

Human1	--	LTWCVEGC	SSQHWSYGLR	PGGKRDA	--E	NLIDSFQE	--	----	----
Panda1	--	LTLCVVGC	SGQHWSYGLR	PGGKRNA	--E	KLIDSFQE	--	----	----
Rat1	--	LTVCLEGC	SSQHWSYGLR	PGGKRNT	--E	HLVDSFQE	--	----	----
Koala1	--	LTVCVTIS	SGQHWSYGLR	PGGKRDA	--D	NLIDSFQE	--	----	----
Chicken1	--	ETASVAIC	LAQHWSYGLQ	PGGKRNA	--E	NLVESFQE	--	----	----
Pelican1	--	EVMSVEIC	LAQHWSYGLQ	PGGKRNA	--E	NLVESFQE	--	----	----
Duck1	--	FIVSVEIC	LAQHWSYGLQ	PGGKRN	--D	NLGELFQE	--	----	----
Alligator1	--	LILSVDIC	LAQHWSYGLQ	PGGKRNA	--E	NLVESFQQ	--	----	----
Turtle1	--	FILSVEIC	LAQHWSYGLQ	PGGKRDA	--E	NLVESFQE	--	----	----
Gecko1	--	ULLCVAIG	SAQHWSYGLQ	PGGKRDA	--E	NLIESFQE	--	----	----
Sturgeon1	--	LMAVSEVC	YGOHWSYGLR	PGGKRET	--E	TLIDTLQE	--	----	----
Gar1	--	MTLVTAQC	-SQHWSYGLR	PGGKREV	--E	SLQDTLQD	--	----	----
Eel1	--	VALVCQGC	-CQHWSYGLR	PGGKRG	--D	SLQDTLQD	--	----	----
Whitefish1	--	VALVSQGC	-CQHWSYGMN	PGGKRAT	--G	SLSDTQDN	--	----	----
Medaka1	--	SSVLSQGC	-CQHWSFGLS	PGGKREL	--K	YFPNTLENQ	--	----	----
Seabream1	LL	GTLLGQGC	-CQHWSYGLS	PGGKREL	--D	GLSETLGNQ	--	----	----
Chanchita1	--	GTAFPPGC	-CQHWSYGLS	PGGKRD	--D	TESDALGN	--	----	----
Tilapia1	--	GTVPFQGC	-CQHWSYGLS	PGGKRD	--D	NESDTLGN	--	----	----
Mackerel1	--	GSVPQVC	-CQHWSYGLS	PGGKREL	--D	SLSDTMDD	--	----	----
Pejerrey1	--	GSVLLQVT	-CQHWSFGLS	PGGKRD	--D	TFSDTLDN	--	----	----
Xenopus1	--	LLFSAHVG	HAQHWSYGLR	PGGKRDA	--E	SLQDMYPE	--	----	----
Bullfrog1	--	LLSSHMI	HGOHWSYGLR	PGGKREV	--E	SLQESYAE	--	----	----
Catshark1	--	SAIFVNEL	SAQHWSFDLR	PGGKREA	--DD	DLVESFQE	--	----	----
Medaka2	--	LYVGAQLS	QAQHWSHG	PGGKREL	--D	SF----	--E	----	----
Chanchita2	--	LCVGAQLS	FAQHWSHG	PGGKREL	--D	SFGTSE	--	----	----
Tilapia2	--	LCVGAQLS	FAQHWSHG	PGGKREL	--D	SEGTSE	--	----	----
Seabream2	--	LCVGAQLS	NAQHWSHG	PGGKREL	--D	SEGTSE	--	----	----
Mackerel2	--	LCVGAQLS	NAQHWSHG	PGGKREL	--D	SFGTPE	--	----	----
Pejerrey2	--	LYVGAQLS	YAQHWSHG	PGGKREL	--D	SFSTSE	--	----	----
Whitefish2	--	LCLGAQLS	SSQHWSHG	PGGKREL	--D	SFTTSE	--	----	----
Salmon2a	--	LCLGAQLS	SSQHWSHG	PGGKREL	--D	SFTTSE	--	----	----
Salmon2b	--	LCLGAQLS	SSQHWSHG	PGGKREL	--D	SFTTSE	--	----	----
Goldfish2	--	MFLSVQFA	SSQHWSHG	PGGKREI	--D	VYDPSE	--	----	----
Zebrafish2	--	LCLSAQLS	SAQHWSHG	PGGKREI	--D	LYDTSE	--	----	----
Eel2	--	LCLGAQLS	LCQHWSHG	PGGKREL	--D	SLTTAE	--	----	----
Anchovy2	--	LFLGVELS	GAQHWSHG	PGGKRDV	--D	TENSAQ	--	----	----
Arowana2	--	LCSGAQLS	CSQHWSHG	PGGKREL	--N	SLTASE	--	----	----
Sturgeon2	--	LALSAQLS	SGQHWSHG	PGGKREL	--E	GLQSPE	--	----	----
Coelacanth2	--	LAVSIQLC	STQHWSHG	PGGKREL	--A	IPQTPE	--	----	----
Bullfrog2	--	FAVSTQLS	HGOHWSHG	PGGKREL	--D	MPASPE	--	----	----
Gegko2	--	IIATIHL	KAQHWSHG	PGGKREV	--D	LSQSPE	--	----	----
Turtle2	--	LAVSTHLS	RAQHWSHG	PGGKREL	--D	LSQAPE	--	----	----
Alligator2	--	LAIGVPLA	RAQHWSHG	PGGKREL	--D	LSQAPQ	--	----	----
Elephantshark2	--	LAINTQVS	RAQHWSHG	PGGKREL	--G	QAQTPE	--	----	----
Catshark2	--	LIVNTQFS	RAQHWSHG	PGGKREL	--S	LSQSPE	--	----	----
Whale	--	LIVNTEFS	TAQHWSHG	PGGKREV	--S	LSQSPD	--	----	----
Xenopus2	--	FAFSTHLS	NAQHWSHG	PGGKRQL	--D	TRSIPE	--	----	----
Koala2	--	LWTQIS	YAQHWSHG	PGGKRAL	--D	EIPGLE	--	----	----
Lamprey1	--	TALLVSLN	YAQHYSLEWK	PGGKRD	--E	VSHTRE	--	----	----
Lamprey111	--	SALLVSLT	HTQHWSHDWK	PGGKRD	--E	AMRPL	--	----	----
Chicken2	--	AGTA	QGQHWSHG	PGGKRD	--	----	----	----	----
Human2	--	LTAHLGPS	EAQHWSHG	PGGKRAL	--S	SAQDPQNALR	--	PPA	GSPVQTAHGL
Panda2	--	LTVHPGSL	KAQHWSHG	PGGKRAS	--S	SAQHPQRAPR	LLGRVLGTAA	SSPDQAAHNL	
Sheep2	LL	TTHPGPS	KAQHWSHSXY	PGGKRAS	--S	LPRDPQHPPR	PPA	QSPGQIAHTL	
Elephantshark1a	--	LAVLTALT	SAQHWSIDNR	PGKKRGT	--E	HMIEFLQG	--	----	----
Elephantshark1b	--	LAVLTALT	SAQHWSIDNR	PGRKRG	--E	HMIEFLQG	--	----	----
Lamprey11	--	LLTAPPAS	LGQHWSHGWF	PGGKRGV	--Q	EPTRAS	YENVSPSD	GSPFTP	
Anchovy1	--	VTA AVLQC	SSQHWSHGLS	PGGKREA	--D	SPSESQ	--	----	----
Goldfish3	--	LVCVLEVS	LCQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Zebrafish3	--	LVCVLEVS	LCQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Chanchita3	--	LALVVQVT	LSQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Mackerel3	--	LALVVQVT	LSQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Seabream3	--	LALVVQVT	LSQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Tilapia3	--	LALVVQVT	LSQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Medaka3	--	LALVVQVT	LCQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Pejerrey3	--	LALVVQVS	LCQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Whitefish3	--	LVLVAQVT	LSQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Salmon3a	--	LALVAQVT	LSQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Salmon3b	--	LALIAQVT	FSQHWSYGLW	PGGKRSV	--GE	----	----	----	----
Arowana3	--	LAHVAQIG	FSQHWSYGLW	PGGKRST	--GD	----	----	----	----
Anchovy3	--	LACACKEC	VCQHWSYGLW	PGGKRST	--GGE	----	----	----	----
Catshark3	--	IVFTAHC	ISQHWSHG	PGGKRNA	--	VS	----	----	----
Whaleshark3	--	VMFIAHC	ISQHWSHG	PGGKRSA	--	VS	----	----	----
Amphioxus	----	AQIL	CARAFTYHT	WGRKRAD	--SS	ELLTPHA	--	----	----

Human1	IVKEVGQLA	----	ETQRF	E----	C-TT	HQPRSPRLDL	KGALESLE	-EET-	GQKKI	
Panda1	IAKELDQGA	----	EPQHL	E----	C-TI	HQPQTPLRDL	KGALESLE	-EEN-	GQKRI	
Rat1	MGKEEDQMA	----	EPQNF	E----	C-TV	HWPRSPRLDL	RGALERLE	-EEA-	GQKKM	
Koala1	MADEGNQLA	----	EPQRF	E----	C-TI	HQPRSPRLDL	KGVLASLE	-GEA-	GRKKA	
Chicken1	IANEMESLG	----	EGQKA	E----	C-PG	SYQHPRLSDL	KETMASLE	-GEA-	RRKEI	
Pelican1	TANEMEKSG	----	EVQKT	E----	C-PG	LRQHSRFSDL	KEAMESLE	-GEA-	RRKKI	
Duck1	IANDMEKIG	----	EVQKT	E----	C-PG	SYQHPOFTDL	KEAMASLE	-GEA-	RRKKI	
Alligator1	MASDMEKFG	----	EMQQF	E----	CSSG	PHQPSKLSDL	KKALASLE	-GEA-	GRKKI	
Turtle1	IASEMEKIG	----	EMQHF	E----	C-TG	PHQRSMLSG	KGALASLE	-GDA-	GRKKI	
Gecko1	IANEVDKVG	----	ELQHL	E----	C-TA	SQQRPTLQGL	KGALASLID	-RET-	GQKKI	
Sturgeon1	IA-DIEKLD	----	TGDHS	E----	C-AL	SSQRSQLSDL	KGVLARLVG	-GES-	ARKKI	
Gar1	IAEEVRKLD	----	AIRQP	G----	C-AD	VSPQSRSLSS	RELLASLAE	-EER-	GRKNI	
Eel1	IIEELQKLD	----	TSSLP	S----	C-ND	LSPHITLSSL	KEILANLAD	-RET-	GRKKI	
Whitefish1	MAEDLLKID	----	PSCSLF	G----	C-AD	VSPHAKMYRL	RALLASLAD	-RQS-	GLNNI	
Medaka1	I--RLLNSN	----	TPCSDL	S----	H-LE	ESSLAKIYRI	KGLLGSVTE	-AKN-	GYRTY	
Seabream1	IVGSFPHVA	----	TPCRVL	G----	C-AE	ESPFPKIYRM	KGFLDAVTD	-REN-	GNRTY	
Chanchita1	MVEEFPRVE	----	APCSVE	G----	C-AE	ESPFAKMYRV	KGLVGSVTE	-REN-	GHRTY	
Tilapia1	MVEEFPRVE	----	APCSVE	G----	C-AE	ESPFAKMYRV	KGLLASLAE	-KTD-	GHSRN	
Mackerel1	VVEGFQVD	----	TPCSFL	G----	C-AE	ESPFAKMYRM	KGLFGSVTN	-REN-	GHRNY	
Pejerrey1	VVEGFPHMD	----	APCRVV	G----	C-AD	ESPFAKMYRM	KGFLGGVTD	-REN-	GRRVY	
Xenopus1	TPNEVPLFP	----	ELERL	E----	C---	SVPQSRNLVL	RGALMSWLD	-GEN-	RRKKI	
Bullfrog1	VPNEVS-FT	----	ELQHL	E----	C---	SIPQNRISLV	RDALMNWLE	-GEN-	ARKKI	
Catshark1	DAGNVDDLTH	----	NSRMGCPFP	D----	C---	-----L	RGTLAKFTP	-----	RRRKL	
Medaka2	VSEEMKL	----	CETG	E----	C-S	YMRPQRRSFL	RNIVLDALA	-REL-	QKRK	
Chanchita2	ISEEIKL	----	CEAG	E----	C-S	YLRPQRRGIL	RNILLDALA	-REL-	QKRK	
Tilapia2	ISEEIKL	----	CEAG	E----	C-S	YLRPQRRSIL	RNILLDALA	-REL-	QKRK	
Seabream2	ISEEIKL	----	CEAG	E----	C-S	YLRPQRRSVL	RNILLDALA	-REL-	QKRK	
Mackerel2	ISEEIKL	----	CEAG	E----	C-S	YLRPQRRSFL	RNILLDALA	-REL-	QKRK	
Pejerrey2	ISEENKL	----	CEAG	E----	C-S	YLRPQRONVL	RNIVLDALA	-REL-	QKRK	
Whitefish2	ISEEIKL	----	CEAG	E----	C-S	YLRPQRRNIL	KNILLDALA	-REF-	EKRK	
Salmon2a	ISEEIKL	----	CEAG	E----	C-S	YLRPQRRNIL	KNIILDVLA	-REF-	QKRK	
Salmon2b	ISEEIKL	----	CEAG	E----	C-S	YLRPQRRNIL	RNILLDALA	-REF-	EKKK	
Goldfish2	VSEEIKL	----	CNAG	K----	C-S	FLIPQGRNIL	KTILLDAL	-RDF-	QKRK	
Zebrafish2	VSEEVKL	----	CEAG	K----	C-S	YLRPQGRNIL	KTILLDALI	-RDF-	QKRK	
Eel2	VLDEIKL	----	CDGG	E----	C-S	YLRPQPKSLL	KNILLDALA	-REF-	QKRK	
Anchovy2	VSEEIKL	----	CEAG	E----	C-S	YLRPQRRNLL	KSILLEALT	-REF-	QRRK	
Arowana2	VSGIKL	----	CEDR	K----	C-S	YLRPQQKNIL	-TILVDAST	-REF-	QKRK	
Sturgeon2	DSDEVKL	----	CDGD	E----	C-S	YLRHPRKNIL	RSILADMLT	-RQM-	QRRK	
Coelacanth2	VSEEIKL	----	CDGE	E----	C-T	YLRSPRKSIL	KEILADIIA	-WQI-	QKKK	
Bullfrog2	VSEEIKL	----	CEGE	E----	C-A	YLRNPRKNLL	KNILADVLA	-RQL-	QKK	
Gegko2	VSEDIKL	----	CDGD	D----	C-T	YLKIPREKIV	TSLLADLLA	-KHL-	QKKK	
Turtle2	ASEEIKL	----	CDGE	A----	C-A	YLRSPRKTIV	NTLLADLLA	-RQL-	QKKK	
Alligator2	ASEEIKI	----	CGGE	E----	C-A	YVRSPRMNVV	KTLLADMLA	-RQL-	QKKK	
Elephantshark2	VSEVFQL	----	CEGD	D----	C-A	FVRSPRTNLF	RSILADLVA	-GRF-	QKKK	
Catshark2	VSEEIKL	----	CRGD	G----	C-L	FLGSPRKDVI	RSIVTMDLM	-QQI-	QKKK	
Whale	ASEEIKL	----	CQGE	G----	C-L	LLRSPRRGII	RSIVMDMLV	-QQI-	QKKK	
Xenopus2	ISDELKP	----	CEGE	S----	C-D	YPMNE-MSIL	KGLLTRFLF	-PRE-	QRRK	
Koala2	ASEEGKL	----	WDGG	E----	C---	-----RSLL	KTLLADVLA	-QQQ-	QK	
Lamprey1	LEQLEPPSN	----	AFECDGP	E----	C-A	FSRVPNTKLI	RELASYLSQ	-RNY-	DRKGA	
Lamprey111	LEEELEAPNS	----	AFECDGP	E----	C-A	FARVPTGELV	REIVSYLSQ	-KNY-	QRRK-V	
Chicken2	SAPQVPAALR	----	PCPTP	P----	C---	-----RPLPPMPSTL	RAALWRPLE	-AAL-	RQPH	
Human2	PSDALAPLDD	----	SMPWEGR	T----	T-AQ	WSLHRKRHLA	RTLLTAARE	-PRP-	APPSS	
Panda2	PSNALAPPEN	----	SVPWEAR	T----	T-GW	WPLRQKQHLV	KTLLTGRRRA	-SRP-	VALQ	
Sheep2	PSDALAWPED	----	SVPWKSR	T----	M-TR	WFLRGKQHLV	QTLLVSKVEG	-PHP-	WPLQG	
Elephantshark1a	VAGEVEELIQ	----	SRGRATVELP	E----	C---	-----SGDNPGKMLV	RKNI	-----	-----	
Elephantshark1b	VTGEVEELLQ	----	SRGRATVELP	E----	C---	-----PGDKPRKMVL	RKNM	-----	-----	
Lamprey11	VSSGLQVADW	----	HVVCERS	PNGFSGC	AM	CCSPGCPTFL	SQVLEASLG	-T-	-----	
Anchovy1	VMEGLPRRG	----	GARCGSD	T----	RD	AANQERPSTL	EQLISLMSRA	-NEV-	-----	
Goldfish3	VEATFKMMDA	----	GDAVLSIP	AD	-----	-SPMEQLLP	HIVNEVDADG	-LPL-	KEQRF	
Zebrafish3	MEATFRMLDP	----	GDTVLSIP	AD	-----	-SPMEQLSPI	HIVNEVDAEG	-LPL-	KGQRF	
Chanchita3	LEATIRMMGT	----	GGVVSIP	EE	-----	AS	AQTQERLRPY	NIINDSSH	-FD-	GKKRF
Mackerel3	LEATIRMMGT	----	GGVVSIP	EE	-----	AS	AQTQERLRPY	NVINDSSH	-FD-	RKKRF
Seabream3	LEATIRMMGT	----	GEVVSIP	EE	-----	AS	AQTQERLRPY	NVINDSSH	-FD-	RKKRS
Tilapia3	LEATIRMMGT	----	GEVVSIP	DE	-----	AN	AQTQERLRPY	NIINDSSH	-FD-	RKKKV
Medaka3	LEATIRMMGT	----	GRVVSIP	ED	-----	AS	AQTQERLRQY	NLINDGSTY	-FD-	RKKRF
Pejerrey3	LEATIRMMGT	----	GGVVSIP	EE	-----	AS	AQIQERFRPY	SVINDSSH	-LDTW	RKKKV
Whitefish3	LEATIRMMDT	----	GGEVALP	EE	-----	TS	AHVSERLRPY	DVI	-----	SKKWM
Salmon3a	LEASIKMMDT	----	GGVVALP	EE	-----	TS	AHVSERLRPY	DVI	-----	LKKWM
Salmon3b	LEATIRMMDT	----	GGVMVLP	EE	-----	TG	AHVPERLRPY	DVM	-----	SKKRM
Arowana3	TEAKVKMMDS	----	GDLVTFF	EE	-----	AS	PFVPESLGTN	QFGSEDGGE	-FT-	RKRKW
Anchovy3	LEATFRMMDA	----	GDTLIPL	-----	-----	-----TAEKLQPN	DAIIDDIEE	-NAV-	RRGR	
Catshark3	MDAYLEMVND	----	EDIITDF	E----	IPKY	QYLYQKMNSP	PAYIPDISD	-RKFK	QKRKL	-----
Whaleshark3	MDAYLEMIND	----	EDVITDF	E----	IPRY	QYLYQRANNP	QAIIPDLND	-RKIP	PKRKL	-----
Amphioxus	AADSVSAAEV	----	YDASEGS	E----	V-TK	EDFKMAVRTL	FRILGDYLO	-KRT-	NQN	-----

Human1	-----
Panda1	-----
Rat1	-----
Koala1	-----
Chicken1	-----
Pelican1	-----
Duck1	-----
Alligator1	-----
Turtle1	-----
Gecko1	-----
Sturgeon1	-----
Gar1	-----
Eel1	-----
Whitefish1	-----
Medaka1	K-----
Seabream1	KK-----
Chanchita1	KK-----
Tilapia1	ERFL-----
Mackerel1	KK-----
Pejerrey1	KK-----
Xenopus1	-----
Bullfrog1	-----
Catshark1	-----
Medaka2	-----
Chanchita2	-----
Tilapia2	-----
Seabream2	-----
Mackerel2	-----
Pejerrey2	-----
Whitefish2	-----
Salmon2a	-----
Salmon2b	-----
Goldfish2	-----
Zebrafish2	-----
Eel2	-----
Anchovy2	-----
Arowana2	-----
Sturgeon2	-----
Coelacanth2	-----
Bullfrog2	-----
Gegko2	-----
Turtle2	-----
Alligator2	-----
Elephantshark2	-----
Catshark2	-----
Whale	-----
Xenopus2	-----
Koala2	-----
Lamprey1	LK-----
Lamprey1l1	LK-----
Chicken2	-----
Human2	---NKV---
Panda2	-----
Sheep2	QLRTEVVGG
Elephantshark1a	-----
Elephantshark1b	-----
Lamprey1l	-----
Anchovy1	-----YD
Goldfish3	PKRRGRV--
Zebrafish3	PDRRGRV--
Chanchita3	PNN-----
Mackerel3	PHK-----
Seabream3	PNK-----
Tilapia3	P-----
Medaka3	MSQ-----
Pejerrey3	LE-----
Whitefish3	PHK-----
Salmon3a	PHK-----
Salmon3b	PHK-----
Arowana3	MHOKRII--
Anchovy3	PLRRELLD-
Catshark3	QSNLQQNTD
Whaleshark3	QSNL-----
Amphioxus	-----