

CLUSTAL 2.0.3 multiple sequence alignment

Human\_isof MQLKIMPKKRSLAGRVPLILFLCQMISALEVPLDPKLLLEDLVQPPTITQQSPKDYIIDP  
Chimpanzee MQLKIMPKKRSLAGRVPLILFLCQMISALEVPLDPKLLLEDLVQPPTITQQSPKDYIIDP  
Mouse -----MPKKKHL SAGGVPLILFLCQMISALDVPLD-----LVQPPTITQQSPKDYIIDP  
Rat -----MPKKKPLSAGRAPLFLFLCQMISALDVPLDPKLLDDLVPPTITQQSPKDYIIDP  
Cattle\_iso -----  
Chicken -----MMKEKSI SASKASLVFFLCQMISALDVPLDSKLLLEELSQPPTITQQSPKDYIVDP

Human\_isof RENIVIQCEAKGKPPPSFSWTRNGTHFDIDKDPLVTMKGPTGTLIINIMSEGKAETYEGV  
Chimpanzee RENIVIQCEAKGKPPPSFSWTRNGTHFDIDKDPLVTMKGPTGTLIINIMSEGKAETYEGV  
Mouse RENIVIQCEAKGKPPPSFSWTRNGTHFDIDKDPLVTMKGSGTLVINIMSEGKAETYEGV  
Rat RENIVIQCEAKGKPPPSFSWTRNGTHFDIDKDPLVTMKGSGTLVINIMSEGKAETYEGV  
Cattle\_iso -----K GKPSPSFSWTRNGTHFDIDKDPLVTMKGSGTLVINIMSEGKAETYEGV  
Chicken RENIVIQCEAKGKPPPSFSWTRNGTHFDIDKDAQVTMKNPNSGTLVVNIMNGVKA EAYEGV  
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Human\_isof YQCTARNERGA AVSNNIVRPSRSPLWTKEKLEPITLQSGQSLVLP CRPPIGLPPPIIFW  
Chimpanzee YQCTARNERGA AVSNNIVRPSRSPLWTKEKLEPITLQSGQSLVLP CRPPIGLPPPIIFW  
Mouse YQCTARNERGA AVSNNIVRPSRSPLWTKERLEPIVLQNGQSLVLP CRPPIGLPPPIIFW  
Rat YQCTARNERGA AVSNNIVRPSRSPLWTKERLEPIILRSGQSLVLP CRPPIGLPPPIIFW  
Cattle\_iso YQCTARNERGA AISNNIVIRPSRSPLWTKEKLEPIILRNGQSLVLP CRPPIGLPPPIIFW  
Chicken YQCTARNERGA AISNNIVIRPSRSPLWTKEKLEPNHVREGDSLVLNCRPPVGLPPPIIFW  
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Human\_isof MDNSFQRLPQSERVSQGLNGDLYFSNVLPEDTREDYICYARFNHTQT IQQKQPI SVKVIS  
Chimpanzee MDNSFQRLPQSERVSQGLNGDLYFSNVLPEDTREDYICYARFNHTQT IQQKQPI SVKVIS  
Mouse MDNSFQRLPQSERVSQGLNGDLYFSNVLPEDTREDYICYARFNHTQT IQQKQPI SLKVIS  
Rat MDNSFQRLPQSERVSQGLNGDLYFSNVLPEDTREDYICYARFNHTQT IQQKQPI SLKVIS  
Cattle\_iso MDNSFQRLPQSERVSQGLNGDLYFSNVLPEDTREDYICYARFNHTQT IQQKQPI SVKVIS  
Chicken MDNAFQRLPQSERVSQGLNGDLYFSNVQPEDTRVDYICYARFNHTQT IQQKQPI SVKVF S  
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Human\_isof VDELNDTIAANLSDTEFYGAKSSRERPPTFLTPEGNASNKEELRGNVLSLECIAEGLPTP  
Chimpanzee -----AKSSRERPPTFLTPEGNASNKEELRGNVLSLECIAEGLPTP  
Mouse VDELNDTIAANLSDTEFYGAKSSKERPPTFLTPEGNESHKEELRGNVLSLECIAEGLPTP  
Rat VDELNDTIAANLSDTEFYGAKSSKERPPTFLTPEGNESHKEELRGNVLSLECIAEGLPTP  
Cattle\_iso VDELNDTIAANLSDTEFYGAKSHRQRPPTFLTPDGNTSRKEELRGNVLSLECIAEGLPTP  
Chicken -----TKPVTERPPVLLTPMGSTSNKVELRGNVLLLECIAAGLPTP  
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Human\_isof IIYWAKEDGMLPKNRTVYKNFEKTLQIIHVSEADSGNYQCI AKNALGAIHHTISVRVKAA  
Chimpanzee IIYWAKEDGMLPKNRTVYKNFEKTLQIIHVSEADSGNYQCI AKNALGAIHHTISVRVKAA  
Mouse IIYWIKEGMLPANRTFYRNFKKTLOITHVSEADSGNYQCI AKNALGAVHHTISVTVKAA  
Rat VIYWIKEGDTLPVNRTFYRNFKKTLOIIHVSEADSGNYQCI AKNALGAVHHTISVTVKAA  
Cattle\_iso IIYWIKEGDTLPINRTFYRNFKKTLOIVQVTEADSGNYQCI AKNALGAIHHTISVTVKAA  
Chicken VIRWIKEG GELPANRTFFENFKKT LKIIDVSEADSGNYKCTARNTLGSTHHVISVTVKAA  
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Human\_isof PYWITAPQNLVLSPEGEDGTLICRANGNPKPRISWLTNGVPIE IAPDDPSRKIDGDTIIFS  
Chimpanzee PYWITAPQNLVLSPEGEDGTLICRANGNPKPRISWLTNGVPIE IAPDDPSRKIDGDTIIFS  
Mouse PYWIVAPQNLVLSPEGENGTLICRANGNPKPRISWLTNGVPIE IALDDPSRKIDGDTIIFS  
Rat PYWIVAPHNLVLSPEGENGTLICRANGNPKPRISWLTNGVPIE IALDDPSRKIDGDTIMFS  
Cattle\_iso PYWIIAPQNLVLSPEEDGTLICRANGNPKPRISWLSNGVPIE IAPDDPSRKIDGDTIIFS

Chicken PYWITAPRNLVLSPEGEDGTLICRANGNPKPISISWLTNGVPIAIAPEPDSRKVDGDTIIFS  
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Human\_isof NVQERSSAVYQCNASNEYGYLLANAFVNVLAEPPIRLTPANTLYQVIANRPALLDCAFFG  
 Chimpanzee NVQERSSAVYQCNASNEYGYLLANAFVNVLAEPPIRLTPANTLYQVIANRPALLDCAFFG  
 Mouse NVQESSSAVYQCNASNKYGYLLANAFVNVLAEPPIRLTSANTLYQVIANRPALLDCAFFG  
 Rat NVQESSSAVYQCNASNKYGYLLANAFVNVLAEPPIRLTSANTLYQVIANRPALLDCAFFG  
 Cattle\_iso KVQERSSAVYQCNASNEYGYLLANAFVNVLAEPPIRLTSANTLYQVIANRPALLDCAFFG  
 Chicken AVQERSSAVYQCNASNEYGYLLANAFVNVLAEPPIRLTPANKLYQVIADSPALIDCAYFG  
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Human\_isof SPLPTIEWFKGAKGSALHEDIYVLHENGTLIPVAQKDSTGTYTCVARNKLGMAKNEVHL  
 Chimpanzee SPLPTIEWFKGAKGSALHEDIYVLHENGTLIPVAQKDSTGTYTCVARNKLGMAKNEVHL  
 Mouse SPMPPTIEWFKGKGSALHEDIYVLHDNGTLEIPVAQKDSTGTYTCVARNKLGMAKNEVHL  
 Rat SPMPPTIEWFKGKGSALHEDIYVLHDNGTLEIPVAQKDSTGTYTCVARNKLGMAKNEVHL  
 Cattle\_iso SPLPTIEWFKGAKGSALREDIYVLHENGTLIPVAQKDSTGTYTCVARNKLGMAKNDVHL  
 Chicken SPKPEIEWFRGVKGSILRGNEYVFHDNGTLEIPVAQKDSTGTYTCVARNKLGKQTQNEVQL  
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Human\_isof EIKDPTWIVKQPEYAVVQRGSMVSFECKVKHDHTLSLTVLWLKDNRELPSDERFTVDKDH  
 Chimpanzee EIKDPTWIVKQPEYAVVQRGSMVSFECKVKHDHTLSLTVLWLKDNRELPSDERFTVDKDH  
 Mouse EIKDPTRIIKQPEYAVVQRGSKVSFECKVKHDHTLIPTIMWLKDNRELPSDERFSTDKDH  
 Rat EIKDPTRFIKQPEYAVVQRGSKVSFECKVKHDHTLIPTILWLKDNRELPSDERFVSVDKDH  
 Cattle\_iso EIKDPTRIIKQPEYAVVQRGSTVSFECKVKHDHTLIPTVMWLKDNRELPSDERFVVDKDR  
 Chicken EVKDPTRMIKQPOYKVIQSAQASFECKVKHDHTLIPTVIWLKDNRELPSDERFVVDKDR  
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Human\_isof LVVADVSDDSGTYTCVANTTLDVSVASAVLSVVAPTPTPAPVYDVPNPPFDLELTDQLD  
 Chimpanzee LVVADVSDDSGTYTCVANTTLDVSVASAVLSVVAPTPTPAPVYDVPNPPFDLELTDQLD  
 Mouse LVVSDVKDDGGTYTCTANTTLDVSVASAVLRVVAPTPTPAPIYDVPNPPFDLELTDQLD  
 Rat LVVSDVKDEDGGTYTCAANTTLDVSVASAVLRVVAPTPTPAPIYDVPNPPFDLELTDQLD  
 Cattle\_iso LVVADVNDGGTYTCTANTTLDVSVASAVLSVVAPTPTPAPIYDVPNPPFDLELTDQLD  
 Chicken LTIMNVTDKDDGTYTCTIVNTTLDVSVASAVLTVVAAPPTPAIIYARNPPFDLELTDGQLE  
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Human\_isof KSVQLSWTPGDDNNSPITKFIIEYEDAMHKPGLWHHQTEVSGTQTTAQLKLSPVVNSFR  
 Chimpanzee KSVQLSWTPGDDNNSPITKFIIEYEDAMHEPGLWHHQTEVSGTQTTAQLKLSPVVNSFR  
 Mouse KSVQLTWTPGDDNNSPITKFIIEYEDAMHDAGLRHQAQEVSGTQTTAQLKLSPVVNSFR  
 Rat KSVQLTWTPGDDNNSPITKFIIEYEDAMHEAGLRHQAQEVSGTQTTAQLKLSPVVNSFR  
 Cattle\_iso RSVQLSWTPGDDNNSPITKFIIEYEDAMHEPGLWHHQTEVPGTQTTAQLKLSPVVNSFR  
 Chicken RSIELSWVPGEENNSPITNFVIEYEDGLHEPGVWHYQTEVPGSHTTVQLKLSPVVNSFR  
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Human\_isof VMAVNSIGKSLPSEASEQYLTKASEPDKNPTAVEGLGSEPDNLVITWKPLNGFESNGPGL  
 Chimpanzee VMAVNSIGKSLPSEASEQYLTKASEPDKNPTAVEGLGSEPDNLVITWKPLNGFESNGPGL  
 Mouse VMAENSIGRSPSEASEQYLTKAAEPDQNPMAVEGLGTEPDNLVITWKPLNGFQSNPGL  
 Rat VMAENSIGRSPSEASEQYLTKAAEPDQNPMAVEGLGTEPDNLVITWKPLNGFQSNPGL  
 Cattle\_iso VMAENNLGRSLPSEASEQYLTKAAEPDKNPTAVEGLGSEPDNLVITWKPLNGFESNGPGL  
 Chicken VIAVNEIGRSPSEASEQYLTKSANPDENPSNVQIGSEPDNLVITWESLKGFOQSNPGL  
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Human\_isof QYKVSQRQKGDDEWTSVVVANVSKYIVSGTPTFPVYLIKVALNDMGFAPEPAVVMGHS  
 Chimpanzee QYKVSQRQKGDDEWTSVVVANVSKYIVSGTPTFPVYLIKVALNDMGFAPEPAVVMGHS  
 Mouse QYKVSQRQKGDDEWTSVVVANVSKYIVSGTPTFPVYLIKVALNDVGFAPPEPAVVMGHS  
 Rat QYKVSQRQKGDDEWTSVVVANVSKYIVSGTPTFPVYLIKVALNDVGFAPPEPAVVMGHS  
 Cattle\_iso QYKVSQRQKGDDEWTSVVVANVSKYIVSGTPTFPVYLIKVALNDAGFAPEPAVVMGHS  
 Chicken QYKVSQRQKDVDEWTSVVVANVSKYIVSGTPTFPVYLIKVALNDLGYAPEPEVIGHS

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Human\_isof GEDLPMVAPGNVRVNVVNSTLAEVHWDVPVPLKSIRGHLOGYRIYYWKTQSSSKRNRHIE
Chimpanzee GEDLPMVAPGNVRVNVVNSTLAEVHWDVPVPLKSIRGHLOGYRIYYWKTQSSSKRNRHIE
Mouse GEDLPMVAPGNVRVSVVNSTLAEVHWDVPVPPKSVRGHLOGYRIYYWKTQSSSKRNRHIE
Rat GEDLPMVAPGNVRVSVVNSTLAEAHWDVPVPPKSVRGHLOGYRIYYWKAQSSSKRNRHIE
Cattle\_iso GEDLPMVAPGNVRVNVVNSTLAEVHWDVPVPLKSIRGHLOGYRIYYWKAQSSLTRNRHIE
Chicken GEDLPMVAPGNVQVHVINSTLAKVHWDVPVPLKSVRGHLOGYKVYYWVKVQSLSRRSKRHVE
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Human\_isof KKILTFQGSKTHGMLPGLPFSHYTLNVRVNVNGKGE GPASPDRVFNTPEGVPSAPSSLKI
Chimpanzee KKILTFQGSKTHGMLPGLPFSHYTLNVRVNVNGKGE GPASPDRVFNTPEGVPSAPSSLKI
Mouse KKILTFQGTKTHGMLPGLQPYSHYALNVRVNVNGKGE GPASTDRGFHTPEGVPSAPSSLKI
Rat KKILTFQGSKTHGMLPGLQPYSHYVLNVRVNVNGKGE GPASADRGFHTPEGVPSAPSSLKI
Cattle\_iso KKILTFQGSKTHGMLPGLPFSHYTLNVRVNVNGKGE GPASPKVFNTPEGVPSAPSSLKI
Chicken KKILTFRGNKTFGMLPGLPYSYKLNVRVNVNGKGE GPASPKVFKTPEGVPSPPSFLKI
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Human\_isof VNPTLDSLTLLEWDPPSHPNGILTEYTLKYQPINSTHELGPLVDLKIIPANKTRWTLKLNLF
Chimpanzee VNPTLDSLTLLEWDPPSHPNGILTEYTLKYQPINSTHELGPLVDLKIIPANKTRWTLKLNLF
Mouse VNPTLDSLTLLEWDPPSHPNGILTEYILOQYQPINSTHELGPLVDLKIIPANKTRWTLKLNLF
Rat VNPTLDSLTLLEWDPPSHPNGILTEYILKYQPINSTHELGPLVDLKIIPANKTRWTLKLNLF
Cattle\_iso VNPTLDSLTLLEWPPSHPNGILTEYTLKYQPINSTHELGPLVDLKIIPANKTRWILKLNLF
Chicken TNPTLDSLTLLEWGSPTHPNGVLTSYILKFQPINSTHELGPLVEIRIPANESSLILKLNLY
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Human\_isof STRYKFYFYAQTSAAGSGSQITEEA VTTVDEAGILPPDVGAGKVQAVNPRISNLTAAA AET
Chimpanzee STRYKFYFYAQTSAAGSGSQITEEA VTTVDEA-----
Mouse STRYKFYFYAQTSAAGSGSQITEEA ITTVDEAGIPPPDVGAGK-----
Rat STRYKFYFYAQTSAAGSGSQITEEA ITTVDEAGILPPDVGAGKVRVAVSPRIGNVTAAA AET
Cattle\_iso STRYKFYFYAQTAAAGSGIQITEEA ITTVDEAGILPPDVGAGKAVYPG--ISKLTAAA AET
Chicken STRYKFYFNAQTSAAGSGSQITEEA VTIMDEVQPLYPRIN-----VTTAAA AET
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Human\_isof YANISWEYEGPEHVNFYVEYGVAGSKEEWRKEIVNGSRFFGLKGLMPGTAYKVRVGA VG
Chimpanzee -----
Mouse -----KEEWRKEIVNGSRFFGLKGLMPGTAYKVRVGA EG
Rat YANISWEYEGPEHVNFYVEYGVAGSKEEWRKEIVNGSRFFGLKGLMPGTAYKVRVGA EG
Cattle\_iso SANISWEYEGPELVNFYVEYGVAGSKEEWRREIVNGSRFFGLKGLMPGTAYKVRVGA EG
Chicken YANISWEYEGPDHANFYVEYGVAGSKEDWKKEIVNGSRFFVFLKGLTPGTAYKVRVGA EG

Human\_isof DSGFVSSDVFETGPAMASRQVDIATQGWFIGLMCAVALLILILLIVCFIRR NKGKYPV
Chimpanzee -----MASRQVDIATQGWFIGLMCAVALLILILLIVCFIRR NKGKYPV
Mouse DSGFVSSDVFETGPAMASRQVDIATQGWFIGLMCAVALLILILLIVCFIRR NKGKYPV
Rat DSGFVSSDVFETGPAMASRQVDIATQGWFIGLMCAVALLILILLIVCFIRR NKGKYPV
Cattle\_iso DSGFVSSDVFETGPAMASRQVDIATQGWFIGLMCAVALLILILLIVCFIRR NKGKYPV
Chicken LSGFRSSEDLFETGPAMASRQVDIATQGWFIGLMCAVALLILILLIVCFIRR NKGKYPV
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Human\_isof KEKEDAHADPEIQPMKEDDGTGFEYS DAEDHKPLKKSRTPSDRTVKKEDSDDSLVDYGE
Chimpanzee KEKEDAHADPEIQPMKEDDGTGFEYS DAEDHKPLKKSRTPSDRTVKKEDSDDSLVDYGE
Mouse KEKEDAHADPEIQPMKEDDGTGFEYS DAEDHKPLKKSRTPSDRTVKKEDSDDSLVDYGE
Rat KEKEDAHADPEIQPMKEDDGTGFEYS DAEDHKPLKKSRTPSDRTVKKEDSDDSLVDYGE
Cattle\_iso KEKEDAHADPEIQPMKEDDGTGFEYS DAEDHKPLKKSRTPSDRTVKKEDSDDSLVDYGE
Chicken KEKEDAHADPEIQPMKEDDGTGFEYS DAEDHKPLKKSRTPSDRTVKKEDSDDSLVDYGE
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Human_isof      GVNGQFNEDGSFIGQYSGKKEKEPAEGNESSEAPSPVAMNSFV
Chimpanzee     GVNGQFNEDGSFIGQYSGKKEKEPAEGNESSEAPSPVAMNSFV
Mouse          GVNGQFNEDGSFIGQYSGKKEKEPAEGNESSEAPSPVAMNSFV
Rat            GVNGQFNEDGSFIGQYSGKKEKEPAEGNESSEAPSPVAMNSFV
Cattle_iso     GVNGQFNEDGSFIGQYSGKKEKEPAEGNESSEAPSPVAMNSFV
Chicken        GVNGQFNEDGSFIGQYSGKKEKEPAEGNESSEAPSPVAMNSFV
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