYVQ-

Myotis_Tadarida KKVDLAVVQKTPEKIIIEGTDQI---EQNGHVMNITNNGHENETKGDYVQ-

Taphozous_Tonatia KKVDLAVVQKTPEKIIIEGTDQI---EQNGHVMNITNNGHENETKGDYVQ-

Pteropus_Cynopterus KKIDLAVVQKTPEKIIIEGTDQI---EQNGHVMNSTNNGHENETKGDYVQ-

Megaderma_Hipposideros KKVDLAVVQKTPEKIIIEGTDQI---EQNGHVMNITNNGHENETKGDYVQ-

Manis_C KKVDLAVVQKTPEKIIIEGTDQI---EQNGHVMNITNNGHENETKGDYVQ-

Carnivores KKVDLAVVQKTPEKIIIEGTDQI---EQNGHVMNITNNGPENETKGDYVQ-

Cetacea KKVDLAVIPKTPEKIIIEGTDQT---EQNGHGMNITSNGHETEMKGDYVQ-

BHC KKVDLAVVPKTPEKIIIEGTDQT---EQNGHGMNITSNGHENETKGDYVQ-

Sus_BHC KKVDLAVVPKTPEKIIIEGTDQT---EQNGHGMNITSNGHENETKGDYVQ-

Perissodactyla KKVDLAVVQKTPEKIIIEGTDQI---EQNGHVMNITNNGHENETKGDYVQ-

Insectivores KKVDLAVVQKTPEKIIIEGTDQM---EQNGQVMNIANNGHENETKGDYVQ-

Glires KKADLAVVQKTPEKINQGTDOM---EQNGQVMNITNSGHENETKGDYVQ-

Sciurus_Glaucomys KKTDLAVVQKTPEKINQGTDOM---EQNDQVMNITNSGQENETKVDYVQ-

Aplodontia_SG KKTDLTVVQKTPEKINQGTDOM---EQNDQVMNITNSGQENETKVDYVQ-

ASG_Graphiurus KKTDLTVVQKTPEKINQGTDOM---EQNDQVMNITNSGHENETKGDYVQ-

Hystrix_OMMR KKADLTVVQKTPEKINQGTDOM---EQNGQVMNITNSGHENETKGDYVQ-

Pedetes_OMMR KKADLTVVQKTPEKINQGTDOM---EQNGQVMNITNNGHENETKGDYVQ-

Mus_Rattus KKADLTVVQRTPENINQGTDOM---EPNDQAMSITSNGQENETTGNLDQ-

Meriones_MR KKADLTVVQKTPEKINQGTDOM---EPNDQAMSITSNGQENETKGNLDQ-

Oryzomys_MMR KKADLTVVQKTPEKINQGTDOM---EPNGQAMSITSNGQENETKGNLDQ-

Tenrec_Echinops KKADLAVVQKTPEKINQGTDOM---QPKQOVENIPDGGHGHGTKGDCVQ-

Wombat RKT DVPVIHKTPEKKNHSVDQILKREQSDQVMNTANSLPEQKALGGHVGE

Phascogale KKT-VPVTHKTPEKKNHHAADQTLEREQNDQVMNMDNGHPEQKALNGHVGE

Echymipera RKT DVPVSHKTPEKKNPAVDQILEREQNDQVMNTANGHLKQKALGDHVKE

Shrew_Opossum KKTNIPVIPKTPEKKNHPVDQILEKEQNGQVMSTADGQSKQKAPGCHVGE

Red_Kangaroo KRTDIPVVHKTPERKNHAVDQILEKEQND-----TANSHLEQKALDGHAGE

Wallaroo -----

Tree_Kangaroo -----

Possum -----

Gallus KKKDLEEADRCPOGIKSSLGDAE-----KEKCDE-NSAVKENPLLE-----

Xenopus_Prot_FASTA

564

KKNDLANINGSINVPDCISDAN-----LELED-KSEADSNSADA-----

609

HPG -NEKNPNPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPK---KN
Great_Apes -NEKNPNPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPK---KN
OWMonkeys -NEKNPNPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPK---KN
Monkeys -NEKNPNPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPK---KN
Primates -NEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHNSKAPK---KN
'+Tupaia' -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHNSKAPK---KN
Tamadua_Bradypus -KEKNANPTESLEKESAFRTKGEPISSSISNMELELNIYNSKASK---KN
Armadillos -KEKNANPTESLEKESAFRTKGEPISSSISNMELELNIYNSKASK---KN
EuarchLauraXen -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHNSKAPK---KN
Elephants -KEKNAIPTESLAKESAFRTKAEPISSSISNMELELNMHNSKAPK---KN
Hyraxes -KEKNGNPAESLKKESVFKTKAEPISNSISNMELELNTHNSKSLK---KN
Sirenia -KEKNANPTESLTKESAFRTKAEPISSSISNMELELNMHNSKAPK---KN
TE_Amblysomus -KEKNANPTESLAKESAFRTKAEPISSSISNMELELNMHNSKAPK---KN
Macroscelidae -KEKNANPTESLAKESAFRTKAEPISSSISNMELELNMHSSIAPK---KN
Orycteropus_TEAM -KEKNANPTESLAKESAFRTKAEPISSSISNMELELNMHNSKAPK---KN
'+Cynocephalus' -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHNSKAPK---KN
Myotis_Tadarida -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHSSKAPK---KN
Taphozous_Tonatia -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHSSKAPK---KN
Pteropus_Cynopterus -KKKNTNPTESLEKESAFRTKAEPICSSISNMELELNIHSSKALK---KN
Megaderma_Hipposideros -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHSSKAPK---KN
Manis_C -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHSSKAPK---KN
Carnivores -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNSHSSKAPK---KN
Cetacea -KEKNANLTESLEKESAFRTKAEPISSSISNMELELNIHSSKAPK----N
BHC -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHSSKAPK----N
Sus_BHC -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHSSKAPK----N
Perissodactyla -KEKNANPTESLEKESAFRTKAEPISSSISNLELELNIHSSKAPK---KN
Insectivores -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHSSKAPK---KN
Glires -KEKNANPTESLEKESAFRTKAEPISSSISNMELELNIHNSKAPK---KN
Sciurus_Glaucomys -KEKNANPVESLEKESAFRTKAEPISSSISNMELELNIHNSKAPK---KN
Aplodontia_SG -KEKNANPIESLEKESAFRTKAEPISSSISNMELELNIHNSKAPK---KN
ASG_Graphiurus -KEKNANPIESLEKESAFRTKAEPISSSISNMELELNIHNSKAPK---KN
Hystrix_OMMR -KEKNANPIESLEKESAFRTKAEPISSSISNMELELNIHNSKAPK---KN
Pedetes_OMMR -KEKNANPIESLEKESAFRTKAEPISSSISNMELELNIHNSKAPK---KN
Mus_Rattus -KEKNAHPIESLRKEPAFTAKAKSISNSISDLEVELNVHSSKAPK---KN
Meriones_MR -KEKNANPIESLGKESAFRTAKAKPISNSISDLEVELNVHNSKAPK---KN
Oryzomys_MMR -KEKNANPIESLGKESAFRTKAKPISNSISNLELELNVHNSKAPK---KN
Tenrec_Echinops -KEKSANLAESSAKESAFRTVAEPLSSRKSSMELELTVFNASKAQK----N
Wombat VKDVQVLELFSAEKESTFRGTGTEPVAGSTNHGELELNSRNAKMTR---KD
Phascogale IKEAQTSSELFSAEKESTFRGTGTEPAAS-----LNGETNITK---KD
Echymipera VKDAQAAELFSTEKESTFRTRTEPKAGSIVHGELELNGRGAKMTK---KD
Shrew_Opossum LKEAQASEPSSVEKGSTFKTGSEPAAGSTNQRELELNGRDAKMTK---KD
Red_Kangaroo VKDAQASELFSAEKESTFRGTGTEPTADSTNHRELELNGRDVKMTK---K-
Wallaroo -----
Tree_Kangaroo -----
Possum -----
Gallus -KRGSTLAEFKERGLQWKNAAEKVSGKSDGQLELNNSDQKSTKNACST

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Xenopus_Prot_FASTA      ---CQSDIVHSSNTQIKQOCVESLANAGETRKKQELSCERSQEEK-----
610                                     658
HPG                      RLRRKSSTRRIHALELVVSRNLSPPNCTELQIDSCSSSEEIKK-KKYNQM
Great_Apes              RLRRKSSTRRIHALELVVSRNLSPPNCTELQIDSCSSSEEIKK-KKYNQM
OWMonkeys               RLRRKSSTRRIHALELVVSRNLSPPNCTELQIDSCSSSEEIKK-KKYNQM
Monkeys                 RLRRKSSTRRIHALELVVSRNLSPPNYTELQIDSCSSSEEIKK-KKYNQM
Primates                RLRRKSSTRRIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQM
'+Tupaia'              RLRRKSSTRRIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQM
Tamadua_Bradypus       RLRRMSSTRRIHALELVANRNPSPQNHTELQIDSCSSSEEIKK-KNSDQK
Armadillos              RLRRMSSTRRIHALELVGNRNPSPPNHTELQIDSCSSSEEIEK-INSNOK
EuarchLauraXen         RLRRKSSTRRIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQK
Elephants               RLRRKSSTRRIHALELVVNRNPSPPHTHTELQIDSWSSSEETKK-KSSEQK
Hyraxes                 RLRRKSSTRRIHALELVVNRNPSPPHTGLQIDSWSGSEEMKK-TSSEQK
Sirenia                 RLRRKSSTRRIHALELVVNRNPSPPHTHTELQIDSWSSSEEIKK-KSSEQK
TE_Amblysomus          RLRRKSSTRRIHALELVVNRNPSPPHTHTELQIDSWPSSEEIKK-KSSEQK
Macroscelidae          RLRRKSSTRRIHALELVVNRNPSPPHTHTELQIDSWPSSEEIKK-KRSEHK
Orycteropus_TEAM      RLRRKSSTRRIHALELVVNRNPSPPHTHTELQIDSWPSSEEIKK-KSSEQK
'+Cynocephalus'       RLRRKSSTRRIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQM
Myotis_Tadarida        RLRRKSSTRRIYALELVVNRNPSPPNHTELQIDSCSSSEEVKE-KNSDQI
Taphozous_Tonatia     RLRRKSSTRRIYALELVVNRNPSPPNHTELQIDSCSSSEEVKK-KNSDQI
Pteropus_Cynopterus   RLRRKSSTRRIHALELVVNRNPSPPNHTELQIDSCSSSEELKE-KNSDQM
Megaderma_Hipposideros RLRRKSSTRRIHALELVVSRNPSPPNHTELQIDSCSSSEEVKK-KNSDQM
Manis_C                 RLRRKSSTRRIHALELVVNRNPSPPNHTELQIDSCSSSEEMKK-KNSDQM
Carnivores              RLRRKSSTRRIHALELVVNRNPSPPDHTHTELQIDSCSSSEEMKK-KNSDQM
Cetacea                 RLRRKSSTRKIHALELVVSRNPSPPNHTELQIDSCSSSEEMKK-KHSSQM
BHC                     RLRRKSSTRQIHALELVVSRNPSPPNHTELQIDSCSSSEEMKK-KHSSQM
Sus_BHC                 RLRRKSSTRQIHALELVVSRNPSPPNHTELQIDSCSSSEEMKK-KHSDQM
Perissodactyla         RLRRKSSTRRIHALELVVSRNPSPPNHTELQIDSCSSSEEMKK-KNSDQM
Insectivores           RLRRKSSTRRIHALELVVNRNPSPPNHTELQIDSCSSSEEMKK-KNSDQM
Glires                  RLRRKSSTRRIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQM
Sciurus_Glaucomys      RLRRKSSTRRIHVLEPVVNRNTSPPHHTELQIDSCSSSEEIKT-RNSNQM
Aplodontia_SG          RLRRKSSTRRIHALELVVNRNTSPPHHTELQIDSCSSSEEIKK-RNSNQM
ASG_Graphiurus         RLRRKSSTRRIHALELVVNRNTSPPNHTELQIDSCSSSEEIKK-KNSNQM
Hystrix_OMMR           RLRRKSSTRRIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQM
Pedetes_OMMR           RLRRKSSTRRIHALELVVNRNPSPPNHTELQIDSCSSSEEIKK-KNSDQM
Mus_Rattus             RLRRKSSTRCVLPLEPIV-RNPSPTCAELQIDSCGSSEETKK-NNSNOT
Meriones_MR            RLRRKSSTRCVLLEPVV-RNPSPTCAELQIDSCSSSEETKK-NNSNOT
Oryzomys_MMR           RLRRKSSTRCVLLELVV-RNPSPTCTELQIDSCSSSEETKK-NNSNQM
Tenrec_Echinops        RLRRKPSARHIHPLELVVNRQPSPTHTHTELQISSWPSSEELKK-ESEEPK
Wombat                 RLRRKPSARIVRALELVVDRNPSSSNESELQIDSYPSSEEIRKGTNSEQK
Phascogale             KLRKQPSFKIVCALELGVDGSPSSNETELQIDSYPSSEEIRKNNNSEQK
Echymipera             RLRRKPSARIVRALELVADKNSGSSNEAELQIDSYPSSEDEIRKGNNSEQK
Shrew_Opossum          RPRKRPSVRTVCALELVTDHRPGSSNETELQIDSYPSSEEIRKGNNSEQK
Red_Kangaroo           -----
Wallaroo               -----
Tree_Kangaroo          -----
Possum                  -----
Gallus                 AKGCRHSTRTRCAIHLV-DRNPGSFDLAEPLINSYPSNEEPSK-ADCERR

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Xenopus_Prot_FASTA

659

DFTQS--G----ALGPKTRSQKSPYGHSELHIESSQISNEPS--NVTQV

707

HPG PVRHSRNLQLMEDKEPATGAKKSN-KPNEQTSKRHSDTFPELKLTNAPG
Great_Apes PVRHSRNLQLMEDKEPATGAKKSN-KPNEQTSKRHSDTFPELKLTNAPG
OWMonkeys PVRHSRNLQLMEDKEPATGAKKSN-KPNEQTSKRHASDTFPELKLTNVPG
Monkeys PVRHSRKLQLMEDKEPATGAKKSN-KPNEQTSKRHASDTFPELKLTNIPG
Primates PVRHSRKLQLMEDKEPATGAKKSN-KPNEQISKRHASDTFPELKLTNIPG
'+Tupaia' PVRHSRKLQLMEDKEPATGAKKSN-KPNEQISKRHASDAFPELKLTNIPG
Tamadua_Bradypus PIRHSRMLQLMKDKETATGAKKSN-KRNEQISKRHASDAFPELNLTNVTG
Armadillos PIRHNRMLQLMKEKETTTGAKKNN-KPNEQISERHASDAFPELKLTNVTD
EuarchLauraXen PVRHSRKLQLMKDKETATGAKKSN-KPNEQISKRHASDAFPELNLTNITG
Elephants PIRHNRNLQLMKNQETATGAKKSN-KPKEQISKRHGADSYPELHLLTTTAG
Hyraxes PVRHNINLQLMKNQETTTGAKKSN-KPKEQINKRHTSNPYPELNLTSTAG
Sirenia PVRHNRNLQLMKNQETTTGAKKSN-KPKEQISKRHASDTYPELNLTSTTG
TE_Amblysomus PVRHSRNLQLMKDQETATGAKKSN-KPNEQISKRHATDTFPELNLTNITG
Macroscelidae PVRHSRNLQLMKDQETETGAKKNN-KPNEQISKRHATDTSVERNITG---
Orycteropus_TEAM PVRHSRNLQLMKDQETATGAKKSN-KPNEQISKRHATDTFPELNLTNITG
'+Cynocephalus' PVRHSRKLQLMEDKEPATGAKKSN-KPNEQISKRHASDAFPELKLTNIPG
Myotis_Tadarida PVRHSHKLQLMEGKEPATGAKKSN-KSNEQINKKLASDAFPELNLTNIPG
Taphozous_Tonatia PVRHSHKLQLMEGKEPATGAKKSN-KSNEQINKRLASDAFPELNLTNIPG
Pteropus_Cynopterus PVRHSHKLQFIEDKESATGAKKNN-KPNETINKRLASDAFPELNITNIPG
Megaderma_Hipposideros PVRHSHKLQLIEDKEPATGAKKSN-KPNEQINKRLTSDAFPELNLTNIPG
Manis_C PVRHSHKLQLMEDKEPATGAKKSN-KPNEQINKRLASDAFPELNLTNIPG
Carnivores PVRHSHKTLQLMEDKEPATGAKKSN-KPSEQINKRLASDAFPELNLTNIPG
Cetacea PVRHSHKLLQFMGDKEPTTGAKKSN-KPHEQINKRLASDAYPELNLTNIPG
BHC PVRHSHKLLQFMGDKEPTTGAKKSN-KPHEQINKRLASDAFPELNLTNIPG
Sus_BHC PVRHSHKLLQFMGDKEPTTGAKKSN-KPHEQINKRLASDAFPELNLTNIPG
Perissodactyla PVRHSHKLLQMEDKEPATGAKKSN-KPNEQINKRLASDAFPELKLTNIPG
Insectivores PVRHSHKLLQMEDKEPATGAMKSN-KPNEQISKRLASDAFPELNLTNIPG
Glires PVRHSRKLQLMEDTEPATGAKKSN-KPNEQISKRHASDAFPELKLTNIPG
Sciurus_Glaucomys PVRHGRKLQLMEDAEPATEVRKSN-KPNEQINKRHTNDAFPGKLTGIGS
Aplodontia_SG PVRHGRKLQLMEDAEPATGVKSN-KPNEQINKRHTNDAFPELKLTNIPG
ASG_Graphiurus PVRHGRKLQLMEDAEPATGVKSN-KPNEQISKRHTNDAFPELKLTNIPG
Hystrix_OMMR PVRHSRKLQLMEDAEPATGAKKSN-KPNEQISKRHASDAFPELKLTNIPG
Pedetes_OMMR PVRHSRKLQLMEDAEPATGAKKSN-KPNEQISKRHASDAFPEVKLTNIPG
Mus_Rattus PAGHIREPOLIEDTEPAADAKKN--EPNEHIRKRSASDAFPEEKLMNKAG
Meriones_MR PVRHIRKPOLIEDTEPAPDAKKN--EPNEQIRKRSASDAFPEEKLTNIPG
Oryzomys_MMR PVRHIRKPOLIEDTEPAPDAKKN--EPNEQIRKRSASDAFPEEKLTNIPG
Tenrec_Echinops PVRRSRNLQLTKDQEMAIGAKKND-KPNEERGKHPDTPERNLTNTTD
Wombat QIRRSRRLRLLSE-EIVVGAKKAH-KPDDQAEESCISEVFPPELKIGNVPA
Phascogale QLRSRRLQVSE-EIAIGAKKAH-KPDDQAEESCITEVVSELKGNLPA
Echymipera QIRRSRRLQLLSE-EIAVGTKKAH-EPYDQAEERCVKVFPPELEMGTVSA
Shrew_Opossum QVRSRRLQMLSE-EIAAGAKKAH-KPDEEVEENCVNEVSPPELKIGKVSA
Red_Kangaroo -----
Wallaroo -----
Tree_Kangaroo -----
Possum -----
Gallus QVRSRRLQLLSEEITKETGKMRVIKEAKNSDSGPEGSVFGVER--NVLV

Xenopus_Prot_FASTA

708

EVRRSRLLMLP---KGPGNKSNS-NAVKEMNEQENIAQIPEFR-----

756

HPG SFTNCSENTSELKEFVNPSLPREEKEEKLETVKVSNNNAEDPK-DLMLSGER
Great_Apes SFTNCSENTSELKEFVNPSLPREEKEEKLETVKVSNNNAKDPK-DLMLSGER
OWMonkeys SFTNCSENTSELKEFVNPSLPREEKEEKLETVKVSNNNAKDPK-DLMLSGER
Monkeys SFTNCSENTNELKEFVNPSLPREEEEKLETVKVSNNNAKDPK-DLMLSGER
Primates FFTNCSSSNKLKEFVNPSLQREEIEENLETIQVSNSTKDPK-DLVLSGER
'+Tupaia' FFTNCSSSNKLQEFVNPSLQREEIEENLETIQVSNSTKDPK-DLVLSGER
Tamadua_Bradypus FLTKCSSSDKLQEFVNSSLQGEVAE-NLETIQVSDSTRDPE-DLVLSGGK
Armadillos FLPKCSSSDKLQEFVNSSLQGEVAE-NLETIQVSDSTRDPE-DLVLSGGK
EuarchLauraXen FFTNCSSSDKLQEFVNPSLQGEEIEENLETIQVSNSTKDPE-DLVLSGGR
Elephants FITKCSSSDNLQEFVNPSLQGEKTEENLETIQVSNITKEPK-DLVLNNGR
Hyraxes FITACSSSDNLQEPVNPSLQGEEIEENLATVQMSNTAKEPE-DLELNNGR
Sirenia LITNCSSSHNYQEFVNPSLQGEEIEENLGTIQVSNRTRDPE-DLVLNNGR
TE_Amblysomus FITNCSSSDNLQEFVNPSLQGEEIEENLGTMQVSNSTKDPE-DQVLSGGR
Macroscelidae FITNCSENTDNLQEFVNPRLQGEEIEENLGPIQVSNSTKDPE-DQVLSRGR
Orycteropus_TEAM FITNCSSSDNLQEFVNPSLQGEEIEENLGTIQVSNSTKDPE-DQVLSGGR
'+Cynocephalus' FFTNCSSSNKLQEFVNPSLQREEIEENLETIQVSNSTKDPK-DLVLSGER
Myotis_Tadarida FFTNGSSSNKLKEFVNPNLQREEIEENLGTVQMSNSTKDLK-DLILSGGR
Taphozous_Tonatia FFTNGSSSNKLQEFVDPNLQREEIEENLGTIQVSNSTKDLK-DLILSGGR
Pteropus_Cynopterus FFTNGSSSNKLQEFVNPSLQREEIEENLGTIQVSNSTKDPK-ILIFGEGR
Megaderma_Hipposideros FFTNGSSSNKLQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLILSGGR
Manis_C FFTNCSSSNKLQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLILSGGR
Carnivores FFTNCSSSNKLQEFVNPGLQREEIEESRGTIQVSDSTRDPK-ELVLSGGR
Cetacea FFTHCSSSNKLQEFVNPSLQREE---NLGTIQVSNSTKDPK-DLTLSSGK
BHC FFTNCSSSNKLQEFVNPSLQREE---NLGTIQVSNSTKDPK-DLILSGK
Sus_BHC FFTNCSSSNKLQEFVNPSLQREE---NLGTIQVSNSTKDPK-DLILSGK
Perissodactyla FFTNCSSSNKLQEFVNPSLQREEIEQNLGAIQVSNSTKDPK-DLILSGGR
Insectivores FFTNCSSSNKLQEFVNPSLQREEIEENLGTIQVSNSTKDPK-DLILSGER
Glires FFTNCSSSNKLQEFVNPSLQREEIEENLETIQVSNSTKDPK-DLVLSGER
Sciurus_Glaucomys LFTNCSSSSKVEEFVNPNLQKEETEENLEIIQVSNNTKDPK-DMVLSGER
Aplodontia_SG LFTNCSSSSKLKEFVNPNLQKEETEENLEIIQVSNSTKDPK-DMVLSGER
ASG_Graphiurus LFTNCSSSNKLKEFVNPSLQKEEIEENLETIQVSNSTKDPK-DLVLSGER
Hystrix_OMMR FFTNCSSSNKLKEFVNPSLQREEIEENLETIQVSNSTKDPK-DLVLSGER
Pedetes_OMMR FLTNCSSSNKLKEFVNPSLQREEIEENLETIQVSNSTKDPK-DLVLSGER
Mus_Rattus LLTSCSSPRKPQGPVNPSQPORKGIE-QLETRQMSDSTKELG-DLVLGGE
Meriones_MR LLTSCSSSPKQGPVNPSQPORKEIE-KLETSQMSDSTKELK-DLVLGGER
Oryzomys_MMR LLTSCSSSNKPQGPVNPSQPORKEIE-KLETSQMSDSTKDLK-DLVLGGER
Tenrec_Echinops LITNCSSVSGNLQGSVCPSLPGAKLKEKLTGTQVSNSTRDPK-DEVLGRAR
Wombat CATDSLTTDRDQVLASCSFTEERDERSLEAIPSSK---DQD--LPLNGGE
Phascogale CAPDNVSTDQVLASCSFT--GDEERSLEVIPSSQ---DQD--LALSKE
Echymipera GATDSLSTDRDEVLASCSFTD-GEERNLEVIPSSK---DQDQDLALSERE
Shrew_Opossum CSTDSLATDSLVLASCSFTE-GDEKSLEAFQPSR---DQDS-LAVSRGE
Red_Kangaroo -----
Wallaroo -----
Tree_Kangaroo -----
Possum -----
Gallus HNSQCKDLRKQODILSYMSLADRNGADLEANGIQISSKNSD-D--MAKNR

Xenopus_Prot_FASTA

757

-VKDTNKNNEISDTVPSQLKKKDTY-----

805

HPG
Great_Apes
OWMonkeys
Monkeys
Primates
'+Tupaia'
Tamadua_Bradypus
Armadillos
EuarchLauraXen
Elephants
Hyraxes
Sirenia
TE_Amblysomus
Macroscelidae
Orycteropus_TEAM
'+Cynocephalus'
Myotis_Tadarida
Taphozous_Tonatia
Pteropus_Cynopterus
Megaderma_Hipposideros
Manis_C
Carnivores
Cetacea
BHC
Sus_BHC
Perissodactyla
Insectivores
Glires
Sciurus_Glaucomys
Aplodontia_SG
ASG_Graphiurus
Hystrix_OMMR
Pedetes_OMMR
Mus_Rattus
Meriones_MR
Oryzomys_MMR
Tenrec_Echinops
Wombat
Phascogale
Echymipera
Shrew_Opossum
Red_Kangaroo
Wallaroo
Tree_Kangaroo
Possum
Gallus

VLQTE-RSVESSISLVPDGYGTQESISLLEVSTLGKAKTEPNKCVSQC
VLQTE-RSVESSISLVPDGYGTQESISLLEVSTLGKAKTEPNKCVSQC
VLQTE-RSVESSISLVPDGYGTQESISLLEVSTLGKAKTEPNKCVSQC
VLQTE-RSVESSISLVPDGYGTQESISLLEVSTLGKAKTEPNKCVSQC
VLQTE-RSVESTSISLVPDGYGTQDSISLLEVENTLGKAKTAPNKRVSQC
GLQTE-RSVESTSISLVPDGYGTQDSISLLEANTLGKAKTAPNQRVSQC
GLQTE-RSVESTSISVVPDGYGTQDSISLLEADTLGKAKAAPNQHVSQY
SLQTE-RSAESTSISVVPDGYGTQDSISLLEADTLGKAKTALNQHVSQY
GLQTE-RSVESTSISVVPDGYGTQDSISLLEADTLGKAKTAPNQRASQC
DLQTK-KSIESTNISVIPDGYGTQDSVSLLGADTPGKAKTAPNQCASQC
VLQTK-RSVESTSISVIPDADCGAQDSISLLEADTLGKAKTAPNQGAGQC
GLQTE-ISVESTSISVIPDGYGTQDSISLLEADTLRKAETAPNQCASQC
GLQTE-RSVESTSISVIPDGYGTQDSISLLEAGTLGKAETAPNQCASQC
GLHTG-KCVESTSISVIPDGYGTQNSISLLEAGTLGKAETAPNQCASHC
GLQTE-RSVESTSISVIPDGYGTQDSISLLEADTLGKAKTAPNQCASQC
GLQTE-RSVESTSISLVPDGYGTQDSISLLEANTLGKAKTAPNQRVSQC
SLQTD-RSMESTNILLVPDGYGTQDSISLLEPDTPGKAKTAPNQCAGLC
SLQTD-RSMESTNILLVPDGYGTQDSISLLEPDTPGKAKTAPNQRAGLC
GSQTD-RSTESTSILLVPDGYGTQDSISLLEPDIPGRAKTAPNQHADLC
GLQTD-RSMESTSILLVPDGYGTQDSMSLLEPDTPGKAKTAPNQRAGVC
GLQTE-RSVESTSISLVPDGYGTQDSISLLEADTLGKAKTAPNQRASLC
GLQTE-RSVESTSISLVPDGYGTQDSISLLEADTLGKAKTAPNQRASLC
GLQIE-RSVESTSISLVPDGYGTQDSISLLEADTLGKAKTAPNQHVSQC
GLQIE-RSVESTSISLVPDGYGTQDSISLLEADTLGKAKTAPNQRVSLC
GLQIE-RSVESTSISLVPDGYGTQDSISLLEADTLGKAKTAPNQRVSLC
GLQAE-RSVESTSISLVPDGYGTQDSISLLEADTLGKAKTAPNQRASLC
GLQTE-RSVESTSISLVPDGYGTQDSISLLEADTLGKAKKAPNQCASLC
GLQTE-RSAESTSISLVPDGYGTQDSISLLEANTLGKAKTAPNQRVSQC
VLQTE-RSAESTSISLVPDGYGTQDSISLLEANTFGKARTASNQHVTQY
GLQTE-RSAESTSISLVPDGYGTQDSISLLEANTFGKARTASNQHVTQY
GLQTE-RSAESTSISLVPDGYGTQDSISLLEANTLGKARTASNQCVTQY
GLPTE-RSAESTSVSLVPDGYGTQDSISLLEANTLRKAKTASNQCVTQY
GKPTTE-RSEESTSVSLVPDGYGTQNSVSVLEANTVRYARTGSVQCMTQF
GLSTE-RSEESTSVSLVPDGYGTQNSVSVLEANTVRYAKTGSIQCMTQF
GLSTE-RSEESTSVSLVPDGYGTQNSVSVLEANTVRYAKTGSIQCMTQF
GLQTA-RSVESTSVSLIPDADDGTQGSISIMEAGNRGEAQTAPDQCARQC
GLQGE-RAPGSLEALEVPDGYGTQDSTSLFPADTPQNSKAGPSPHRSHS
GLQGE-ISQGSGLTVEVPDGYGTQDSTSLFPADTPQNSKPGPSPHRNHC
RLQEK-RTQGNLELLEVPDGYGTQDSTSLFPAETPQNSKAGPSPHRSNC
KLQK-RTKGNMEVLEVASTDGYGTQDSTSLFPDTPPPNPTADSGPHRNQH

SFFNPTFSCQLSNFN-SPSSKAGSQEG-EMLGKFLP---QSPSKTVLHA

Xenopus_Prot_FASTA

806

-----FPPCTSEDGTGELEN-----G---IPVRKISDQN

848

HPG AAFENPKGLIHGC-----SKDTRNDTEGFKYPLGHEVNHSRETSIEME
Great_Apes AAFENPKELIHGC-----SKDTRNDTEGFKYPLGHEVNHSQETSIEME
OWMonkeys AAFENPKELIHGC-----SKDTRNDTEGFKYPLGREVNHSQETSIEME
Monkeys AAFENPKELIHGC-----SKDTRNDTEGFKYPLGREVNHSQETSIEME
Primates AAIENPKELIHGC-----SKDTRNDTEGFKDPLRREVNHIQETSIEME
'+Tupaia' AAIENPKELIHGC-----SKDTRNDTEGFKDPLRREVNHIQETSIEME
Tamadua_Bradypus AAIGNATELFHGC-----SKDTRNDTEDFKDPLRHEVNHTQETIVEME
Armadillos AAIRNATELSHGC-----SKDTRNDTEDFKDPLRHEVNHTQETSVEME
EuarchLauraXen AAIENPNELIHGC-----SKDTRNDTEGFKDPLRREVNHIQETSIEME
Elephants TAIENPSELTNSC-----PKDTRNDTEGFKDLLRCEASHIQETCIEIE
Hyraxes SAIENPNELIHGS-----PKDTRNDIEGFKDPLRCEVNPIQEI CVEMD
Sirenia AAIENPNELIHGC-----PKDTRNDTEDFKDLLRCEVNHIQETCIEME
TE_Amblysomus AAIENPNKLIHGF-----PKDTRNDTEGFKDLLRREVNHIQETCIEME
Macroscelidae AAIENPNKHVHGF-----PKDTGNDTEGFKDLLKCDANHIQDTCIEME
Orycteropus_TEAM AAIENPNKLIHGF-----PKDTRNDTEGFKDLLRREVNHIQETCIEME
'+Cynocephalus' AAIENPKELIHGC-----SKDTRNDTEGFKDPLRREVNHIQETSIEME
Myotis_Tadarida AAIKNPKELIHGC-----SKDTRNDREGFKDLLRREVNHTQETSIEME
Taphozous_Tonatia AAIENPKELIHGC-----SKDTRNDTEGVKDLLRCEVNHTQETSIEME
Pteropus_Cynopterus AAIENPRELIHGC-----SKDTRNDTEGFKDPLRREVNHTQETSIEME
Megaderma_Hipposideros AAIENPKELIHGC-----SKDTRNDTEGFKDPLRREVNHTQETSIEME
Manis_C AAIENPKELIHGC-----SKDTRNDTEGFKDPLRREDNHTQETSIEME
Carnivores AAIENPKELIHGC-----SKDTRNDTEGFTDPLRREDNHTQETSIEME
Cetacea AAIESPKELIHGC-----SKDIRNDTEDFQDPLGHVNHIQEASTEME
BHC AATENPKELIHGC-----SKDTRNDTEGFQDPLGHDVNHTQEASIEME
Sus_BHC AATENPKELIHGC-----SKDTRNDTEGFKDPLGHDVNHTQEASIEME
Perissodactyla AAIENPKELIHDC-----SKDTRNDTEGFKDPLRREVNHTQETSIEME
Insectivores AAIENPKELIHGC-----SKDTRNDTEGFKDPLRREVNHTQETSIEME
Glires AAIENPKELIHGC-----SKDTRNDTEGFKDPLRREVNHIQETSIEME
Sciurus_Glaucomys VAIENPKEFIHGH-----SKDTRNDPEGFKDSLRCVNHIQETNVEME
Aplodontia_SG VAIENPKEFIHGH-----SKDTRNDTEGFKDSLRRVNHIQETNVEME
ASG_Graphiurus VAIENPKELIHGC-----SKDTRNDTEGFKDSLRRVNHIQETNIEME
Hystrix_OMMR VAIENPKELIHGC-----SKDTRNDTEGFKDPLRREVNHIQETNIEME
Pedetes_OMMR VAIENPKELIHGC-----SKDTRNDTEGFKDPLRREVNHIQETNIEME
Mus_Rattus VASENPKELVHG-----SNNAGSGTECFKHPLRHELNHSQET-VEME
Meriones_MR VASENPKELVHG-----SNNAGSGTECFKHPLRHELNIQET-VEME
Oryzomys_MMR VASENPKELVHG-----SNNAGSGTECFKHPLRHELNIQET-VEME
Tenrec_Echinops AATENPNKSVHGL-----SKDTRNNTGFEFLLTHDVNHIQETCTEME
Wombat EIMETPKELLDGCS-----SKNTESDEEDLRSLMRQEVKNASKTTTEME
Phascogale EIMETPKELLESS-----SKNTESVEDLRSLMKQEVKNASKTITEME
Echymipera EIMESSKELFDAYS-----SKNTDSGTEG---LIRQEI KYGSETSSVME
Shrew_Opossum EVIETPKELFDDCS-----SKNTGSGKED---LTRQEVKNTSETTTTEIE
Red_Kangaroo -----
Wallaroo -----
Tree_Kangaroo -----
Possum -----
Gallus ASILTEEKRSWSCTVFSQDKGCCSRNVPKDFRIGKSPMAKNASEFTMEAE

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849

ASLDNP---IDPCK-----D--EYSDTLLHVAGDNVQPDYMETE

898

HPG ESELDAQYLQNTFKVSKRQSFALFSNPGNPEEEECATFSAHSRSLKKQSPK
Great_Apes ESELDTQYLQNTFKVSKRQSFALFSNPGNPEEEECATFSAHSRSLKKQSPK
OWMonkeys ESELDTQYLQNTFKVSKRQSFALFSNPGNPEEEECATFSAHSRSLKKQSPK
Monkeys ESELDTQYLQNTFKVSKRQSFALFSNPGNPEKEECATFSAHSRSLKKQSPK
Primates ESELDTQYLQNTFKVSKRQSFALFSNPGNPEKEECATVCAHSRSLRKQSPK
'+Tupaia' ESELDTQYLQNTFKVSKRQSFALFSNPGNPEKEECATVCAHSRSLRKQSPK
Tamadua_Bradypus ESELDTQYLQNTFKISKRQSFALFSNP---EKECATVCAHSRSLGKQSPK
Armadillos ESELDTQYLQNTFKISKRQSFALFSNP---ENECATVCAHSRFLGKQSPK
EuarchLauraXen ESELDTQYLQNTFKVSKRQSFALFSNP---EKECATVCAHSRSLRKQSPK
Elephants ESELDTQYLQSTFKVSKRQSFALFSNP---EKKCATICAHSKSLRKQSPK
Hyraxes ENELDTQYIQSTFKVSKRHSFALFSNP---EKECATSYTHSKSLRKENPK
Sirenia DSELDTQYLQSTFKVSKRQSFALFSNP---EKECATICAHSKSLRKQSPK
TE_Amblysomus ESELDTQYLQNTFKVSKRQSFALFSNP---EKECATVCAHSRSLRKQSPK
Macroscelidae DSELDTQYLQNTFKVSKRQSFALFPNP---EKECTTVCAHSRSLRKQSPK
Orycteropus_TEAM ESELDTQYLQNTFKVSKRQSFALFSNP---EKECATVCAHSRSLRKQSPK
'+Cynocephalus' ESELDTQYLQNTFKVSKRQSFALFSNPGNPEKEECATVCAHSRSLRKQSPK
Myotis_Tadarida ESELDTQYLQNTFKVSKRQSFALFSN---PEKECATVYAHRSRSLRKQSPK
Taphozous_Tonatia ESELDTQYLQNTFKVSKRQSFALFSNPGNPEKEECATVYAHRSRSLRKQSPK
Pteropus_Cynopterus ESELDTQYLQNTFKVSKRQS---FSNPGNLEKEECATGYAHRSRSLRKQSPK
Megaderma_Hipposideros ESELDTQYLQNTFKVSKRQSFALFSNPGNPEKEECATVYAHRSRSLRKQSPK
Manis_C ESELDTQYLQNTFKVSKRQSFALFSNPGNPEKEECATVCAHSRSLRKQSPK
Carnivores ESELDTQCLHNTFKVSKRQSFALFSNPGNPEKEECATVCARSRSLRKQSPK
Cetacea ENELDTQYLQNMFKVSKRQTFALFSNPENPEKEECATVCAHSGSLREQSPR
BHC ESELDTQYLQNTFKVSKRQTFALFSNPGNPEKEECATVCAHSGSLREQSPR
Sus_BHC ESELDTQYLQNTFKVSKRQTFALFSNPGNPEKEECATVCAHSGSLREQSPK
Perissodactyla ESELDTQYLQNTFKVSKRQSFALFSNPGNPEKEECATVCAHSRSLRKQSPK
Insectivores ESELDTQYLQNTFKVSKRQSFALFSNPGNSEKEECATVSAHSRSLRKQSPK
Glires ESELDTQYLQNTFKVSKRQSFALFSNPGNPEKEECATVCAHSKSLRKQSPK
Sciurus_Glaucomys ESELDTQYLENTFQVSKRQSFALFSNPGNLEKECAAITYTPSKSLRKQSPK
Aplodontia_SG ESELDTQYLENTFQVSKRQSFALFSNPGNPEKECAAICTPSKSLRKQSPK
ASG_Graphiurus ESELDTQYLQNTFQVSKRQSFALFSNPGNPEKEECATVCAPSKSLRKQSPK
Hystrix_OMMR ESELDTQYLQNTFQVSKRQSFALFSNPGNPEKEECATVCAHSKSLRKQSPK
Pedetes_OMMR ESELDTQYLQNTFQVSKRQSFALFSNPGNPEKEECATVCAHSKSLRKQSPK
Mus_Rattus DSELDTQYLQNTFQVSKRQSFALFSKPRSPQKDC'TAVCAHS---RELSPK
Meriones_MR ESELDTQYLQNTFQVSKRQSFALFSKPRSPQKECAAIVCAHSNSFRELSPK
Oryzomys_MMR ESELDTQYLQNTFQVSKRQSFALFSKPGNPQKECAAIVCAHSNSFRELSPK
Tenrec_Echinops ESELDTQYLQNTFKVSKRQSFALSSNP---EKECATLCAHPSAFRKQNP
Wombat DSELDTQYLQNTFKRSKRQSFALRSSP---RQECRKPSAVPGTVNQQSPD
Phascogale DSELDTQYLQNTFKRSKRQSFALCSSP---RQEVKTCVAVPGAISQOS--
Echymipera DSELDTQYLQNTFKRSKRQTFALCSNP---KQEQIKPCSVPRVSHQSSD
Shrew_Opossum DSELDTQYLQNTFKRSKRQSFALCPSP---RQTSMKLRSIPRALSHQSPD
Red_Kangaroo -----
Wallaroo -----
Tree_Kangaroo -----
Possum -----
Gallus DSELDMOYLRNIFRSSKRQSFSLYPTP---MKACTTDDVAS---EKLN--

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899

ESELETQHIVKMFKTSKRTSFILESKE-----

946

HPG VTFECEQKEEN-QGKNESNIKPVQTVNITAGFPVVCQKD-KPVDYAKCSI
Great_Apes VTFECEQKEEN-QGKNESNIKPVQTVNITAGFPVVCQKD-KPVDYAKCSI
OWMonkeys VTFECEQKEEN-QGKKNESNIKPVQTVNITAGFPVVCQKD-KPVDYAKCSI
Monkeys VTLECEQKEEN-QGKKNESNIKPVQTVNTTAGFPVVCQKD-KPVDYAKCSI
Primates VTLECEQKEEN-QGKKNESKIKHVQAVNTTAGFPVVCQKD-KPGDYAKCSI
'+Tupaia' VTLECEQKEEN-QGKKNESKIKHVQAVNTTAGFPVVCQKD-KPGDYAKCSI
Tamadua_Bradypus VTFDCRQKEEN-QGKKNESKIKHVQAVHTTAGFPVVCQKD-KPGDYAKCSI
Armadillos VTFECRQKEEN-QGKKNESKIKHVQAVHTTAGFPVVCQKD-KPGDYAKCSI
EuarchLauraXen VTLECGQKEEN-QGKKNESKIKHVQAVHTTAGFPVVCQKD-KPGDYAKCSI
Elephants VTLVCGEKEEN-QGNREP KIKHEQAVHMPAGYPEACQKE-KPSDYTKYSI
Hyraxes VTLQRGEEEN-QGNKESKIKH---VHTTASCPEVCQED-TPSDRNTNSV
Sirenia VTPEYGEKEEN-QGNKESKIKHEQAVHTTAGYPEDCQKE-KPSDYTKCSI
TE_Amblysomus VTLECGEKEEN-QGNKESKIKHVQAVHTTAGYPGVCQKE-KPSDYTKCSI
Macroscelidae VTLECGEKEEN-QGNKESKIKHVQVHTTAGYPGVCEEE-KPNDYTKCSI
Orycteropus_TEAM VTLECGEKEEN-QGNKESKIKHVQAVHTTAGYPGVCQKE-KPSDYTKCSI
'+Cynocephalus' VTLECEQKEEN-QGKKNESKIKHVQAVNTTAGFPVVCQKD-KPGDYAKCSI
Myotis_Tadarida VTLECGQKEEN-QGEKESKIKHVQAVHTTAGFPVVCQEKD-KPGEYAKYSI
Taphozous_Tonatia VTLECGQKEEN-QGEKESKIKHVQAVHTTAGFPVVCQEKD-KPGEYAKYSI
Pteropus_Cynopterus VTLECDRKEGN-QGKKNESKIKHVQAVYTTVGFPVVCQEKD-KPGDYAKYGI
Megaderma_Hipposideros VTLECGQKEEN-QGKKNESKIKHVQAVHTTAGFPVVCQEKD-KPGDYAKYSI
Manis_C VTLECGQKEEN-QGKKESEIKHVQAVHTTAGFPVVSQKD-KPGDYAKCSI
Carnivores VTLECGQKEEN-QGKKESEIKHVQAVHTTAGFSAVSQKV-KPGDYAKCSI
Cetacea VPLECRQKEEN-QGKSESKIKHVRAINTTVDFPVAGQKD-KPSDHAKRSP
BHC VPLECGQKEEN-QGKSESKIKHVQAIYTTVDFPVAGQKD-KPSDYAKCST
Sus_BHC VTLECGQKEEN-QGKSESKIKHVQAVHTTVDFPVVQKD-KPSDYAKCST
Perissodactyla VTLECGQKEEN-QGKKNESKIKHVQSVHTTVGFPVVCQKD-KPGDYVVKCSI
Insectivores VTLECEQKEEN-QGKKNESKIKHVQAVHTTAGFPVVCQKD-KPGDYAKCSI
Glires VTLECEQKEEN-QGKKNESKIKHVQAVNTTVGFPVVCQKD-KPGDYAKCSI
Sciurus_Glaucomys VTLECEQKEEN-WGKKNESKIRHVQAVNATMGF--VCQKD-KPDDDAQCSI
Aplodontia_SG VTLECEQKEEN-QGKKNESKIRHVQAVNATMGFPVVCQKD-KPGDDAKCSI
ASG_Graphiurus VTLECEQKEEN-QGKKNESKIRHVQAVNTTMGFPVVCQKD-KPGDDAKCSI
Hystrix_OMMR VTLECEQKEEN-QGKKNESKIRHVQAVNTTVGFPVVCQKD-KPGADAKCSI
Pedetes_OMMR VTLECEQKEEN-QGKEESKIRHVQAVNTTVGFPVVCQED-KPGADAKCSI
Mus_Rattus VTSKGEQKER--QGQEESEISHVQAVTATVGLPVLCQEG-KPGADTMCA-
Meriones_MR VTSKGEQKEG--QGQEESEISHVQAVTATVGLPVLCQEG-KPGADTMCA-
Oryzomys_MMR VTSKGEQKEGI-QGQEESEISHVQAVTATVGFVLCQEG-KPGADTMCAI
Tenrec_Echinops VALECGEKEGT-QENKESTIKPVQAVHTTVGGAGGSPTTE-KPSDYTKSSL
Wombat NTTDCGGQEKQGNRESNKPVWPKSAVMSLAAACQTEERKPGVYAKCST
Phascogale --TVRRYQEKQENRESNKPVQPKPAVV-----IEKGKPGDHAKWST
Echymipera NASDCGGQEKQGNRESNKPGLASAVRSSAATCQTE-RKPGDPDKCSA
Shrew_Opossum KATNHGGQEKQGSRESKAVQPELAVMSSAAVCQTEKPKPGDYAKCST
Red_Kangaroo -----
Wallaroo -----
Tree_Kangaroo -----
Possum -----
Gallus --TSCPQVVEE-RNSKYLKTENLQEEKTTAENLSSVCEK--FETCESACV

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947

-----AENEN-----R-VNSAVEISQVETSNELPNVAE-----

994

HPG KGGSRFCLSSQF-RGNETGLITPNKHGLLQNPYHIPPLFPIKSFV-KTKC
Great_Apes KGGSRFCLSSQF-RGNETGLITPNKHGLLQNPYHIPPLFPIKSFV-KTKC
OWMonkeys KGGSRFCLSSQF-RGNETGLITPNKHGLLQNPYHIPPLFPIKSFV-KTKC
Monkeys KGGSRFCLSSQF-RGNETGLITPNKHGLLQNPYHIPPLFPIKSFV-KTKC
Primates KGGSRFCLSSQF-RGNETGLITPNKHGLLQNPYHIPPLFPIKSFV-KTKC
'+Tupaia' KGGSRFCLSSQF-RGNETGLITPNKHGLLQNPYHIPPLFPIKSFV-KTKC
Tamadua_Bradypus QGVSKLCQSSQF-RGNESELITANEHEISQNPDQMPSSLPIRSSV-KTKC
Armadillos QGVSKLCQSSQF-RGNESELITANEHEISQNPDQMPSSLPIRSSV-KTKC
EuarchLauraXen QGVSKLCQSSQF-RGNESELITANEHEISQNPDQMPSSLPIRSSV-KTKC
Elephants KGVSGLCQSSQF-RGSESELITADGHGISQNPDIPLSLPTRSSV-KTKC
Hyraxes KGLPRLCHSSQF-KGSESELITEGEHGIAQNPDQMPSSSPIRSSV-NSKC
Sirenia KGVSKLCQSSQF-RGSESELITAGEHGIAQNPDQMPSSSPIRASSV-KS--
TE_Amblysomus QGVSKLCQSSQF-RGNESELITANEHEISQNPDQMPSSLPIRSSV-KTKC
Macroscelidae KGVSKLCQSSQF-RGNESELITANEHEISQNPDQMPSSLPIRSSV-KTKC
Orycteropus_TEAM KGVSKLCQSSQF-RGNESELITANEHEISQNPDQMPSSLPIRSSV-KTKC
'+Cynocephalus' KGVSKLCQSSQF-RGNETELITANKHGILQNPYHMPSSLPIRSSV-KTKC
Myotis_Tadarida KGTSRLCQSSQF-RGNETELITANKHGILQNPYHMPSSLPIRSSV-KTIS
Taphozous_Tonatia KGISRLCQSSQF-RGNETELITANKHGILQNPYHMPSSLPIRSSV-KTIS
Pteropus_Cynopterus KEVSRLCQSFQF-RGNETELITANKHGILQNPYHMPSSLPIRSSV-KTIC
Megaderma_Hipposideros KGVSKLCQSSQF-RGNETELITANKHGILQNPYHMPSSLPIRSSV-KTIC
Manis_C KGVSKLCQSSQF-RGNETELITANKHGILQNPYHMPSSLPIRSSV-KTIC
Carnivores KGVSKLCQSSQF-RGNETELITANKHGILQNPYHMPSSLPIRSSV-KTIC
Cetacea KRVTSLCQSSQF-RSNKTELIANKHGILQNPYHMPSSLPIRSSV-KTIC
BHC KGVTRLCQSSQF-RGNKTELIANKHGILQNPYHMPSSLPIRSSV-KTIC
Sus_BHC KGVTRLCQSSQF-RGNKTELIANKHGILQNPYHMPSSLPIRSSV-KTIC
Perissodactyla KEVSRLCQSSQF-RGNETELITANKHGILQNPYHMPSSLPIRSSV-KTIC
Insectivores KGVSKLCQSSQF-RGNETELITANKHGILQNPYHMPSSLPIRSSV-KSIC
Glires KGVSKLCQSSQF-RGNETELITANKHGILQNPYHMPSSLPIRSSV-KTKC
Sciurus_Glaucomys TEVSRLCPSFQF-RGNETKLITADKHGISQNPYHMPSSLPIRSSV-NTKC
Aplodontia_SG TEVSRLCPSFQF-RGNETKLITADKHGISQNPYHMPSSLPIRSSV-KTKC
ASG_Graphiurus TGVSRLCPSFQF-RGNETELITADKHGISQNPYHMPSSLPIRSSV-KTKC
Hystrix_OMMR TGVSRLCPSFQF-RGNETELITADKHGISQNPYHMPSSLPIRSSV-KTKC
Pedetes_OMMR TGVSRLCPSFQF-RGNETELITADKHGISQNPYHMPSSLPIRSSV-KTKC
Mus_Rattus -GVSRLCPSHY-RSGENGLSTTGKSGISQNSHFKQSVSPIRSSI-KTDN
Meriones_MR -GVSRLCPSQY-RSNENELSTAGKPGISQNSHLKQSVSPIRSSV-KTDH
Oryzomys_MMR TGVSRLCPSQY-RSNENELSTAGKPGISQNSHLKQSVSPIRSSV-KTDH
Tenrec_Echinops QGVSKLCQSSQF-RGSESDPSTSVHGILOTSEHTPPLSPIRSSV-KSKC
Wombat TEVSRLCHIAPLHGVIDCEHIAGNNOGISQVPDQKPSVSPARSSASKTIN
Phascogale REVSRLCHIASLNSGNDCEPIAEINOGISQVPDQNSVSPARSSDSKTIY
Echymipera TGVSRLCHIAPLQEGNDCEYIAGKKOGISQVPNOKQSVSPTRSSVSK-IY
Shrew_Opossum --VSRLCHIAPLHDDNDCDHAENKOGISQVPDQKQSVSPAKSSAGRSIY
Red_Kangaroo -----
Wallaroo -----
Tree_Kangaroo -----
Possum -----
Gallus SPVSCFVSSAACVHTVENQDVSKVAN--HGNTLLLRICAARNED-GNRP

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995

-----CR--H-----T---SL-----

1042

HPG KKN-LLEENFEEHSMSPEREMGNENI-PSTVSTISRNNIRENVFKEASSS
Great_Apes KKN-LLEENSEEHSMSPEREMGNENI-PSTVSTISRNNIRENVFKEASSS
OWMonkeys KKN-LLEENSEEHSMSPERAMGNENIIPSTVSTISHNNIRENAFKEASSS
Monkeys KKN-LLEENSEEHSMSPERAMGNENIIPSTVSTISHNNIRENAFKEASSS
Primates KKN-LLEERFEEHSVSPERAMGNENIIPSTVSTISQNNIRESAFKEASSS
'+Tupaia' KKN-LSEERFEEHSVSPERAMGNESIIQSTVSTISQNNIRESAFKEASSS
Tamadua_Bradypus KEN-LSEERFEEHTVSLERAVGNENIIQSTVSTISQNNIRESAFKEASSS
Armadillos KEN-LSEEFEEHTVSLERTVGNENIIQSTVSTISHNNIRENAFKEASSS
EuarchLauraXen KKN-LSEERFEEHTVSLERAMGNESIIQSTVSTISQNNIRESAFKEASSS
Elephants KTN-LLEERFEEHTISLERAMRNENVIQSTVSTVSQNNIRESASKEASSS
Hyraxes NKN-LSEERFEEHKTILLERTTGNETIVQSTVSTVSGQDNIRGSASKETSSS
Sirenia KKN-LSEERFEEHTISLERAVGNESIVQSTVSTVSQNNIKESASKEASSS
TE_Amblysomus KKN-LSEERFEEHTISLERAMGNESIIQSTVSTVSQNNIRESAFKEASSS
Macroscelidae KKN-LSEEFEEHTISLERAMGNESIIHSTVSTVSQNNIRGSASFKEASSS
Orycteropus_TEAM KKN-LSEERFEEHTISLERAMGNESIIQSTVSTVSQNNIRESAFKEASSS
'+Cynocephalus' KKN-LSEERFEEHSVSPERAMGNESIIQSTVSTISQNNIRESAFKEASSS
Myotis_Tadarida KKN-LSEEFEEHSVSPERAMGNENI-QSTVSPISLNNIRESTFKEGSSS
Taphozous_Tonatia KKN-LSEEFEEHSVSPERAMGNENIIQSTVSTISQNNIRESAVKEGSSS
Pteropus_Cynopterus KKN-LSEEFEEHSISPRAIGNETIIQSTVGTISQNNIRESTFKEGSSS
Megaderma_Hipposideros KKN-LSEENFEEYSVSPERAMGNESIIQSTVSTISQNNIRESTFKEGSSS
Manis_C KKN-LSEEFEEHSMSPERAVGNESIIQSTVSTISQNNIRESTFKEVSSS
Carnivores KKN-LSEEFEEHSMSPERAVGNESVIQSTVSTISQNNIRESTFKEVSSS
Cetacea KKN-LSEEFEEPVMSPERAMENESIIQSTVSTISQNNIRESTFKEVSSS
BHC KKN-LSEEFEEPVMSPERAMGNESIIQSTVSTISQNNIRESTFKEVSSS
Sus_BHC KKN-LSEEFEEPVMSPERAMGNESIIQSTVSTISQNNIRESTFKEVSSS
Perissodactyla KKN-LSEEFEEHSVSPERAMGNESIIQSTVSTISQNNIRESTFKEVSSS
Insectivores KKN-LSEEFEEHSVSPERAMGNESIIQSTVSTISQNNIRESAFKEVSSS
Glires KKN-LSEERFEEHSVSPERAMGNESIIQSTVSTISQNNIRESAFKEASSS
Sciurus_Glaucomys KKN-LSEEFEEKHSRSPKAVGYKRIIQSTVSTISQNNIROSAFKEANSNG
Aplodontia_SG KKN-LSEEFEEKHSRSPKAVGYKRIIQSTVSTISQNNIRESAFKEANSNG
ASG_Graphiurus KKN-LSEERFEEKHSVSPEKAVGYERIIQSTVSTISQNNIRESAFKEANSNG
Hystrix_OMMR KKN-LSEERFEEKHSVSPEKAMGNESIIQSTVSTISQNNIRESAFKEASSG
Pedetes_OMMR KKN-LSEERFEEKHSVSPEKAMGNESIIQSTVYTISQNNIRESAFKEASSG
Mus_Rattus RKT-LTEGRFEEKHTLSTERAMGNETVVQSTVHTISLNN-RGNACQEASSG
Meriones_MR RKT-LSEGRFEEKHTLSTERAMGNETVVQSTVHTISQNN-RGNACQEASSG
Oryzomys_MMR RKT-LSEGRFEEKHTLSTERAMGNETVVQSTVHTISQNN-RENACQEASSG
Tenrec_Echinops KEK-LSEERLEDHAESLERASGNESIIQSTVSTISQNTLRENAFKGTSSS
Wombat TKN-LLEERLDEQTTCPETAMGNESLAQSSLSQNSREYISKATDLN
Phascogale AKN-FLEERLDEQTTCPETTMGNESLAQSSISLVSQNSREYVSNPIDL-
Echymipera TKN-LLKDRL-EQTTCPETVMGNESLGQSSLSQNSREYISKATDLN
Shrew_Opossum TKS-LLEERLDEQTTCPETVMGNESLVHSSLSQNSREYISKATDSN
Red_Kangaroo -----
Wallaroo -----
Tree_Kangaroo -----
Possum -----
Gallus QKGEQGSEKTLSTGIGVESKLRLSPVRSNRSQS-DQSNTEEHAFFORTGLN


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Xenopus_Prot_FASTA      -----LSSAKEQSGALLKQGPSSEPKKTSPIHMLKKTESKHSKMSRNRG
1043                                     1092
HPG                      NINEVGSSTNEVGSSINEVGSSDENIQAELGRNRGPKLNAMLRLGVLQPE
Great_Apes              NINEVGSSTNEVGSSINEVGSSDENIQAELGRNRGPKLNAMLRLGVLQPE
OWMonkeys               NINEVGSSTNEVGSSINEVGSSDENIQAELGRNRGPKLNAMLRLGVLQPE
Monkeys                 SINEVGSSTNEVGSSINEVGSSDENIQAELGRNRGPKLNAMLRLGVLQPE
Primates                SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
'+Tupaia'              SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
Tamadua_Bradypus       SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAMLRLGLMQPE
Armadillos             SI-----NEVGSSGENIQAELGRNRAPKLNAMLRLGLMQPE
EuarchLauraXen         SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
Elephants              SI-----NEVCSSINEVGSSGENIQAEISRKRGPKLNAVLRRLGLMQPE
Hyraxes                SI-----NEVGSSSENIQAEISRNRPREPRLNAVLRRLGVMQPE
Sirenia                SI-----NEVGSSVNEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
TE_Amblysomus          SI-----NEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
Macroscelidae         SINEVGSSTNEVGSSINEVGSSGENIQAELDRNRGPELNAVLRRLGLMQPE
Orycteropus_TEAM      SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
'+Cynocephalus'       SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
Myotis_Tadarida        ST-----NEVGSSINEVGSSGENIQAELGRNRGSKLNAMLRLGLMQPE
Taphozous_Tonatia     ST-----NEVGSSINEVGSSGENIQAELGRNRGSKLNAVLRRLGLMQPE
Pteropus_Cynopterus   SIYEAGSSTNELGSSVNEVGSSGENIQAEISRNRGPKLNAVLRRLGLMQPE
Megaderma_Hipposideros NIYEADSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
Manis_C                SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAMLRLGLMQPE
Carnivores             SVNEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAMLRLGLMQPE
Cetacea                SINEVGSSTNEVGSSINEVGSSGENIQAKLDRNRGPKLSALLRLGLMQPE
BHC                    SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLSALLRLGLMQPE
Sus_BHC                SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLSAMLRLGLMQPE
Perissodactyla        SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAILRLGLMQPE
Insectivores          SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAMLRLGLMQPE
Glires                 SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
Sciurus_Glaucomys     SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
Aplodontia_SG         SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
ASG_Graphiurus        SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
Hystrix_OMMR          SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
Pedetes_OMMR          SINEVGSSTNEVGSSINEVGSSGENIQAELGRNRGPKLNAVLRRLGLMQPE
Mus_Rattus             SI-----NEVCSTGENVQOQLGRNRGPKVNTVPPLDSMQPG
Meriones_MR            SI-----NEVCSSGENVQOQLGRNRGPKVNTVPLPLDLMQPE
Oryzomys_MMR          SI-----NEVCSSGENVQOQLGRNRGPKLNTVPLPLGLMQPE
Tenrec_Echinops       SL-----NEVGSSSENIQAEIARNREPKLDAVLRRLGLVQPE
Wombat                RF-----ISIGSSGEGSQAQKGENKESELNTQPKLKLVPQP
Phascogale            -I-----ISVGSSGEGTQAEKSENKESELNTPPKLKLMPQP
Echymipera            RF-----ISRDSGEDSRAEKGKIKESELNTPTKFKLVQPQ
Shrew_Opossum         RF-----VGVDSGEGSQEKGKGENK---LN-----QSQ
Red_Kangaroo          -----
Wallaroo              -----
Tree_Kangaroo         -----
Possum                -----
Gallus                AV-----SETYFSSESNOVEKAQEVVDDK-GLMQHFQPSMPLCPT

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Xenopus_Prot_FASTA      KV-----K PSSNSAKNTTGQPDN--LNNPTQ-G-VTGS
1093                                     1133
HPG                      VYKQSLPGSNC---KHPEIKK-----QG-YEEVVQTVNTDFSPCLISDNL
Great_Apes              VYKQSLPGSNC---KHPEIKK-----QG-YEEVVQTVNTDFSPCLISDNL
OWMonkeys              VYKQSLPISNC---KHPEIKK-----QG-HEEVVQTVNTDFSPCLISDNL
Monkeys                 VYKQSLPISNC---KHPEIKK-----QG-HEEVVQTVNTDFSPCLISDNL
Primates               VYKQSLPISNC---KHPEIKR-----QGENEGVVQAVNTDFSPCLISDNL
'+Tupaia'              VYKQSLPISNC---KHPEIKR-----QGENEGVVQAVNTDFSPCLISDNL
Tamadua_Bradypus      VYKQSLPITNC---KHPEIKK-----QGENEEVVQAVNTDFSPCLISDNL
Armadillos             VYKQSLPITNC---KHPEIKR-----QGENEEAIQAVDNTDFSPCLISDNL
EuarchLauraXen        VYKQSLPISNC---KHPEIKR-----QGENEGVVQAVNTDFSPCLISDNL
Elephants              VYKQSLPISDC---KHPGIKT-----QGENEGVVQAVNTDFSPCLISDNL
Hyraxes                VYKQSLSISNC---KQPEIKK-----QGENEGVVQAVSTDFSACPISENL
Sirenia                VYKQSLPVSNC---KHPEIKR-----QGENEGVVQDVNMDFSPLISDNL
TE_Amblysomus         VYKQSLPISNC---KHPEIKR-----QGDNEGVVQAVNPDFSPCLISDNL
Macroscelidae         VYKQSLPTSNC---KHPEIKR-----PGENEGVIQAVNPDFSPCLISDNL
Orycteropus_TEAM     VYKQSLPISNC---KHPEIKR-----QGENEGVVQAVNTDFSPCLISDNL
'+Cynocephalus'      VYKQSLPISNC---KHPEIKR-----QGENEGVVQAVNTDFSPCLISDNL
Myotis_Tadarida       VYKPSLPVSNC---KHPEIKR-----QGENEGVVQAVNADFSPCQISDNL
Taphozous_Tonatia    VYKPSLPVSNC---KHPEIKR-----QGENEGVVQAVNADFSPCQISDNL
Pteropus_Cynopterus  VYKQSLPLSNC---KHPEIKR-----QGENEGVVQAVNADVSPRQISDNL
Megaderma_Hipposideros VYKQSLPVSNC---KHPEIKR-----QGENEGVVQAVNADFSPCQISDNL
Manis_C                VYKQSLPISNC---KHPEIKR-----QGENEGVVQAVNADFSPCLISDNL
Carnivores            VYKQSLPISNC---KHPEMKR-----QGENEGVVQSVNADFSPCLISDNL
Cetacea               VYKQSLPVSNC---QLPEIKR-----QGENEGTLQAVNADFSPCLISDNL
BHC                   VYKQSLPVSNC---QHPEIKR-----QGENEGILQAVNADFSPCLISDNL
Sus_BHC               VYKQSLPVSNC---KHPEIKR-----QGENEGIFQAVNADFSPCLISDNL
Perissodactyla       VYKQSLPISNC---KHPEIKR-----QGENEGVVQAVNADFSPCLISDNL
Insectivores         VYKQSLPISNC---KHPEIKR-----QGENEGVVQAVNTDFSPCLISDNL
Glires                VYKQSLPISNC---KHPEIKR-----QGENEGVVQAVNTDFSPCLISDNL
Sciurus_Glaucomys    ACKQNLNLL-SNC---KYPEIKR-----QGE-EGVVQVVNTDFSPCLISDDL
Aplodontia_SG        ACKQNLNLLVSNC---KYPEIKR-----QGE-EGVVQVVNTDFSPCLISDDL
ASG_Graphiurus        AYKQSLPVSNC---KHPEIKR-----QGE-EGVVQAVNTDFSPCLISDNL
Hystrix_OMMR          VYKQSLPVSNC---KHPEIKR-----QGENEGVVQAVNTDFSPCLISDNL
Pedetes_OMMR          VCKQSLPVSNC---KHPEIKR-----QGENEGVVQAVDADFSPCLISDNL
Mus_Rattus            VCKQSVPVSD---KYLEIKK-----Q-E-EG---AVSADFSPCLFSDHL
Meriones_MR           VCKQSVPVSDY---KYLEMCK-----Q-E-EG---AVGADFSPCLFSDHL
Oryzomys_MMR          VCKQSLPVSDY---KYLEMCK-----Q-E-EG---AVDADFSPCLFSDNL
Tenrec_Echinops      VCKESLPVIRKC---KHPEVKR-----QKNGGLVPAVNPDFSRYLMSHNP
Wombat                ICQQSFPQDNC---KESKRKG-----KGGNGKLAQAISTDSSPCL-----
Phascogale            VSQQTFFQNNC---K-----
Echymipera           VCQLSFSQDNC---KEPKRKG-----KGGNGILALATSTDSSPCL-----
Shrew_Opossum         VCQQS-----
Red_Kangaroo          -----
Wallaroo              -----
Tree_Kangaroo         -----
Possum                -----
Gallus                ACQQNPAEFNCELTEKKIITRERSLVKGNEERVIQTVSTGLSEFSVREAL

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Xenopus_Prot_FASTA      LYN-KQVMSDFP--MRLNVD-----EEHTNASAKGSQSSVADKST
1134
HPG                      EQ-PMGSSHASQVCSETPDD
Great_Apes              EQ-PMGSSHASQVCSETPDD
OWMonkeys               EQ-PMGSSHASQVCSETPDD
Monkeys                 EQ-PMGSSHASQVCSETPDD
Primates                EQ-PMGSSHASQVCSETPDD
'+Tupaia'              EQ-PMGSSHASQVCSETPDD
Tamadua_Bradypus       EL-PMGSSHASQICSETPDD
Armadillos              EL-PMGNSHASQICSETPDD
EuarchLauraXen         EQ-PMGSSHASQICSETPDD
Elephants               EQ-PVGTSRASQVCSETPDD
Hyraxes                 EQ-PVRSSHTSQVCSQTPDN
Sirenia                 EQ-PMGSSRASQICSETPDD
TE_Amblysomus          EQ-PMGSSHASQICSETPDD
Macroscelidae          EQ-PMGSSHASQICSETPDD
Orycteropus_TEAM       EQ-PMGSSHASQICSETPDD
'+Cynocephalus'       EQ-PMGSSHASQVCSETPDD
Myotis_Tadarida        EQ-PMGSSPASQVCSETPDD
Taphozous_Tonatia      EQ-PMGSSPASQVCSETPDD
Pteropus_Cynopterus    EQ-PMGNSNASQVCSETPDD
Megaderma_Hipposideros EQ-PMGSSHASQVCSETPDD
Manis_C                 EQ-PMGSSHASQVCSETPDD
Carnivores              EQ-PMGSSRASQVCSETPDD
Cetacea                 EQ-PMGRSHASQVCSETSDE
BHC                      EQ-PMGSSHASQVCSETPDD
Sus_BHC                 EQ-PMGSSHASQVCSETPDD
Perissodactyla         EQ-PMGSSCASQVCSETPDD
Insectivores           EQ-PMGSSHASQVCSETPDD
Glires                  EQ-PMGSSHASQVCSETPDD
Sciurus_Glaucomys      EQ-PMGNSHVTQVCSETPDD
Aplodontia_SG          EQ-PMGNSHVTQVCSETPDD
ASG_Graphiurus         EQ-PMGNSHASQVCSETPDD
Hystrix_OMMR           EQ-PMGSSHASQVCSETPDD
Pedetes_OMMR           EQ-PMGSGHVSQVCSETPDD
Mus_Rattus              EQ-PMRSGKIFQVCSETPDD
Meriones_MR            EQ-PMRSGNIFQVCSETPDD
Oryzomys_MMR           EQ-PMGSGNIFQVCSETPDD
Tenrec_Echinops        EQ-PMESNH-SQICSETPED
Wombat                  -----
Phascogale              -----
Echymipera              -----
Shrew_Opossum           -----
Red_Kangaroo            -----
Wallaroo                -----
Tree_Kangaroo           -----
Possum                  -----
Gallus                  EESLKGHSDFTDL-SETPDG

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Xenopus_Prot_FASTA

AHSNVNTDFISDINSATPDG

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end;