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# UCC

**University College Cork, Ireland**  
Coláiste na hOllscoile Corcaigh

## Human ASXL1 (GenBank accession NM\_015338)

Zero-frame product (ASXL1)

MKDKQKKKERTWAEARLVLENYSAPMTPKQILQVIEAEGLEKEMRSGTSPPLACL NAMLHNSRGGEGLFYKLPGRISLFTLKKDALQW  
SRHPATVEGEEPEADTVESCGSNEASTVSGENDVSLDETSSNASCSTESQSRPLSNPRDSYRASSQANKQKKKTGMVLPVRLTPLKVN  
GAHVESASGFGCHADGESGSPSSSSSSGSLALGSAAIRGQAEVTDQAPALLRGRFRKPATGQMKRNRGEEIDFETPGSILVNTNLRALINS  
RTFFHALPSHFQQQLFLLPEVDRQVGTGDLRLSSALNNEFFTHAAQSWRERLADGEFTHEMQVIRIQEMEKEKKVEQWKEKFFEDYYG  
QKLG LTKESLQQNVGQEEAEIKSGLCVPGESVRIQRG PATRQRDGHFKKRSRDLRTRARRNLYKKQEQAGVAKDAKSVASDVPLYK  
DGEAKTDPAGLSSPHLPGTSSAAPDLEGEFPFVESVASRIQAEPNLARASASPDRI PSLPQETVDQEPKDKRKSFEQAASASFPEKKP  
RLEDQRSFRNTIESVHTEKQPPTKEEKPVPPIRIQLSRIKPPWVVKQPTYQICPRIIPTTESSCRGWTGARTLADIKARALQVRGARGH  
HCHREATAIIGGGGGPGGGGGATDEGGGRSSSSDGGEACGHPEPRGGPSTPGKCTSDLQRTQLLPPYPLNGEHTQAGTAMSRARRED  
LPSLRKEESCLLRATVGLTDGLGDASQLPVAPTGDQPCQALPLSSQTSVAERLVEQPQLHPDVRTECESGTTSWESDDEEQGPTVPAD  
NGIIPSLVGD DTLLEKGTGQALD SHPTMKDPVNVTPSSSTPESSPTDCLQNRADFDELGLGGSCPPMRESDRQENLKTALVSNSSLHWIP  
IPSNDEVVQPKPESREHIPSVEPQVGEWEKAAPTPPALPGDLTAEGLDPLDSL TSLWTVPSRGGSDSNGSYCQQVDIEK LKINGDSE  
ALSPHGESTDTASDFEGHLEDSSSEADTREAAVTKGSSVDKDEKPNWNQSAPLSKVNGDMRLVTRTDGMVAPQSWVSRVCAVRQKIPDSL  
LLASTEYQPRAVCLSMGSSVEATNPLVMQLLQGS LPLEKVLPPAHDDSMSESPQVPLTKDQSHGSLRMGSLHGLGKNSGMVDGSSPSSL  
TAGAGPQETNMKEPLATLVDQSPESLKRKSSLTQEEAPVSWEKRPV TENRQHQQPFQVSPQFLNRGDRIQVRKVPPLKIPVSRISMP  
KSPGDLTTSRTPRFSSPNVISFGPEQTGRALGDQSNVTGQKGLFGSGNVAATLQRPRPADPMP LPAEIPVFPSPGKLPSTNSMGGVQ  
TPREDWAPKPHAFVGSVKNEKTFVGGPLKANAENRKATGHSPL ELVGHLEGMPFVMDL PFWKLPREP GKLSEPLEPSSLP SLSIKQAF  
YGKLSKLQLSSTSFNYSSSPTFPKGLAGSVVQLSHKANFGASHASLSLQMF TDSSTVESISLQCACSLKAMIMCQCGGAFCHDDCIGP  
SKLCVLCLVVR

Frameshift product (ASXL1-TF; TF sequence in red)

MKDKQKKKERTWAEARLVLENYSAPMTPKQILQVIEAEGLEKEMRSGTSPPLACL NAMLHNSRGGEGLFYKLPGRISLFTLKKDALQW  
SRHPATVEGEEPEADTVESCGSNEASTVSGENDVSLDETSSNASCSTESQSRPLSNPRDSYRASSQANKQKKKTGMVLPVRLTPLKVN  
GAHVESASGFGCHADGESGSPSSSSSSGSLALGSAAIRGQAEVTDQAPALLRGRFRKPATGQMKRNRGEEIDFETPGSILVNTNLRALINS  
RTFFHALPSHFQQQLFLLPEVDRQVGTGDLRLSSALNNEFFTHAAQSWRERLADGEFTHEMQVIRIQEMEKEKKVEQWKEKFFEDYYG  
QKLG LTKESLQQNVGQEEAEIKSGLCVPGESVRIQRG PATRQRDGHFKKRSRDLRTRARRNLYKKQEQAGVAKDAKSVASDVPLYK  
DGEAKTDPAGLSSPHLPGTSSAAPDLEGEFPFVESVASRIQAEPNLARASASPDRI PSLPQETVDQEPKDKRKSFEQAASASFPEKKP  
RLEDQRSFRNTIESVHTEKQPPTKEEKPVPPIRIQLSRIKPPWVVKQPTYQICPRIIPTTESSCRGWTGARTLADIKARALQVRGARGH  
HCHREATAIIGGGGGPGGGGGATDEGGGRSSSSDGGEACGHPEPRGGPSTPGKCTSDLQRTQLLPPYPLNGEHTQAGTAMSRARRED  
LPSLRKEESCLLRATVGLTDGLGDASQLPVAPTGDQPCQALPLSSQTSVAERLVEQPQLHPDVRTECESGTTSWESDDEEQGPTVPAD  
NGIIPSLVGD DTLLEKGTGQALD SHPTMKDPVNVTPSSSTPESSPTDCLQNRADFDELGLGGSCPPMRESDRQENLKTALVSNSSLHWIP  
IPSNDEVVQPKPESREHIPSVEPQVGEWEKAAPTPPALPGDLTAEGLDPLDSL TSLWTVPSRGGSDSNGSYCQQVDIEK LKINGDSE  
ALSPHGESTDTASDFEGHLEDSSSEADTREAAVTKGSSVDKDEKPNWNQSAPLSKVNGDMRLVTRTDGMVAPQSWVSRVCAVRQKIPDSL  
LLASTEYQPRAVCLSMGSSVEATNPLVMQLLQGS LPLEKVLPPAHDDSMSESPQVPLTKDQSHGSLRMGSLHGLGKNSGMVDGSSPSSL  
TAGAGPQETNMKEPLATLVDQSPESLKRKSSLTQEEAPVSWEKRPV TENRQHQQPFQVSPQFLNRGDRIQVRKVPPLKIPVSRISMP  
KSPGDLTTSRTPRFSSPNVISFGPEQTGRALGDQSNVTGQKGLFGSGNVAATLQRPRPADPMP LPAEIPVFPSPGKLPSTNSMGGVQ  
TPREDWAPKPHAFVGSVKNEKTFVGGPLKANAENRKATGHSPL ELVGHLEGMPFVMDL PFWKLPREP GKLSEPLEPSSLP SLSIKQAF  
YGKLSKLQLSSTSFNYSSSPTFPKGLAGSVVQLSHKANFGASHASLSLQMF TDSSTVESISLQCACSLKAMIMCQCGGAFCHDDCIGP  
SKLCVLCLVVR

## Human ASXL2 (GenBank accession NM\_018263)

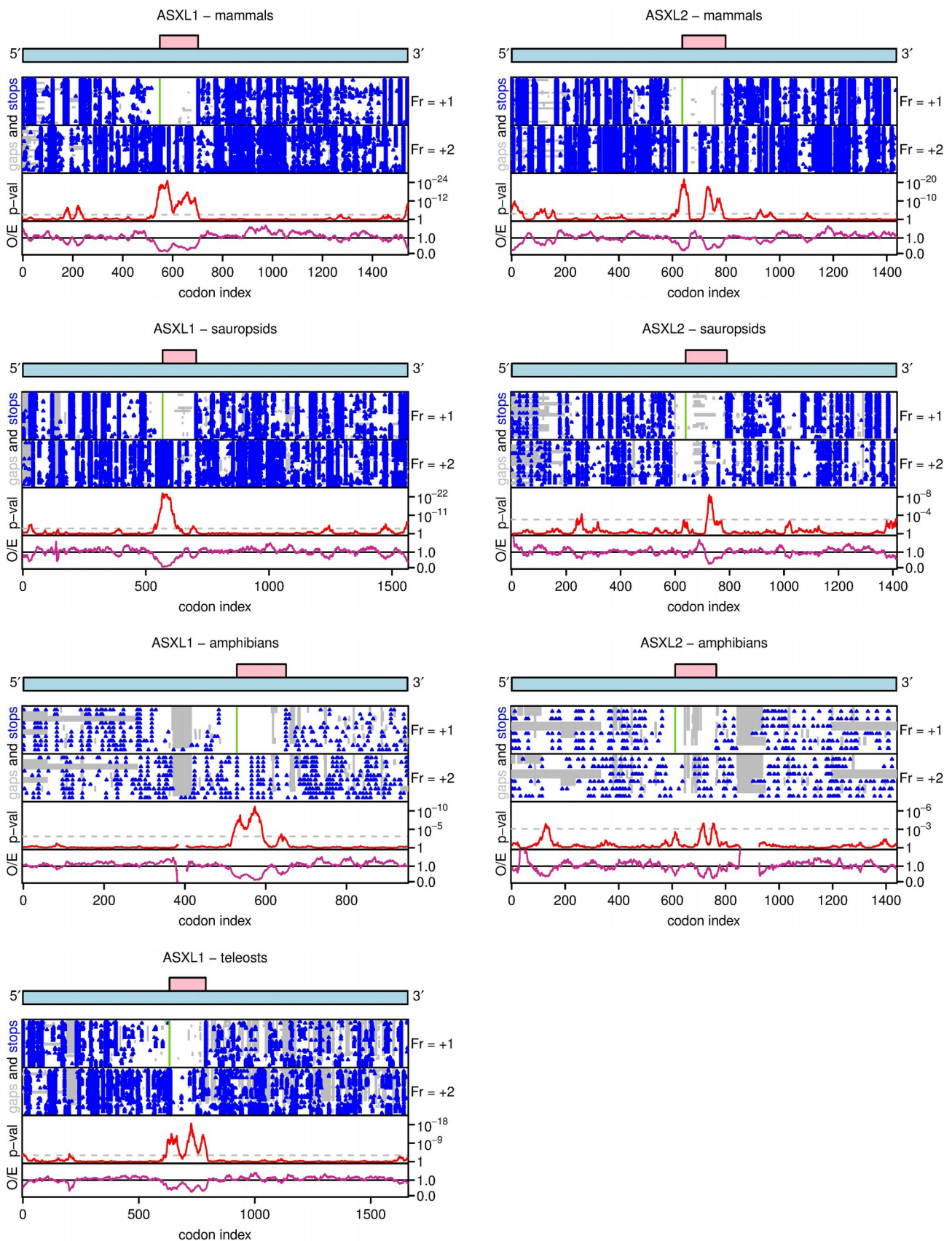
Zero-frame product (ASXL2)

MREKGRKKKGRTWAEAAKTVLEKYPNTPMHSKIEILQVIQREGLKEIRSGTSPPLACL NAMLHTNSRGGEGIFYKVPGRMGVYTLKKDVPDG  
VKELSEGSEESSDQSDSQSSENSSSSSDGGSNKEGKSRWKRKVVSSSPQSGCPSPTIPAGKVISPSQKHSKALKQALKQKQKQKQKQ  
QCRPSISISSNQHL SLKTVKAASDSVPAKPATWEGKQSDGQTGSPQNSNSFFSSSVKVENTLLGLGKKSFRSERLHTRQMKRTKCADID  
VETPDSILVNTNLRALINKHTF SVLPDGCQQRLLLLPEVDRQVGP DGLMKNLSALNNEFFTSAAQGWKERLSEGEFTPEMQVIRIQEI  
EKEKVEPWEKQEFESYGGSSGLSLED SKLTASPDPKVKTTPAEQPKSMPVSEASLIRIVPVVSQSECKEALQMSPPGRKEECESQ  
GEVQPNFSTSEPLSSALNTHLSSILPIKCPKDEDLLEQKPVTSAEQSEKNHLTASNYNKSESQESLVTSPSKPKSPGVEKPIVKP  
TAGAGPQETNMKEPLATLVDQSPESLKRKSSLTQEEAPVSWEKRPV TENRQHQQPFQVSPQFLNRGDRIQVRKVPPLKIPVSRISMP  
FHPSQVSPRARFPV SITSPNRTGARTLADIKAKAQLVKAQRAAAAAAAAAAAAAASVGGTIPGPGGGGQGGEGGQTARGGSPGSDRV  
SETGKPTLELAGTSGRGGTRELPCGPETQPQSETKTTPSQAPHSVSGAQLQQT PPVPTPAVSGACTSVPSPAHIEKLDNEKLNPT  
ATATVASVSHPQGPSSCRQEKAPSPTGPALISGASPVHCAADGTVELKAGPSKNIPNPSASSKTDASVPVAVTPSPLTSLTTATLEKLP  
VPQVATTAPAGSAPPSTLPAASSLKTGPTSLNMNGPTLRPTSSIPANNPLVTLQLQGKDVPMQILPKPLTKVEMKTVPLTAKEERG  
GAL IATNTTENSTREEVNERQSHPATQQQLGKTLQSKQLPQVPRPLQLFSAKELRDSIDTHQYHEGLSKATQDQILQTLIQRVRRQNL  
SVVPPSQFNFAHSGFLEDISTSRFMLGFAGRRTSKPAMAGHYLLNISTYGRGSEFRRTHSVNPEDRFCLSSPTEALKMGYTDCKNAT  
GESSSSKEDDTDEESTGDEQESVTVKEEPQVQSAGKGDTS SGPHSRETLSTSDCLASKNVKAEIPLNEQTTL SKENYLFTRGQTFDEKT  
LARDLIQAAQKQMAHAVRGKAIRSSPELFSSTVLPADSPHQLPLLPPLQTPKLYGSPTQIGPSYRGMINVSTSSMDHNSAVPQS  
SSNVGDVMSFSVTVTIPASQAMNPSSHGQTI PVQAFSEENSI EGTSPSKCYCR LKAMIMCKGCGAFCHDDCIGPSKLCVSLVVR

Frameshift product (ASXL2-TF; TF sequence in red)

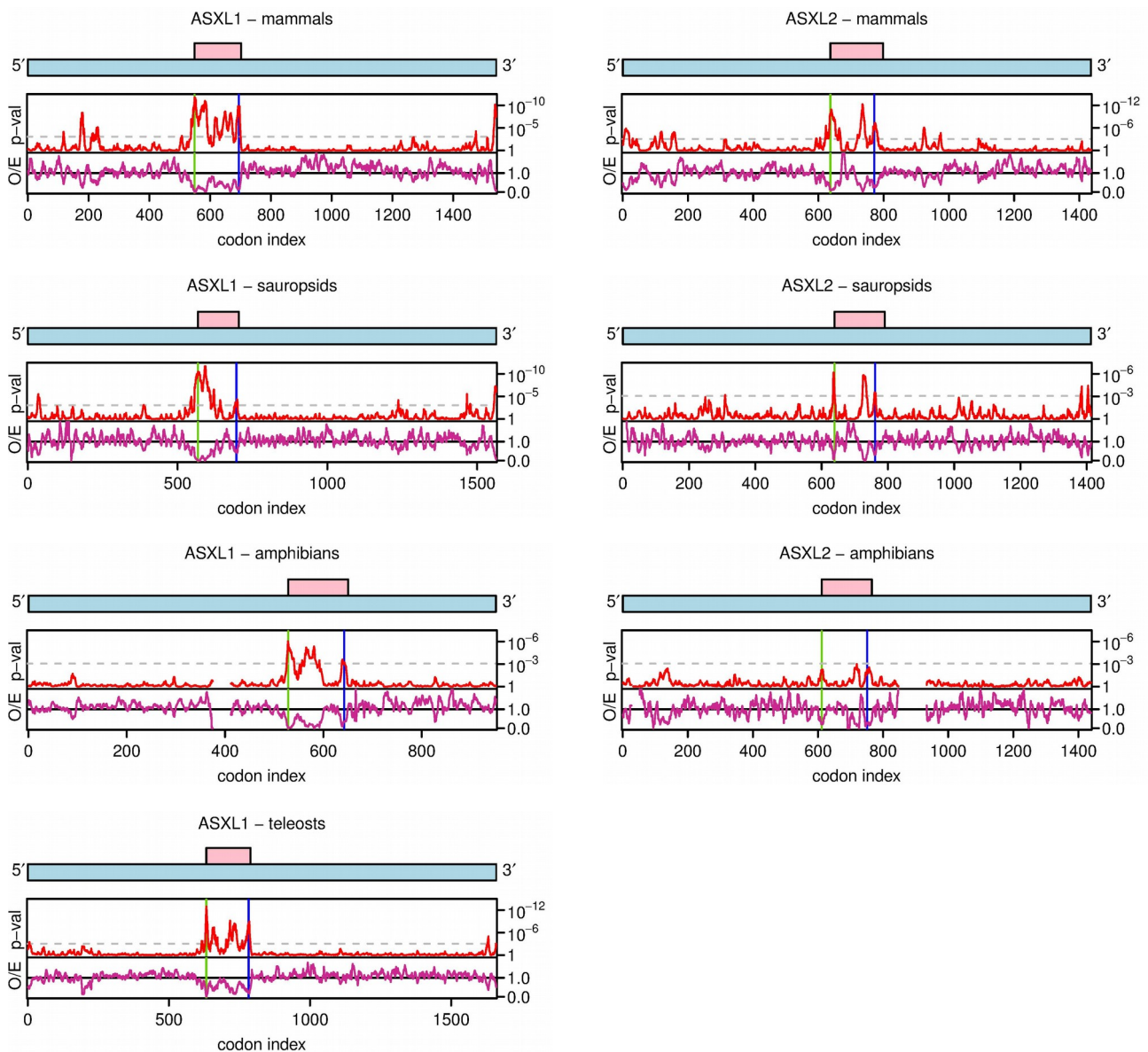
MREKGRKKKGRTWAEAAKTVLEKYPNTPMHSKIEILQVIQREGLKEIRSGTSPPLACL NAMLHTNSRGGEGIFYKVPGRMGVYTLKKDVPDG  
VKELSEGSEESSDQSDSQSSENSSSSSDGGSNKEGKSRWKRKVVSSSPQSGCPSPTIPAGKVISPSQKHSKALKQALKQKQKQKQKQ  
QCRPSISISSNQHL SLKTVKAASDSVPAKPATWEGKQSDGQTGSPQNSNSFFSSSVKVENTLLGLGKKSFRSERLHTRQMKRTKCADID  
VETPDSILVNTNLRALINKHTF SVLPDGCQQRLLLLPEVDRQVGP DGLMKNLSALNNEFFTSAAQGWKERLSEGEFTPEMQVIRIQEI  
EKEKVEPWEKQEFESYGGSSGLSLED SKLTASPDPKVKTTPAEQPKSMPVSEASLIRIVPVVSQSECKEALQMSPPGRKEECESQ  
GEVQPNFSTSEPLSSALNTHLSSILPIKCPKDEDLLEQKPVTSAEQSEKNHLTASNYNKSESQESLVTSPSKPKSPGVEKPIVKP  
TAGAGPQETNMKEPLATLVDQSPESLKRKSSLTQEEAPVSWEKRPV TENRQHQQPFQVSPQFLNRGDRIQVRKVPPLKIPVSRISMP  
FHPSQVSPRARFPV SITSPNRTGARTLADIKAKAQLVKAQRAAAAAAAAAAAAAASVGGTIPGPGGGGQGGEGGQTARGGSPGSDRV  
SETGKPTLELAGTSGRGGTRELPCGPETQPQSETKTTPSQAPHSVSGAQLQQT PPVPTPAVSGACTSVPSPAHIEKLDNEKLNPT  
ATATVASVSHPQGPSSCRQEKAPSPTGPALISGASPVHCAADGTVELKAGPSKNIPNPSASSKTDASVPVAVTPSPLTSLTTATLEKLP  
VPQVATTAPAGSAPPSTLPAASSLKTGPTSLNMNGPTLRPTSSIPANNPLVTLQLQGKDVPMQILPKPLTKVEMKTVPLTAKEERG  
GAL IATNTTENSTREEVNERQSHPATQQQLGKTLQSKQLPQVPRPLQLFSAKELRDSIDTHQYHEGLSKATQDQILQTLIQRVRRQNL  
SVVPPSQFNFAHSGFLEDISTSRFMLGFAGRRTSKPAMAGHYLLNISTYGRGSEFRRTHSVNPEDRFCLSSPTEALKMGYTDCKNAT  
GESSSSKEDDTDEESTGDEQESVTVKEEPQVQSAGKGDTS SGPHSRETLSTSDCLASKNVKAEIPLNEQTTL SKENYLFTRGQTFDEKT  
LARDLIQAAQKQMAHAVRGKAIRSSPELFSSTVLPADSPHQLPLLPPLQTPKLYGSPTQIGPSYRGMINVSTSSMDHNSAVPQS  
SSNVGDVMSFSVTVTIPASQAMNPSSHGQTI PVQAFSEENSI EGTSPSKCYCR LKAMIMCKGCGAFCHDDCIGPSKLCVSLVVR

## Supplementary Figure 1. Amino acid sequences of human ASXL and ASXL-TF polypeptides.



**Supplementary Figure 2. Synonymous site conservation in the *ASXL1* and *ASXL2* coding regions in different vertebrate clades.** In each subfigure, the top panel shows a schematic of the zero-frame ORF (pale blue) and the overlapping *TF* ORF (pink). The next two panels show positions of stop codons (blue) in the +1 and +2 reading frames, and alignment gaps (grey) in each

sequence of the sequence alignment. The vertical green line in the +1 frame panel shows the position of the putative frameshift site. The bottom two panels show the synonymous site conservation analysis, with the magenta line (lower panel) indicating the ratio of the observed number of substitutions within a given window to the number expected under a null model of neutral evolution at synonymous sites, and the red line (upper panel) showing the corresponding  $p$ -value. The analysis uses a 25-codon sliding window. The horizontal dashed grey line indicates a  $p = 0.05$  threshold after a correction for multiple testing (namely scaling by [25-codon window size]/[ASXL CDS length]).



**Supplementary Figure 3. Synonymous site conservation in the *ASXL1* and *ASXL2* coding regions in different vertebrate clades.** In each subfigure, the top panel shows a schematic of the zero-frame ORF (pale blue) and the overlapping *TF* ORF (pink). The bottom two panels show the synonymous site conservation analysis, with the magenta line (lower panel) indicating the ratio of the observed number of substitutions within a given window to the number expected under a null model of neutral evolution at synonymous sites, and the red line (upper panel) showing the corresponding *p*-value. The analysis uses a 9-codon sliding window. The horizontal dashed grey line indicates a  $p = 0.05$  threshold after a correction for multiple testing (namely scaling by  $[9\text{-codon window size}]/[\text{ASXL CDS length}]$ ). The vertical green and blue lines show the positions of the putative frameshift site and the conserved EH[N/S]Y, respectively.

Human ASXL1 (GenBank accession NM\_015338) - *TF* ORF region

CUG AGC AGU CCC CAU CUG CCA GGC ACA UCC UCU GCA GCA CCC GAC CUG GAG GGU CCC GAA  
 UUC CCA GUU GAG UCU GUG GCU UCU CGG AUC CAG GCU GAG CCA GAC AAC UUG GCA CGU GCC  
 UCU GCA UCU CCA GAC AGA AUU CCU AGC CUG CCU CAG GAA ACU GUG GAU CAG GAA CCC AAG  
 GAU CAG AAG AGG AAA UCC UUU GAG CAG GCG GCC UCU GCA UCC UUU CCC GAA AAG AAG CCC  
 CGG CUU GAA GAU CGU CAG UCC UUU CGU AAC ACA AUU GAA AGU GUU CAC ACC GAA AAG CCA  
 CAG CCC ACU AAA GAG GAG CCC AAA GUC CCG CCC AUC CGG AUU CAA CUU UCA CGU AUC AAA  
 CCA CCC UGG GUG GUU AAA GGU CAG CCC ACU UAC CAG AUA UGC CCC CGG AUC AUC CCC ACC  
 ACG GAG UCC UCC UGC CGG GGU UGG ACU GGC GCC AGG ACC CUC GCA GAC AUU AAA GCC CGU  
 GCU CUG CAG GUC CGA GGG GCG AGA GGU CAC CAC UGC CAU AGA GAG GCG GCC ACC ACU GCC  
 AUC GGA GGG GGG GGU GGC CCG GGU GGA GGU GGC GGC GGG GCC ACC GAU GAG GGA GGU GGC  
 AGA GGC AGC AGC AGU GGU GAU GGU GGU GAG GCC UGU GGC CAC CCU GAG CCC AGG GGA GGC  
 CCG AGC ACC CCU GGA AAG UGU ACG UCA GAU CUA CAG CGA ACA CAA CUA CUG CCG CCU UAU  
 CCU CUA AAU

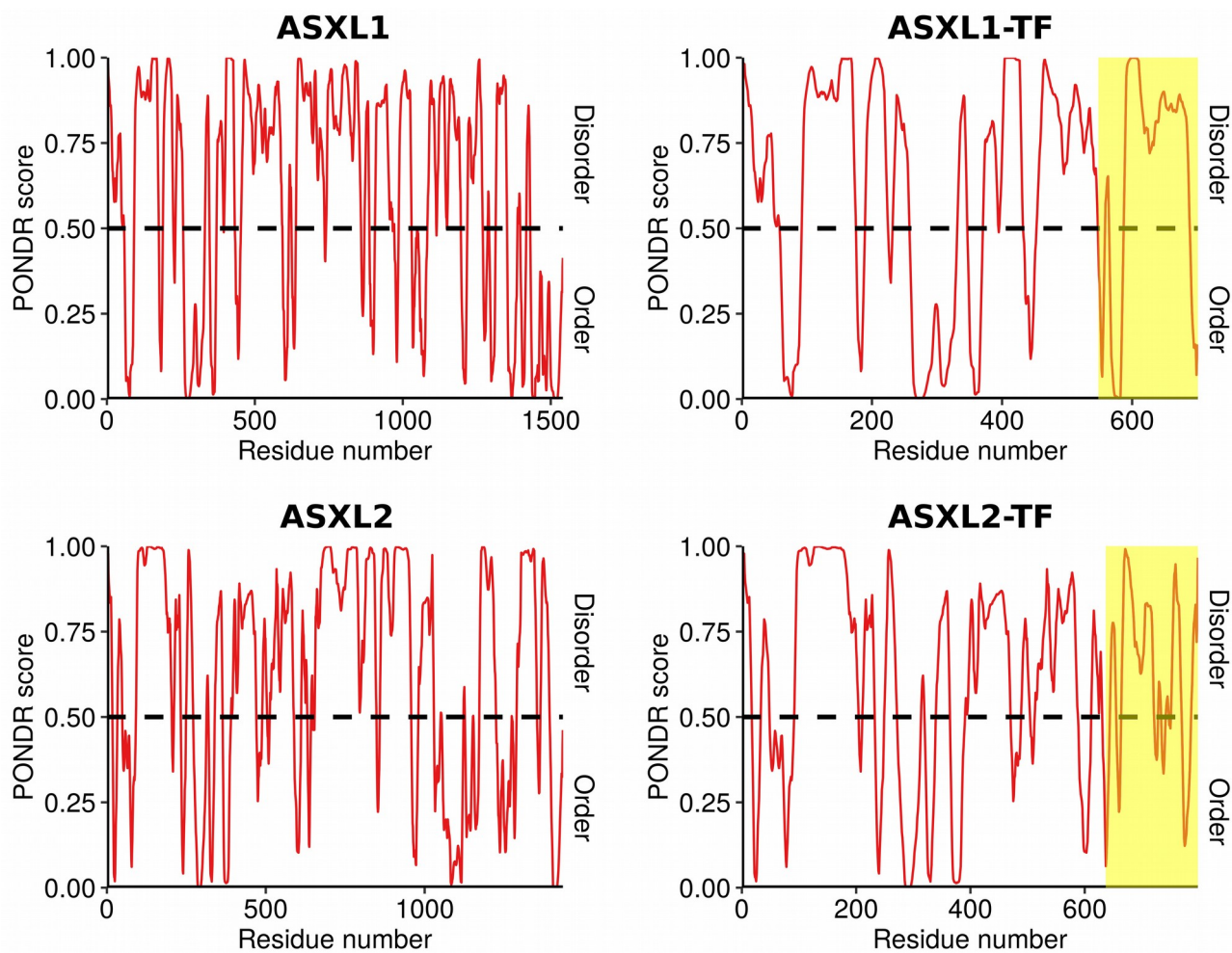
Human ASXL2 (GenBank accession NM\_018263) - *TF* ORF region

GUG AGC UGG GAG AAG AGG CCA CGU GUC ACU GAG AAU CGC CAG CAC CAG CAG CCA UUU CAG  
 GUC UCA CCA CAG CCC UUU CUC AAU AGA GGG GAC AGA AUC CAG GUG CGA AAA GUA CCA CCU  
 CUC AAG AUC CCG GUC UCC AGA AUC UCC CCC AUG CCG UUU CAU CCA UCG CAG GUC UCU CCC  
 AGG GCU CGU UUU CCA GUC UCC AUC ACU AGU CCU AAC AGA ACA GGA GCC AGA ACU CUU GCA  
 GAC AUC AAA GCA AAA GCC CAA CUG GUC AAA GCA CAG AGG GCA GCA GCU GCC GCU GCC GCC  
 GCA GCU GCU GCA GCC GCC UCA GUU GGA GGG ACC AUU CCA GGA CCU GGC CCA GGG GGU GGA  
 CAA GGU CCA GGA GAG GGU GGU GAA GGG CAG ACU GCU AGA GGA GGC AGU CCA GGC UCA GAC  
 AGA GUC AGU GAA ACU GGA AAG GGC CCC ACA CUG GAA CUG GCA GGA ACU GGA AGC AGG GGA  
 GGU ACG AGA GAG CUU UUA CCC UGU GGU CCA GAG ACU CAG CCC CAG UCU GAG ACC AAG ACC  
 ACC CCA AGC CAG GCA CAG CCU CAU AGU GUC UCU GGA GCA CAA CUA CAG CAA ACC CCC CCA  
 GUG CCU CCA ACA CCU GCC GUC AGU GGA GCA UGC ACA AGU GUC CCA UCA CCA GCC CAC AUA  
GAG

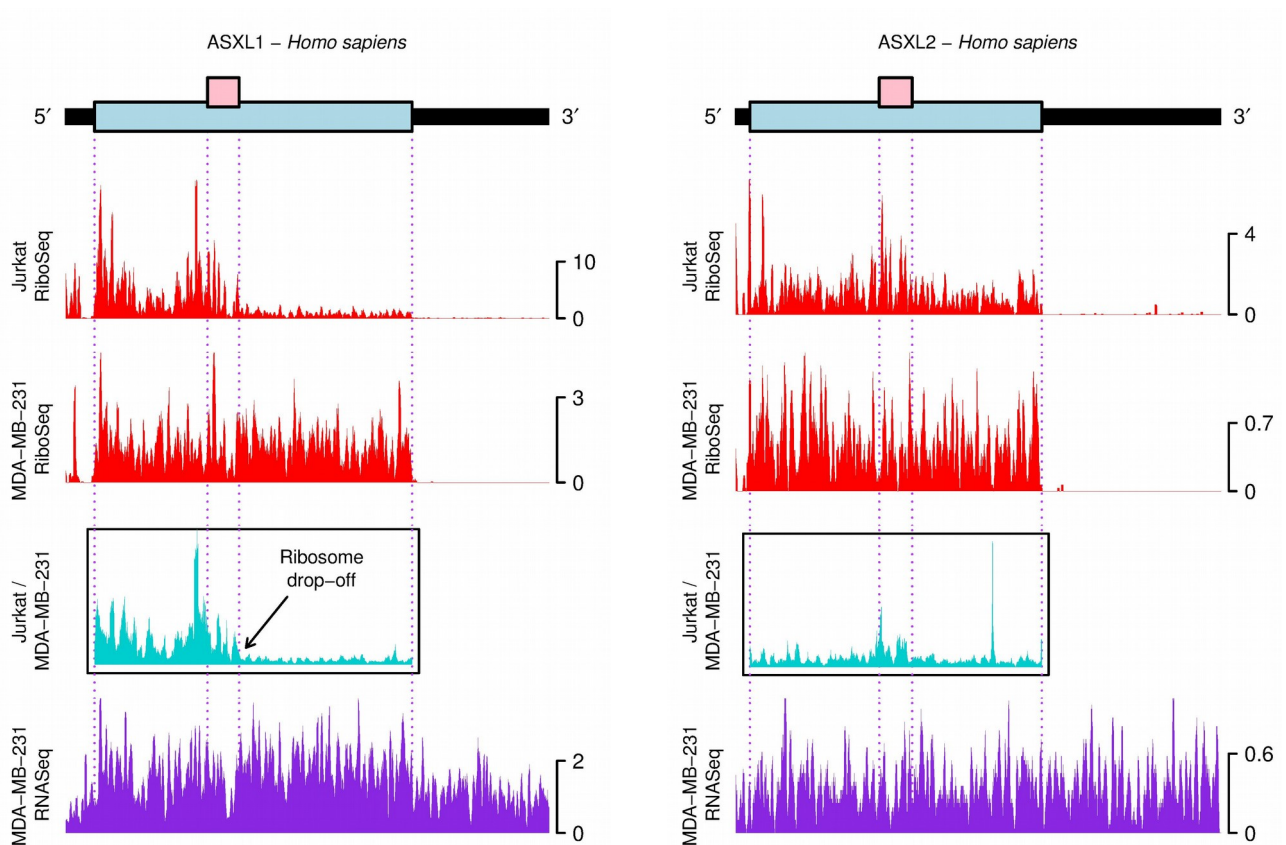
UXX Last upstream *TF*-frame stop codon  
UXX *TF* ORF stop codon  
XXX Putative frameshift site  
AUG *TF*-frame AUGs (none in ASXL2)

**Supplementary Figure 4. Nucleotide sequences of the human *TF* ORF regions.** Nucleotide sequences are shown for the region between the last upstream in-frame stop codon (orange) and the *TF* ORF stop codon (red); however ribosomes are expected to enter the *TF* frame at the putative frameshift sites (purple). Zero-frame codons are separated by spaces. The absence of *TF*-frame AUG codons in the *TF* region in ASXL2 and except near the 3' end of the *TF* ORF in ASXL1, argues against independent internal initiation in *TF*.





**Supplementary Figure 5. Predicted ordered and disordered regions in human ASXL and ASXL-TF polypeptides.** The TF region is highlighted in yellow.



**Supplementary Figure 6. Ribosome profiling analysis of human *ASXL*.** Transcript maps of *ASXL1* (left) and *ASXL2* (right) are shown at top, with the main *ASXL* ORF in pale blue and the overlapping *TF* ORF in pink. Below, the first two tracks (red) show ribosome profiling from Jurkat T-lymphocyte cells and MDA-MB-231 breast cancer cells. The bottom track (purple) shows RNASeq from MDA-MB-231 breast cancer cells. Plots show histograms of the 5' ends of reads with a +12 nt offset to map (for ribosome profiling) approximate P-site positions, and smoothed with a 31-nt running mean filter. The y-axis shows the mean read counts after smoothing. The inset plot (turquoise) shows the ratio, within the coding sequence, of the two ribosome profiling datasets after first applying a 61-nt running mean filter to each dataset. Note that the high levels of ribosome drop-off seen in *ASXL1* in Jurkat cells is likely to be a result of suspected somatic mutations in this cell-line rather than highly efficient ribosomal frameshifting (see text).



## Supplementary File 1 - accession numbers of sequences used

The subsets of sequences (76 for ASXL1 and 52 for ASXL2) selected to more uniformly cover the phylogeny for the sequence logo analyses are indicated with asterisks.

### ASXL1

#### mammals

XM_015071869	<i>Acinonyx jubatus</i>
XM_011223720	<i>Ailuropoda melanoleuca</i>
XM_012455205	<i>Aotus nancymaae</i>
XM_007193384	<i>Balaenoptera acutorostrata scammoni</i>
XM_010841718	<i>Bison bison bison</i>
XM_019972246	<i>Bos indicus</i>
XM_005887939	<i>Bos mutus</i>
XM_600364	<i>Bos taurus</i>
XM_006064407	<i>Bubalus bubalis</i>
XM_017971854	<i>Callithrix jacchus</i>
XM_010960874	<i>Camelus bactrianus</i> *
XM_010993907	<i>Camelus dromedarius</i>
XM_014554657	<i>Camelus ferus</i>
XM_005634922	<i>Canis lupus familiaris</i> *
XM_018057698	<i>Capra hircus</i>
XM_008074492	<i>Carlito syrichta</i> *
XM_013159847	<i>Cavia porcellus</i>
XM_017514550	<i>Cebus capucinus imitator</i> *
XM_004442480	<i>Ceratotherium simum simum</i> *
XM_012052496	<i>Cercocebus atys</i>
XM_005384868	<i>Chinchilla lanigera</i>
XM_008020495	<i>Chlorocebus sabaues</i>
XM_006860770	<i>Chrysochloris asiatica</i>
XM_011959875	<i>Colobus angolensis palliatus</i>
XM_004687292	<i>Condylura cristata</i> *
XM_016975522	<i>Cricetulus griseus</i>
XM_004464052	<i>Dasypus novemcinctus</i>
XM_013010673	<i>Dipodomys ordii</i> *
XM_013008731	<i>Echinops telfairi</i> *
XM_006881688	<i>Elephantulus edwardii</i> *
XM_008140954	<i>Eptesicus fuscus</i>
XM_014845061	<i>Equus asinus</i>
XM_005604562	<i>Equus caballus</i>
XM_008525258	<i>Equus przewalskii</i>
XM_016187970	<i>Erinaceus europaeus</i>
XM_019826661	<i>Felis catus</i>
XM_010628451	<i>Fukomys damarensis</i> *
XM_008577080	<i>Galeopterus variegatus</i>
XM_004061980	<i>Gorilla gorilla gorilla</i>
XM_004840576	<i>Heterocephalus glaber</i>
XM_019645788	<i>Hipposideros armiger</i>
NM_015338	<i>Homo sapiens</i> *
XM_013356440	<i>Ictidomys tridecemlineatus</i> *

XM_012951056	<i>Jaculus jaculus</i> *
XM_006740976	<i>Leptonychotes weddellii</i>
XM_007446853	<i>Lipotes vexillifer</i>
XM_010591603	<i>Loxodonta africana</i>
XM_005568667	<i>Macaca fascicularis</i>
XM_015149251	<i>Macaca mulatta</i>
XM_011766345	<i>Macaca nemestrina</i>
XM_011979776	<i>Mandrillus leucophaeus</i>
XM_017648617	<i>Manis javanica</i>
XM_015481723	<i>Marmota marmota marmota</i>
XM_005086071	<i>Mesocricetus auratus</i>
XM_012754776	<i>Microcebus murinus</i>
XM_005363226	<i>Microtus ochrogaster</i>
XM_016200632	<i>Miniopterus natalensis</i>
XM_007474452	<i>Monodelphis domestica</i> *
NM_001039939	<i>Mus musculus</i>
XM_013053414	<i>Mustela putorius furo</i>
XM_014550680	<i>Myotis brandtii</i>
XM_015566642	<i>Myotis davidii</i>
XM_014456449	<i>Myotis lucifugus</i>
XM_008834843	<i>Nannospalax galili</i>
XM_003273514	<i>Nomascus leucogenys</i>
XM_004585717	<i>Ochotona princeps</i> *
XM_004393041	<i>Odobenus rosmarus divergens</i>
XM_004272710	<i>Orcinus orca</i> *
XM_007934547	<i>Orycteropus afer afer</i>
XM_008256142	<i>Oryctolagus cuniculus</i> *
XM_012804162	<i>Otolemur garnettii</i>
XM_012151672	<i>Ovis aries musimon</i>
XM_015099825	<i>Ovis aries</i>
XM_003814739	<i>Pan paniscus</i>
XM_019458810	<i>Panthera pardus</i>
XM_015537063	<i>Panthera tigris altaica</i>
XM_005958892	<i>Pantholops hodgsonii</i> *
XM_016937663	<i>Pan troglodytes</i>
XM_009216344	<i>Papio anubis</i>
XM_006985536	<i>Peromyscus maniculatus bairdii</i>
XM_007122347	<i>Physeter catodon</i>
XM_012637708	<i>Propithecus coquereli</i>
XM_006922041	<i>Pteropus alecto</i>
XM_011380179	<i>Pteropus vampyrus</i>
XM_019748488	<i>Rhinolophus sinicus</i>
XM_017884118	<i>Rhinopithecus bieti</i>
XM_010352765	<i>Rhinopithecus roxellana</i>
XM_016148805	<i>Rousettus aegyptiacus</i> *
XM_003932071	<i>Saimiri boliviensis boliviensis</i>
XM_012553621	<i>Sarcophilus harrisii</i> *
XM_012933645	<i>Sorex araneus</i>
XM_005672837	<i>Sus scrofa</i> *
XM_004370455	<i>Trichechus manatus latirostris</i>
XM_014590207	<i>Tupaia chinensis</i> *
XM_019950775	<i>Tursiops truncatus</i>

XM\_008703387 *Ursus maritimus*  
XM\_006202660 *Vicugna pacos*

### **sauropsids**

XM\_009084380 *Acanthisitta chloris* \*  
XM\_019500328 *Alligator mississippiensis* \*  
XM\_005011000 *Anas platyrhynchos* \*  
XM\_008120859 *Anolis carolinensis* \*  
XM\_013198496 *Anser cygnoides domesticus*  
XM\_009870040 *Apaloderma vittatum* \*  
XM\_009279537 *Aptenodytes forsteri*  
XM\_013958321 *Apteryx australis mantelli* \*  
XM\_011578340 *Aquila chrysaetos canadensis*  
XM\_010308576 *Balearica regulorum gibbericeps*  
XM\_010133415 *Buceros rhinoceros silvestris* \*  
XM\_014956841 *Calidris pugnax*  
XM\_008497766 *Calypte anna*  
XM\_010162275 *Caprimulgus carolinensis*  
XM\_009694853 *Cariama cristata*  
XM\_009993988 *Chaetura pelagica*  
XM\_009893390 *Charadrius vociferus* \*  
XM\_007062481 *Chelonia mydas*  
XM\_010120851 *Chlamydotis macqueenii*  
XM\_008172168 *Chrysemys picta bellii*  
XM\_005499680 *Columba livia*  
XM\_008634138 *Corvus brachyrhynchos*  
XM\_010396950 *Corvus cornix cornix*  
XM\_015881880 *Coturnix japonica*  
XM\_019539485 *Crocodylus porosus*  
XM\_009562634 *Cuculus canorus*  
XM\_009640313 *Egretta garzetta* \*  
XM\_005444837 *Falco cherrug* \*  
XM\_005239907 *Falco peregrinus*  
XM\_016303293 *Ficedula albicollis* \*  
XM\_015296597 *Gallus gallus* \*  
XM\_019509967 *Gavialis gangeticus*  
XM\_015426170 *Gekko japonicus* \*  
XM\_005422200 *Geospiza fortis*  
XM\_009914948 *Haliaeetus albicilla*  
XM\_010569380 *Haliaeetus leucocephalus*  
XM\_017822613 *Lepidothrix coronata*  
XM\_018073998 *Manacus vitellinus*  
XM\_010722615 *Meleagris gallopavo*  
XM\_010178604 *Mesitornis unicolor*  
XM\_009471438 *Nipponia nippon*  
XM\_009933575 *Opisthocomus hoazin* \*  
XM\_015647794 *Parus major* \*  
XM\_009482169 *Pelecanus crispus*  
XM\_006117868 *Pelodiscus sinensis* \*  
XM\_010283841 *Phaethon lepturus* \*  
XM\_009511061 *Phalacrocorax carbo*  
XM\_005524727 *Pseudopodoces humilis*

XM\_010084600 *Pterocles gutturalis* \*  
XM\_009318746 *Pygoscelis adeliae*  
XM\_009093027 *Serinus canaria*  
XM\_014890102 *Sturnus vulgaris*  
XM\_002192704 *Taeniopygia guttata*  
XM\_009962456 *Tyto alba* \*  
XM\_005491248 *Zonotrichia albicollis* \*

### **amphibians**

HADQ01029003 *Bombina bombina* \*  
GEGK01045837 *Leptobranchium boringii* \*  
GEGH01031110 *Megophrys* \*  
GECV01019509 *Microhyla fissipes* \*  
XM\_018556374 *Nanorana parkeri* \*  
GEGH01003348 *Polypedates megacephalus* \*  
GDDO01068111 *Rana catesbeiana* \*  
GEGG01008506 *Rhacophorus dennysi* \*  
XM\_018234430 *Xenopus laevis* \*  
XM\_012952772 *Xenopus tropicalis* \*

### **teleost fish**

XM\_007246841 *Astyanax mexicanus* \*  
XM\_014031322 *Austrofundulus limnaeus*  
XM\_012820794 *Clupea harengus* \*  
XM\_008318529 *Cynoglossus semilaevis* \*  
XM\_015396824 *Cyprinodon variegatus* \*  
XM\_005162338 *Danio rerio* \*  
XM\_010875623 *Esox lucius* \*  
XM\_012877575 *Fundulus heteroclitus* \*  
XM\_005948017 *Haplochromis burtoni*  
XM\_019891036 *Hippocampus comes* \*  
XM\_017487517 *Ictalurus punctatus* \*  
XM\_017438828 *Kryptolebias marmoratus* \*  
XM\_019259947 *Larimichthys crocea*  
XM\_018701579 *Lates calcarifer*  
XM\_004570926 *Maylandia zebra*  
XM\_006807161 *Neolamprologus brichardi*  
XM\_015967370 *Nothobranchius furzeri* \*  
XM\_010784192 *Notothenia coriiceps* \*  
XM\_005465660 *Oreochromis niloticus* \*  
XM\_011473016 *Oryzias latipes* \*  
XM\_020089223 *Paralichthys olivaceus*  
XM\_007575434 *Poecilia formosa*  
XM\_015048376 *Poecilia latipinna* \*  
XM\_015004530 *Poecilia mexicana*  
XM\_008412961 *Poecilia reticulata*  
XM\_005752308 *Pundamilia nyererei*  
XM\_017708670 *Pygocentrus nattereri* \*  
XM\_014135258 *Salmo salar* \*  
XM\_016503785 *Sinocyclocheilus anshuiensis*  
XM\_016273902 *Sinocyclocheilus grahami*

XM\_016513134 *Sinocyclocheilus rhinoceros* \*  
XM\_008282558 *Stegastes partitus* \*  
XM\_011619777 *Takifugu rubripes* \*  
XM\_014475275 *Xiphophorus maculatus*

#### **other**

GEUG01028913 *Amia calva* \*  
XM\_007885779 *Callorhinchus milii* \*  
XM\_014498298 *Latimeria chalumnae* \*  
XM\_015365106 *Lepisosteus oculatus* \*

#### **ASXL2**

##### **mammals**

XM\_015064116 *Acinonyx jubatus*  
XM\_019808476 *Ailuropoda melanoleuca*  
XM\_012453268 *Aotus nancymaae*  
XM\_007191266 *Balaenoptera acutorostrata scammoni*  
XM\_010840577 *Bison bison bison*  
XM\_019970597 *Bos indicus*  
XM\_005895687 *Bos mutus*  
XM\_002691461 *Bos taurus*  
XM\_006046228 *Bubalus bubalis*  
XM\_008981035 *Callithrix jacchus*  
XM\_010948539 *Camelus bactrianus* \*  
XM\_010992973 *Camelus dromedarius*  
XM\_006190213 *Camelus ferus*  
XM\_003432160 *Canis lupus familiaris* \*  
XM\_005686939 *Capra hircus*  
XM\_008063472 *Carlito syrichta* \*  
XM\_003472847 *Cavia porcellus*  
XM\_017527302 *Cebus capucinus imitator* \*  
XM\_004418269 *Ceratotherium simum simum* \*  
XM\_012044335 *Cercocebus atys*  
XM\_005400412 *Chinchilla lanigera*  
XM\_007971691 *Chlorocebus sabaeus*  
XM\_006835227 *Chrysochloris asiatica*  
XM\_011950426 *Colobus angolensis palliatus*  
XM\_012727612 *Condylura cristata* \*  
XM\_003497015 *Cricetulus griseus*  
XM\_013013735 *Dipodomys ordii* \*  
XM\_004696413 *Echinops telfairi* \*  
XM\_006880618 *Elephantulus edwardii* \*  
XM\_008162352 *Eptesicus fuscus*  
XM\_014856740 *Equus asinus*  
XM\_001918196 *Equus caballus*  
XM\_008542771 *Equus przewalskii*  
XM\_007516745 *Erinaceus europaeus*  
XM\_006930426 *Felis catus*  
XM\_010604841 *Fukomys damarensis* \*



XM\_008577069 *Galeopterus variegatus*  
XM\_004028952 *Gorilla gorilla gorilla*  
XM\_004839122 *Heterocephalus glaber*  
XM\_019643761 *Hipposideros armiger*  
NM\_018263 *Homo sapiens* \*  
XM\_005322571 *Ictidomys tridecemlineatus* \*  
XM\_004663740 *Jaculus jaculus* \*  
XM\_006732866 *Leptonychotes weddellii*  
XM\_007470793 *Lipotes vexillifer*  
XM\_003411920 *Loxodonta africana*  
XM\_005576367 *Macaca fascicularis*  
XM\_015111861 *Macaca mulatta*  
XM\_011738081 *Macaca nemestrina*  
XM\_011972683 *Mandrillus leucophaeus*  
XM\_017666555 *Manis javanica*  
XM\_015479905 *Marmota marmota marmota*  
XM\_005079112 *Mesocricetus auratus*  
XM\_012788149 *Microcebus murinus*  
XM\_005360858 *Microtus ochrogaster*  
XM\_016209133 *Miniopterus natalensis*  
XM\_001380127 *Monodelphis domestica* \*  
NM\_001270988 *Mus musculus*  
XM\_004745948 *Mustela putorius furo*  
XM\_005874900 *Myotis brandtii*  
XM\_015566378 *Myotis davidii*  
XM\_014446882 *Myotis lucifugus*  
XM\_008834991 *Nannospalax galili*  
XM\_012497462 *Nomascus leucogenys*  
XM\_004582643 *Ochotona princeps* \*  
XM\_004627442 *Octodon degus*  
XM\_004394909 *Odobenus rosmarus divergens*  
XM\_012532454 *Orcinus orca* \*  
XM\_007666728 *Ornithorhynchus anatinus* \*  
XM\_008254661 *Oryctolagus cuniculus* \*  
XM\_003787447 *Otolemur garnettii*  
XM\_012158262 *Ovis aries musimon*  
XM\_004005731 *Ovis aries*  
XM\_003827052 *Pan paniscus*  
XM\_019450044 *Panthera pardus*  
XM\_005978907 *Pantholops hodgsonii* \*  
XM\_016948189 *Pan troglodytes*  
XM\_003908363 *Papio anubis*  
XM\_006981457 *Peromyscus maniculatus bairdii*  
XM\_007108431 *Physeter catodon*  
XM\_012652406 *Propithecus coquereli*  
XM\_006910290 *Pteropus alecto*  
XM\_011356536 *Pteropus vampyrus*  
XM\_008764542 *Rattus norvegicus*  
XM\_019712755 *Rhinolophus sinicus*  
XM\_017876853 *Rhinopithecus bieti*  
XM\_010383018 *Rhinopithecus roxellana*  
XM\_016121738 *Rousettus aegyptiacus* \*

XM_010345790	<i>Saimiri boliviensis boliviensis</i>
XM_012539839	<i>Sarcophilus harrisii</i> *
XM_013996276	<i>Sus scrofa</i> *
XM_004377581	<i>Trichechus manatus latirostris</i>
XM_006162196	<i>Tupaia chinensis</i> *
XM_004312104	<i>Tursiops truncatus</i>
XM_008700579	<i>Ursus maritimus</i>
XM_006197176	<i>Vicugna pacos</i>

### **sauropsids**

XM_019497675	<i>Alligator mississippiensis</i> *
XM_014524044	<i>Alligator sinensis</i>
XM_013200279	<i>Anser cygnoides domesticus</i> *
XM_009275117	<i>Aptenodytes forsteri</i> *
XM_011598858	<i>Aquila chrysaetos canadensis</i>
XM_010142315	<i>Buceros rhinoceros silvestris</i> *
XM_014961567	<i>Calidris pugnax</i> *
XM_010002204	<i>Chaetura pelagica</i> *
XM_009890372	<i>Charadrius vociferus</i> *
XM_007062817	<i>Chelonia mydas</i>
XM_005284123	<i>Chrysemys picta bellii</i> *
XM_015859722	<i>Coturnix japonica</i>
XM_009563752	<i>Cuculus canorus</i> *
XM_014287174	<i>Falco cherrug</i> *
NM_001031096	<i>Gallus gallus</i> *
XM_010565910	<i>Haliaeetus leucocephalus</i> *
XM_017838512	<i>Lepidothrix coronata</i> *
XM_010708024	<i>Meleagris gallopavo</i> *
XM_005146457	<i>Melopsittacus undulatus</i> *
XM_009467461	<i>Nipponia nippon</i> *
XM_009943397	<i>Opisthocomus hoazin</i> *
XM_009909487	<i>Picoides pubescens</i> *
XM_007422356	<i>Python bivittatus</i> *
XM_009669652	<i>Struthio camelus australis</i> *

### **amphibians**

GFBM010877296	<i>Ambystoma mexicanum</i> *
XM_018574722	<i>Nanorana parkeri</i> *
GEGH01064887	<i>Polypedates megacephalus</i> *
GDDO01077260	<i>Rana catesbeiana</i> *
XM_018264742	<i>Xenopus laevis</i> *
XM_018089999	<i>Xenopus tropicalis</i> *

### **other**

XM_007900450	<i>Callorhinchus milii</i> *
XM_006005057	<i>Latimeria chalumnae</i> *
XM_015348384	<i>Lepisosteus oculatus</i> *

# Supplementary File 2 - vertebrate ASXL1 and ASXL2 TF peptide sequences

## ASXL1

Predicted ASXL1 TF peptide sequences following a +1 PRF at the conserved UCC\_UUU\_CGU sequence. The conserved EH[N/S]Y motif is highlighted in purple.

### mammals

XM_012553621	Sarcophilus harrisii	VTQLKVFTPKSRSLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPALSPQNTTPAGAEVLPELSQTLRPALCKPEPR-----EKL--PPQPLVGVGQGVVEGTGMKEAVE-----VRLVTIPSTGEPRGLTEGROIYVHNYCRLVMS
XM_007474452	Monodelphis domestica	VTQLKVFTPKSRSLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGLSPTQSTPAGAEVLPELSQTLRPALCKPEPR-----EKL--PPQPEVGVGQGVVEGTGMKEAVE-----VRLVTIPSTGEPRGLTEGROIYVHNYCRLVMS
XM_004464052	Dasyurus novemcinctus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGLSPTQSTPAGAEVLPELSQTLRPALCKPEPR-----ERR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_004585717	Ochotona princeps	VTQLQVTPRSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGLSPTQSTPAGAEVLPELSQTLRPALCKPEPR-----ERR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_016187970	Erinaceus europaeus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIRQ--PPLSEGGVARVEAAGPPMREVAE-TAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_008834843	Nannosorex galili	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIRQ--PPLSEGGVARVEAAGPPMREVAE-TAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_012951056	Jaculus jaculus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGLSPTQSTPAGAEVLPELSQTLRPALCKPEPR-----ERR--PPLSEGGVARVEAAGPPMREVAE---AVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_006881688	Elaphantulus edwardii	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGLSPTQSTPAGAEVLPELSQTLRPALCKPEPR-----ERR--PPLSEGGVARVEAAGPPMREVAE-ATTVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_006860770	Chrysochloris asiatica	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPARNPAGAAAPGPSQTLKPVLCRPEPS-----ERR--PPLSEGGVARVEAAGPPMREVAE-AATVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_013008731	Echinops telfairi	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRPEPS-----ERR--PPLSEGGVARVEAAGPPMREVAE-AAALVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_007934547	Orycteropus afer afer	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPARNPAGAAAPGPSQTLKPVLCRPEPS-----ERR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_004370455	Trichechus manatus latirostris	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPARNPAGAAAPGPSQTLKPVLCRPEPS-----ERR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_010591603	Loxodonta africana	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPRTIPVAGVLPVGSQTLKPVLCRPEPS-----ERR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_012933645	Sorex araneus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPELSRSPAGAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-TAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_008256142	Oryctolagus cuniculus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_008074492	Carliota syrichta	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-TAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_014590207	Tupaia chinensis	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_013010673	Dipodomys ordii	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_005086071	Mesocricetus auratus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_016975522	Cricetulus griseus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_006985536	Peromyscus maniculatus bairdii	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_001693955	Peromyscus maniculatus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_005363226	Microtus ochrogaster	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_004840576	Heterocephalus glaber	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_010628451	Fukomys damarensis	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_005384868	Chinchilla lanigera	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_013159847	Cavia porcellus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_015481723	Marmota marmota marmota	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_013356440	Ictidomys tridecemlineatus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_012804162	Otolemur garnettii	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_012754776	Microcebus murinus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_012637708	Protophthalmus coquerelli	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_012455205	Aotus nancymae	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_017917854	Callithrix jacchus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_017514550	Cebus capucinus imitator	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_003932071	Saimiri boliviensis boliviensis	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_012052496	Cercocebus atys	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_008020495	Chlorocebus sabaeus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_005568667	Macaca fascicularis	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_011979776	Mandrillus leucophaeus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_009216344	Papio anubis	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_015149251	Macaca mulatta	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_011766345	Macaca nemestrina	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_016937663	Pan troglodytes	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
NM_015338	Homo sapiens	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_003814739	Pan paniscus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_004061980	Gorilla gorilla gorilla	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_003273514	Nomascus leucogenys	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_011959875	Colobus angolensis palliatus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_017884118	Rhinopithecus bieti	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_010352765	Rhinopithecus roxellana	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_014554657	Camelus ferus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIRKAAAXXXXXXXXXXGVARVEAAGPPMREVAE-TAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_008577080	Galeolagus variegatus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPAGSSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-MAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_004687292	Condylura cristata	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEAGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_004442480	Ceratotherium simum simum	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--LPLSEAGVARVEAAGPPMREVAE-AAPVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_008140954	Eptesicus fuscus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPELSRSPAGAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_014550680	Myotis brandtii	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPELSRSPAGAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_015566642	Myotis davidii	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPELSRSPAGAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_014456449	Myotis lucifugus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPELSRSPAGAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_013053414	Mustela putorius furo	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_015537063	Panthera tigris altaica	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_006740976	Leontochloa weddellii	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_004393041	Odobenus rosmarus divergens	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_015071869	Acinonyx jubatus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_011223720	Ailuropoda melanoleuca	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_019458810	Panthera pardus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_019826661	Felis catus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_005634922	Canis lupus familiaris	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_008703387	Ursus maritimus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_005672837	Sus scrofa	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--PPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV
XM_014845061	Equus asinus	VTQLKVFTPKSHPLKRSKSPRSRSGFNHFNHNPGLWIKVLSPLTRYAPASSPQSPAGVLPVGSQTLKPVLCRSEGEATTAIEIR--LPLSEGGVARVEAAGPPMREVAE-AAAVVMVVRPVATLSPGEGQAPLESVRQIYSEHNYCRLLV

XM\_005604562 Equus caballus VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_008525258 Equus przewalskii VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_005887939 Bos mutus VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_019748488 Rhinolophus sinicus VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_016200632 Hminopterus natalensis VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_016148805 Rousettus aegyptiacus VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_011380179 Pteropus vampyrus VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_006922041 Pteropus alecto VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_006202660 Vicugna pacos VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_0109960874 Camelus bactrianus VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010993907 Camelus dromedarius VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_007122347 Physeter catodon VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_007446853 Lipotes vexillifer VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_004272710 Orcinus orca VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_007193384 Balaenoptera acutorostrata scammoni VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_019950775 Tursiops truncatus VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_017648617 Manis javanica VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_019645788 Hipposideros armiger VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_006564407 Bubalus bubalis VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_0006364 Bos taurus VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_019972246 Bos indicus VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010841718 Bison bison bison VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009558892 Pantholops hodgsonii VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_018057698 Capra hircus VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_012151672 Ovis aries musimon VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_015099825 Ovis aries VTQLKVFTPKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV

sauropsids

XM\_008497766 Calypte anna VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_019509967 Gavialis gangeticus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_019529485 Axyolus porosus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_019509328 Alligator mississippiensis VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_006117868 Pelodiscus sinensis VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_007062481 Chelonina mydas VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_008172168 Chrysemys picta bellii VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_015881880 Cortynia japonica VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010722615 Meleagris gallopavo VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_015296597 Gallus gallus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_014890102 Starnus vulgaris VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_018073998 Manacus vittellinus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_017822613 Lepidothrix coronata VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_002192704 Taeniopygia guttata VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_005491248 Zonotrichia albicollis VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_016303293 Ficedula albicollis VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009084380 Acanthisitta chloris VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_005422200 Geospiza fortis VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009093027 Serinus canaria VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010396950 Corvus cornix cornix VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_008634138 Corvus brachyrhynchos VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_015647794 Corvus major VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_005524727 Pseudopodoces humilis VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009993988 Chaetura pelagica VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010133415 Bucerus rhinoceros silvestris VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010178604 Mesitornis unicolor VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010084600 Pterocles gutturalis VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009562634 Cuculus canorus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_005499680 Columba livia VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_005011000 Anas platyrhynchos VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_013198496 Anser cygnoides domesticus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010120851 Chlamydotis macqueenii VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009962456 Tyto alba VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009933575 Opisthocomus hoazin VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_013958321 Apteryx australis mantelli VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_014956841 Calidris pugnax VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009471438 Nipponia nippon VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010308576 Balaearia regulorum gibbericeps VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009893390 Charadrius vociferus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009279537 Aptenodytes forsteri VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009318746 Pygoscelis adeliae VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009870640 Apaloderma vittatum VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009511061 Phalacrocorax carbo VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_011578340 Aquila chrysaetos canadensis VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010569380 Haliaeetus leuccephalus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009914948 Haliaeetus albicilla VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010283841 Phaethon lepturus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_005239907 Falco peregrinus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_005444837 Falco cherrug VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_010162275 Caprimulgus carolinensis VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009694853 Cariama cristata VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009640313 Egretta garzetta VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_009482169 Pelicanus crispus VTQLKVFQKSHLLKRSQKSHPSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_015426170 Gekko japonicus VTQLKVFQKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV  
XM\_008120859 Anolis carolinensis VTQLKVFQKSHPPKRSKSPKSRPSSGFNFHVSHPGWLKVSPLTRYAPASSPSRSPAGAGLAPGQVSLTKPVLCRSEGREATAIERR -- LPLPSEGGVARVEVAAGPPMREVAE - AAAMVMVRPVATLSPEEPQALLESVRQIYSEHNYCRLLV





ASXL2

Predicted ASXL2 TF peptide sequences following a -2 PRF at the conserved RG\_GUC\_UCU sequence. The conserved EH[N/S/Y] motif is highlighted in purple.

mammals

Table of predicted ASXL2 TF peptide sequences for various mammals. Each row includes a species name (e.g., Ornithorhynchus anatinus, Sus scrofa) and a corresponding peptide sequence with highlighted motifs.

XM\_008981035 Callithrix jacchus LPGLVFQSPSLVTEQPELLQTSKQKPNWSKH--RGQ----QLQLPQLQP-LQLEGPFQDLAQGVDKV--QEKVWKG----RLLEEAVQPQTESVVKLERA-PHWNQLEAGEVRESFYPVQRLSPSLRPRPPQARHLSLVLEHNYSKPPQCLQHLPSVEHAQVSHHQPT-----

saurospids

XM\_007422356 Python bivittatus LPGPPSQS---SGEQPELWPTSKPLGWPSPSEQLLKPQOQPPLLLLLPLWKPSRAQOEGGKEMTGAHV-----PQGGLMELHWTQALQEAQVQEGFCPLVQLSPQQTPLQNLQOQPQAVLLEHSYS--RLPQHNPQLQAATQAWRLRQSHNQ-----

amphibians

GFBM010877296 Ambystoma mexicanum LPGLLFQPPLPVLGEQEPWPQISRQLTWPEHNEQLQLQOQPL-LQSEILSQVLAQ---EAEVQEE-----GTIDVEVKPKMLEARLSPWNWEELEAGEVRGDLNLIWTSNPVQKRPRSSHQLTVGOEHNYSKSPMNPQLQPVQVYLPHLTPETLLH-----

other

XM\_015348384 Lepisosteus oculatus LPGPHSQPPFVLAQGLAPWQTSRRRNPWPGSRRQRLL--LQRPRDL--PRGVCQDRGLGEGAGHRGEPATLGLQSERRSLPEQNWEELEEGLEGGFYLV----PVQTPRSRSLPVPVSVILLEHNSRLPRHRPEPAVLLQHSYVYLQTLHRPPLHQ