

gi_110611231_Homo_sapiens_I25-K262	IQL	NNNGYEG	IVVAIDPNVPE	X(02)	TLIQQIK	DMVTQASLY	LFE	ATGKR	
gi_5729769_Homo_sapiens_V33-A262	VQL	QDNGYNG	LLIAINPQVPE	X(02)	NLISNIK	EMITTEASFY	LFN	ATKRR	
gi_74721541_Homo_sapiens_V24-L262	VTL	NNNGYDG	IVIAINPSVPE	X(02)	KLIQNIK	EMVTTEASTH	LFH	ATKQR	
gi_205831469_Homo_sapiens_I24-L262	IKL	NNNGFED	IVIVDPSVPE	X(02)	KIEQIE	DMVTTASTY	LFE	ATEKR	
gi_157818579_Rattus_norvegicus	IQL	NNNGYEG	IVIAIDHDVPE	X(02)	ALIQRIK	DMVTSASTPY	LFE	ATGKR	
gi_126306129_Monodelphis_domestica	IEL	NNNGYEN	IVIAIDPALQE	X(02)	KLIQHIK	DMVSEASNY	LYG	ATEKR	
gi_301609304_Xenopus_tropicalis	IKL	NGGGYED	IVIAIHPNVTE	X(02)	KIENVQ	NMVKEANQY	LFN	ATKQR	
gi_327270784_Anolis_carolinensis	VKF	NNGAFED	IVIAINPGLSE	X(02)	KIINNIIK	DMVKEASSY	LFI	ATEQR	
gi_301768028_Ailuropoda_melanoleuca	VQL	QDNGYDG	LLIAINPQVPE	X(02)	NLIYNIK	EMITTEASFY	LFN	ATKRR	
gi_198415896_Ciona_intestinalis	VTL	VNNGYDG	IVVAINPAVAEDX	(01)	TLINKIR	NMFTTRASPT	LFT	ATKKR	
gi_326674112_Danio_rerio	IKL	DGGGYVD	ITIAIGAKVKQ	X(02)	TLIDKIK	EMVTDGGSFY	LYH	ALDKK	
gi_291221810_Saccoglossus_kowalevskii	IVL	RDNGYEG	IVIAIHNVKEDX	(01)	QLIQIK	DTFTAASAF	LYT	ATNYS	
gi_260795693_Branchiostoma_floridae	IKL	QNNYEYD	VLIAIHQDVPEDX	(01)	RIVERLK	EILTEASEE	LYV	STNSR	
gi_198417752_Ciona_intestinalis	VSL	VGNSYQG	VVIAINPEIAESX	(01)	TLLNSIK	AAWTTEASAA	LYT	ATRKR	
gi_291242482_Saccoglossus_kowalevskii	VTI	SDNGYDG	IVVAIHRHISENX	(01)	SLIDEIK	NAFTDASAF	LYR	ATNNR	
gi_115964593_Strongylocentrotus_purpuratus	INL	NDGAYSN	LLIAIHKNVPEDX	(01)	TIENLTK	TMFTSASQR	LYN	ATKQR	
gi_196006922_Trichoplax_adhaerens	ITL	RKNGYEG	IVLAISEQVEEKX	(03)	DLIDVLN	TLARASVY	LFS	ATKQR	
gi_321455024_Daphnia_pulex	VTL	TRDGYQN	VVVSIEENSGFAX	(03)	KGLDTVK	EMIRNTSKS	FAQ	ALERP	
gi_291398577_Oryctolagus_cuniculus	VNL	NNNGYDG	IVIAINPSVPE	X(02)	KLIQNIK	EMVTDASTY	LFQ	ATKRR	
gi_149636528_Ornithorhynchus_anatinus	IEL	KNGYEG	IVIAINPQVPE	X(02)	KIQIK	DMVTTEASTY	LFK	ATKKL	
gi_148680070_Mus_musculus	IKL	NENGYED	IIAIDPAVPE	X(02)	TIERMK	EMVTKASTY	LFE	ATEKR	
gi_118094354_Gallus_gallus	VKL	NESGYED	LVVAINPSVTE	X(02)	NIILNTK	AMIKDASNY	LFE	ATKHR	
gi_327270788_Anolis_carolinensis	VKL	HNGGYED	VVIGIHPKIAE	X(02)	KIINSIKX(17)	DMLEASSY	LFR	ASQRR	
gi_260796397_Branchiostoma_floridae	IQL	QNNYEYD	VLIAINRNIPEDX	(01)	QIVDRLK	EIFTEASEA	LYI	ATRSR	
gi_291223817_Saccoglossus_kowalevskii	ISA	QANEYKG	LVIAIHNSIQEDX	(01)	RLIERIK	TVFTTGSEY	LFN	ALQRR	
gi_291223807_Saccoglossus_kowalevskii	ITL	ESNGYTG	LLIAIHQRVPEDX	(01)	TILQRLK	DIFTDASKY	MYQ	ASRQY	
gi_291222847_Saccoglossus_kowalevskii	IYL	VDNKYTP	IHIAIHSDVEESX	(01)	AMIDDI	DLITEASAY	LYE	ATRRR	
gi_198421549_Ciona_intestinalis	VNL	VNNGYEG	IVVAINPSIPEDX	(01)	SLVDNIK	TLLNEASPI	LWS	ATKNR	
gi_321460553_Daphnia_pulex	VTI	TDNGYKN	LVVAISPAAPIDX	(03)	SIKNIK	QITTEASPV	LYK	ATGNR	
gi_291231970_Saccoglossus_kowalevskii	VYL	SNNEYHD	IVIAIDENVPEDX	(01)	SIIDNIM	TIFTDASEF	LYE	VTRHR	
gi_321460551_Daphnia_pulex	-	TNSGYNN	LVVAISSETPASX	(03)	IIDNIK	KMISEASPV	LYV	ATENR	
gi_260786375_Branchiostoma_floridae	VTI	TNNGYST	VLVAISEKVP	PEAX(03)	DLIQNIL	TAFTDASEY	LYQ	ATKNR	
gi_196007642_Trichoplax_adhaerens	VTI	KENGYAG	VVVAISENIVESX	(03)	TLVSDLI	QNFINASSY	LYT	ATRRR	
gi_196007110_Trichoplax_adhaerens	VQL	TNNGYEG	VVIGISDSVSESX	(03)	DLLDQIQ	STFNKSSSK	IYT	AFRRR	
gi_115963085_Strongylocentrotus_purpuratus	-	-	-	-	-	DMFREGSTF	LYQ	ATRRR	
gi_321460554_Daphnia_pulex	VKL	DQNGYEN	VLIRIADDVSSVX	(03)	QTISNLK	VMLEASSA	LCT	AVEGR	
gi_115650848_Strongylocentrotus_purpuratus	-	-	-	-	-	DIFRAGSSI	LFN	ATNLR	
gi_328707920_Acyrthosiphon_pisum	-	QSGAYDN	VVVAIKDSVPVTX	(03)	LIVNNVE	AAFTSGSKS	LHE	ALSGK	
gi_270012532_Tribolium_castaneum	-	-	-	-	-	ETLTSASQY	LFS	ALDSR	
gi_301604098_Xenopus_tropicalis	VQL	NSGGYDN	ILIAIDPDVSE	X(02)	RILENIQ	DMVKEATHY	LFN	ATKKR	
gi_149636524_Ornithorhynchus_anatinus	IHL	NSNRYEN	LVIAINPDVPE	X(02)	KIIDKIK	EMVSEASMY	LFQ	ATEKR	
gi_118094412_Gallus_gallus	VVL	RDGGYEG	LLAAVHPRVPE	X(02)	RLVAHLQ	EMITTEASSY	LFS	ATKGR	
gi_72168566_Strongylocentrotus_purpuratus	ITI	QDGGYEN	VLIAINKDVPEDX	(01)	TIIDNLI	DIFSSGSGH	LFT	ATRRR	
gi_260807874_Branchiostoma_floridae	IVL	ENNGYEN	VLVAISPAVPEDX	(01)	RIVARLQ	EILTEESQA	MYD	ATERR	
gi_291242943_Saccoglossus_kowalevskii	AKL	VDNGYDN	VLVAINGHVPEX	(01)	EIIDNLK	EAFTEASDY	LYR	ATRQR	
gi_291223811_Saccoglossus_kowalevskii	IRL	EDNGYKG	ILIAINENVAENX	(01)	TLIENLK	EMFTSASRE	MYQ	ATHNR	
gi_291239167_Saccoglossus_kowalevskii	INL	IDNGYET	ILIAIHESVPEDX	(01)	RIVDRLK	EIFTDASGF	VFQ	GTFRN	
gi_260810520_Branchiostoma_floridae	-	KLQNNGYTD	VLIAINNVIPEDX	(01)	NIHRLK	EVFTEASEE	LYS	ATKNR	
gi_291239807_Saccoglossus_kowalevskii	VTI	VNNEYHD	IVIAIEENVPEDX	(01)	ALLDKIQ	EVFTDASAF	LCE	ITRYR	
gi_260793444_Branchiostoma_floridae	-	-	-	-	-	IVTDASEYX(01)	LHL	TTRQR	
gi_291242484_Saccoglossus_kowalevskii	-	TI	SDNGYDG	IVVAIHADISEHX	(01)	DLIDKIK	DAFTDASAF	LYT	ATNNR
gi_291229678_Saccoglossus_kowalevskii	VTI	QNNYEYRN	IVIAINENVPEDX	(01)	HLLDRIR	EIFTKASAF	LYK	ATRYR	
gi_291223815_Saccoglossus_kowalevskii	-	-	-	-	LR	DVFTTEASAF	LYR	ATKHR	
gi_196007112_Trichoplax_adhaerens	ARL	INNGYED	VVIAISNSVSE	ERX(03)	NLLDQIQ	RIFTESSSR	LYT	AFRRR	
gi_72152222_Strongylocentrotus_purpuratus	-	-	-	-	-	IFTSGSSF(01)	LFN	ATNGR	
gi_195998007_Trichoplax_adhaerens	VTI	NNNGYED	ITVALSPSITQTX	(03)	NIIDKIR	QLLTVASGY	LYT	ATRRR	
gi_198419444_Ciona_intestinalis	-	-	-	-	-	-	-	-	
gi_198415894_Ciona_intestinalis	-	-	-	-	-	-	-	-	
gi_260786377_Branchiostoma_floridae	ARL	QNNAYQD	VVVAIAESVPEDX	(01)	ALLTSLR	VKFTTEASYQ	LFA	ATGGR	
gi_338161004_Xenopus_laevis	IKL	QNGGYED	IVIAINPGLRE	X(02)	KIENIQ	NMIKDTPY	LFS	ATRRR	
gi_301609308_Xenopus_tropicalis	VQL	KNGGYED	IIIAVNPQVPE	X(02)	KIENIK	KMLTDASSY	LFQ	ATKKR	
gi_291222148_Saccoglossus_kowalevskii	VSL	EDNGYRD	VLVAIHESI	EEDX(01)	LLITRIK	EIFTSASSH	LHL	ATEYH	
gi_291223809_Saccoglossus_kowalevskii	VKL	EENGYTG	IVIAIHSSIPENX	(01)	QIEQLQ	VAFTDASDF	LFT	ATKRR	
gi_321460550_Daphnia_pulex	ISI	ANNAYSN	IVVAISPDVPNTX	(03)	IILKNIQ	LMIRRASV	LYR	ATEKR	
gi_321478616_Daphnia_pulex	VNI	VTNGYRD	IVVAISPDVSPNX	(03)	DLLNKLK	LLITEASFD	LYE	ATRRR	
gi_241581081_Ixodes_scapularis	IDT	TDGGYRD	VVVAIHPSVTPDX	(01)	NIIVNIK	ALFREASLF	LHR	ATRRR	
gi_291224467_Saccoglossus_kowalevskii	VTI	INNEYHD	IVIAIEDNVPEDX	(01)	ALLDKIQ	EVFTDASAF	LSX(67)	RSRYR	
gi_321467441_Daphnia_pulex	IVL	EGNGYSN	IVVAISKDIPQX	(05)	ELIDKIK	DLLTEASAV	LFK	ATDDK	
gi_198424353_Ciona_intestinalis	-	L	INNGYGN	LTIWIGPEVPEX	(01)	ELVTKLQ	ELITKTS	LFR	LTGKR
gi_198419582_Ciona_intestinalis	-	-	-	-	-	-	-	-	
gi_312373778_Anopheles_darlingi	-	-	-	-	-	MLTASASQY	LFN	ALDSR	
gi_242023388_Pediculus_humanus_corporis	-	-	-	-	-	TSASKS	LFS	SLDGR	
gi_115749084_Strongylocentrotus_purpuratus	-	-	-	-	-	-	-	-	
gi_241672368_Ixodes_scapularis	ITF	PASGF	-	-	QPP	-	-	-	
gi_313226492_Oikopleura_dioica	VKL	VKNGYEG	LYIAISNKVPEDX	(01)	SLVGKLV	WLLHAFSRS	LFA	KTQKN	
gi_241998382_Ixodes_scapularis	VTI	GKDGSYEN	VIVAIGKDVYQX	(01)	DIIVMLK	ALFRKASAF	LLK	ATRGK	
gi_321462270_Daphnia_pulex	-	-	-	YKVEE	-	KEMMMG	-	NVLTATSEQ	
gi_320352592_Desulfohalobium_propionicum_DSM_2032	AAC	RDRNIVNL	SVAVHYDAP	X(01)	GDITTIQ	NMVSAGSTT	LFQ	VTGQ	
gi_159898230_Herpetosiphon_aurantiacus_DSM_785	-	SSDFQNLHL	LIVSIEWQPGQX	(17)	SLQEILT	TALQETSQT	LYQ	ATDQ	
gi_260426558_Citreicella_sp._SE45	DGS	VDPSNGDL	DFSVHFNFP	X(03)	AQIDDTK	AAIEQLALG	ICD	ATDQ	
gi_149919617_Plesiocystis_pacifica_SIR1	-	TQ	GAGATTSVHATIDVHVAFP	X(03)	DELDEL	EVLQESARM	ICD	VTGG	
gi_114046070_Sewanella_sp._MR7	-	-	ENKLSK	VAICVGFALTSX	(26)	NHMQAVS	-	AMSSDSSNAX(30)	
gi_148657095_Roseiflexus_sp._RS1	-	-	-	LTIGLYRNPNSQX	(01)	RAVYE	-	EMIRYLADA	
gi_312879450_Aminomonas_paucivorans_DSM_12260	-	-	-	-	-	-	-	VIKYWADA	
gi_114321541_Alkalilimnicola_ehrlichii_MLHE1	-	DSWFSK	ARIGADTAPASAX	(08)	DRVV	GASTDAGTTX	(31)	VCE	
gi_57642113_Thermococcus_kodakarensis_KOD1	-	DILGIS	LTVSTEWALS	X(03)	KRNLV	YSIRKASDF	VYD	YTDGY	
gi_254173443_Thermococcus_sp._AM4	-	-	LTVSEWKMS	X(03)	KEKLV	YSIRKASDF	IYD	YTDGY	
gi_254172615_Thermococcus_sp._AM4	-	DILGIQ	LNVSEWKMS	X(03)	KEKLV	YSIRKASDF	IYD	YTDGY	
gi_163848422_Chloroflexus_aurantiacus_J10f1	-	-	IDVSEWDAR	X(03)	GYMAQLR	TDLRRASEL	LYD	WTNGQ	
gi_240103523_Thermococcus_gammatolerans_EJ3	-	-	LTVSEWDMS	X(03)	KRNLV	YSIRKASDF	VYD	HTDGY	
gi_309791403_Oscillochloris_trichoides_DG6	-	-	LPVYSEWDVR	X(03)	AFLRLQ	SDLERASEL	LYD	WTGQ	
gi_309791671_Oscillochloris_trichoides_DG6	-	-	ALIN	LVVSEWDAR	X(03)	RFMTQLR	LYD	ATNGQ	
gi_309790879_Oscillochloris_trichoides_DG6	-	-	-	-	FMHALR	SRLQRTSEV	LYD	WSNGQ	
gi_159898060_Herpetosiphon_aurantiacus_DSM_785	TIA	TKVCLFN	VLVAIEWVP	X(02)	IELNQLQ	WAFRRASDF	LFD	VSNGT	

	70	80	90	100	110	120	130					
gi_110611231_Homo_sapiens_I25-K262	FYFKNVAAIL	-----	IPET-WKTKA	D-----	YV-RPX (03)	TYKNADV	LVVAEST	-----	PPX (01)	N--		
gi_5729769_Homo_sapiens_V33-A262	VFFRNLIKIL	-----	IPAT-WKANN	-----	NS-KIX (03)	SYEKANV	IVTDWY	-----	GAX (01)	G--		
gi_74721541_Homo_sapiens_V24-L262	AYFRNVSIL	-----	IPMT-YKSKS	E-----	YL-IPX (03)	TYDQADV	IVADLY	-----	LKX (01)	G--		
gi_205831469_Homo_sapiens_I24-L262	FFFKNVSI	-----	IPEN-WKENP	Q-----	YK-RPX (03)	NHKNADV	IVAPPT	-----	LPX (01)	R--		
gi_157818579_Rattus_norvegicus	FYFKNVAAIL	-----	IPEN-WNTKP	E-----	YK-RPX (03)	TLKNADV	LVSTMS	-----	PIX (01)	N--		
gi_126306129_Monodelphis_domestica	FYFKGVSIL	-----	IPET-WQKKP	E-----	YE-KPX (03)	TYKKADV	IVDPN	-----	PPX (01)	N--		
gi_301609304_Xenopus_tropicalis	LFIKSAKIL	-----	IPFK-WSKHN	N-----	AD-KPX (03)	TYDKADV	IVAEPH	-----	LKX (01)	G--		
gi_327270784_Anolis_carolinensis	FYFKTVKVV	-----	IPLT-WAAKP	E-----	YA-RVX (03)	SYTNADI	IVADPF	-----	LKX (01)	G--		
gi_301768028_Ailuropoda_melanoleuca	VFFRNTKIL	-----	IPAT-WRANN	-----	YS-KVX (03)	LYEKANV	IVTDWY	-----	GAX (01)	G--		
gi_198415896_Ciona_intestinalis	AYFRNINIL	-----	VPKT-WTSGS	-----	YQ-TAX (03)	TYRKADV	IVAPPN	-----	PVX (01)	G--		
gi_326674112_Danio_rerio	VYLKDATIL	-----	VPSH-WSCKS	-----	CS-KAX (03)	SFEKAKI	KIDHAK	-----	L-----	---		
gi_291221810_SaccoGLOSSUS_kowalevskii	TYFRNITLL	-----	IPLS-WSNKP	E-----	YE-MAX (03)	TFEKAPI	VVQK-X (02)	-----	PLX (01)	G--		
gi_260795693_Branchiostoma_floridae	AFFKEVKIL	-----	IPKT-WSKKG	E-----	YL-PAX (03)	TFERANV	RVVDPN	-----	ALX (01)	G--		
gi_198417752_Ciona_intestinalis	AYFGNITIL	-----	VPKS-WNG--	T-----	YK-RAX (03)	TYDAADV	RVVNT	X (01)	RVX (01)	G--		
gi_291242482_Saccoglossus_kowalevskii	VYFQNTIL	-----	VPTG-WSENS	G-----	YG-MAX (03)	TYETADV	RVVTK-X (02)	-----	GX (01)	D--		
gi_115964593_Strongylocentrotus_purpuratus	VHWSHIKIL	-----	VPNT-WSIQS	Q-----	YQ-LAX (03)	TLQSANM	LVHS-X (01)	-----	X (01)	D--		
gi_196006922_Trichoplax_adhaerens	AYFKGITIL	-----	IPET-WEDNS	I-----	YE-PAX (03)	TYNTADI	RVVDDY	X (02)	ARX (01)	A--		
gi_321455024_Daphnia_pulex	AYFGNVTII	-----	FPDS-WVADP	L-----	CSP-LMX (11)	RSHRADV	RVVTPDH	-----	PVX (01)	G--		
gi_291398577_Oryctolagus_cuniculus	VFFRNVHIL	-----	VPIT-WKSKS	E-----	YL-MPX (03)	SYDQADV	IVIANPS	-----	LKX (01)	A--		
gi_149636528_Ornithorhynchus_anatinus	FYLKSVTIL	-----	IPET-WRDKP	D-----	YS-IAAX (03)	SYKTADI	IVAEAS	-----	PVX (01)	G--		
gi_148680070_Mus_musculus	FFFKNVSI	-----	IPES-WKDSP	H-----	YR-RPX (03)	SYKHADV	IVAPPA	-----	FMX (01)	R--		
gi_118094354_Gallus_gallus	FFFKSVKII	-----	LPKT-WKNS	T-----	YS-RLX (03)	SYNKADV	IVADPY	-----	LKX (01)	G--		
gi_327270788_Anolis_carolinensis	FYFRTVKIV	-----	IPLT-WASKP	E-----	YK-RAX (03)	SYVNADI	IVAEFP	-----	VKX (01)	G--		
gi_260796397_Branchiostoma_floridae	AYIKQVKIL	-----	IPNT-WTRQP	Q-----	YL-PPX (03)	TFDRANV	RVVDVQN	-----	PLX (01)	G--		
gi_291223817_SaccoGLOSSUS_kowalevskii	IFWKQITIL	-----	IPKT-WSVKP	E-----	YM-AAX (03)	SFERAHV	IVIDN-X (02)	-----	PDX (01)	G--		
gi_291223807_Saccoglossus_kowalevskii	THFHDTVIL	-----	VPST-WSDNS	A-----	YL-TAX (03)	TYDLGNI	LVDE-X (02)	-----	PEX (01)	W--		
gi_291222847_Saccoglossus_kowalevskii	AHFKDIVIL	-----	IPHT-WKYNP	H-----	V-RAX (03)	SYDTANI	IVIDD-X (02)	-----	PIX (01)	G--		
gi_198421549_Ciona_intestinalis	AYFGEVITIL	-----	VPST-WTGSY	-----	TQ-ATX (03)	VYNKADI	IVADPN	-----	PQX (01)	M--		
gi_321460553_Daphnia_pulex	AYFQSVHIL	-----	IPET-WDHIE	-----	AD-LSX (03)	TFDTADV	IVDTPN	-----	PMX (01)	K--		
gi_291231970_Saccoglossus_kowalevskii	AFFKDISIL	-----	VPKS-WDDNL	E-----	YG-SAX (03)	TYDKADV	RVVIRE	-----	NDX (01)	N--		
gi_321460551_Daphnia_pulex	AYFQSVHIL	-----	IPAE-WEHDE	-----	AS-PSX (03)	TFNTADV	IVDTPN	-----	AMX (01)	K--		
gi_260786375_Branchiostoma_floridae	AYFKDVTVL	-----	IPHT-WKDMS	S-----	YE-DAX (03)	TFEKANV	RVVDLP-X (01)	-----	SHX (01)	G--		
gi_196007642_Trichoplax_adhaerens	AFFKNVTIL	-----	IPAT-WQDKV	T-----	YQ-AAX (03)	SFDSADV	FRIDLX (02)	-----	X (01)	---		
gi_196007110_Trichoplax_adhaerens	AFFRHITII	-----	IPRS-WKNSI	K-----	YK-PAX (03)	SFHTADV	FRIEHTK	-----	ASX (05)	S--		
gi_115963085_Strongylocentrotus_purpuratus	VFFKNVTIL	-----	IPSH-WTTQP	E-----	YG-SPX (03)	TFDTADV	IVAQPP-X (01)	-----	PLX (01)	A--		
gi_321460554_Daphnia_pulex	AYFRNVTIL	-----	IPNH-WAARN	N-----	CL-VEX (06)	RTHMADV	LVTSNH	-----	PNX (01)	G--		
gi_115650848_Strongylocentrotus_purpuratus	VYLRGITIL	-----	VPPT-WSRNS	E-----	YQ-VAX (03)	AYENANV	LVVTD-X (02)	-----	X (01)	N--		
gi_328707920_Acyrthosiphon_pisum	AYFRSVTVM	-----	LPQN-WPDHCV	G-----	HLRGI (03)	OGETPDV	TVLPRG	-----	PVX (01)	G--		
gi_270012532_Tribolium_castaneum	AFLRSATVL	-----	LPPT-WPDSC	A-----	SS-AVX (03)	SGETPDV	TVLPRG	-----	PX (01)	R--		
gi_301604098_Xenopus_tropicalis	IFIRSVKIL	-----	IPVT-WTSKD	I-----	YQ-LRX (03)	TYEKAEV	IVIANPY	-----	LKX (01)	G--		
gi_149636524_Ornithorhynchus_anatinus	FYFGNVSIL	-----	IPPT-WQSEA	S-----	YL-IPX (03)	SYDKADV	IVADPF	-----	VKX (01)	G--		
gi_118094412_Gallus_gallus	FYFRSVKIL	-----	IPPT-WKEKS	-----	YE-KPX (03)	TYEKADV	IVAAPY	-----	WKX (01)	G--		
gi_72168566_Strongylocentrotus_purpuratus	AYWRNITIL	-----	IPKT-WTPKP	E-----	YE-PAX (03)	SFETANV	IVDT-X (02)	-----	PEX (01)	E--		
gi_260807874_Branchiostoma_floridae	AYLKNITIL	-----	IPKS-WTPQP	E-----	YR-TAX (03)	LFQRANV	RVVDQLN	-----	PLX (01)	G--		
gi_291242943_Saccoglossus_kowalevskii	AFFRKVDL	-----	IPTT-WQDRP	E-----	YE-AVX (03)	RFSRADV	RVVEAN	-----	PVX (01)	G--		
gi_291223811_Saccoglossus_kowalevskii	AYMKEITIL	-----	VPKT-WSDAI	T-----	NI-SAX (03)	IFDSANI	IVDKAN	-----	AEX (01)	D--		
gi_291239167_Saccoglossus_kowalevskii	TYFRNVTIL	-----	LPNT-WSDEL	R-----	EA-PAX (03)	RFDIANV	IVDQ-X (02)	-----	PNX (01)	G--		
gi_260810520_Branchiostoma_floridae	AFFKEIKIL	-----	IPKT-WSKKE	E-----	YL-LAX (03)	TFERANV	RVVLSN	-----	PRX (01)	P--		
gi_291239807_Saccoglossus_kowalevskii	AYFKNITIL	-----	VPKF-WSDNV	Q-----	YE-MPX (03)	SYTSDV	IRIDNS-X (01)	-----	Y-----	---		
gi_260793444_Branchiostoma_floridae	AYFGGVSIL	-----	VPET-WQDRP	E-----	YE-SAX (03)	TYDTSV	RVVAEPN	-----	PEX (01)	D--		
gi_291242484_Saccoglossus_kowalevskii	VYFRNITIL	-----	VPTE-WSEDL	G-----	YV-MSX (03)	TYETANV	RVVDK-X (02)	-----	GX (01)	D--		
gi_291229678_Saccoglossus_kowalevskii	AFFKDIVIL	-----	VPNS-WSDNP	D-----	YE-TPX (03)	SYDKADV	IVDYPDX (02)	-----	SRX (01)	G--		
gi_291223815_Saccoglossus_kowalevskii	VYFRNITIL	-----	VPAR-WSEDL	G-----	YR-MAX (03)	TYETAHV	RVVDK-X (02)	-----	TX (01)	G--		
gi_196007112_Trichoplax_adhaerens	AYFRYITIV	-----	IPRS-WEDNA	K-----	YE-PAX (03)	SFHTADV	FRIDHDT	-----	VSX (05)	S--		
gi_72152222_Strongylocentrotus_purpuratus	AFFRDVAAIL	-----	IPKN-WPQLP	T-----	HK-FAX (04)	QLGTANL	LVVPTGX (02)	-----	PDX (01)	P--		
gi_195998007_Trichoplax_adhaerens	AYFRQITIV	-----	LPSS-WSTTS	D-----	QS-VTX (03)	NYWNADI	QVDSFD	-----	RRX (01)	LDI		
gi_198419444_Ciona_intestinalis	-----	-----	-----	-----	-----	-----	KADV	IVIAEAN	-----	PVX (01)	Q--	
gi_198415894_Ciona_intestinalis	-----	-----	-----	-----	-----	-----	ADV	IVIAQAN	-----	PQX (01)	G--	
gi_260786377_Branchiostoma_floridae	AYFGTVKIL	-----	VPRT-WDYYG	S-----	YQ-FSX (03)	RFGRADV	RVVPAV	-----	D-X (04)	F--		
gi_338161004_Xenopus_laevis	VYIRSVKIL	-----	IPIT-WPNK	N-----	YT-KAX (03)	TYDKADV	IVIASPH	-----	VKX (01)	G--		
gi_301609308_Xenopus_tropicalis	LYIRSAKIL	-----	IPNT-WATNS	S-----	YG-RPX (03)	SYDKADV	IVAPPF	-----	VX (01)	G--		
gi_291222148_Saccoglossus_kowalevskii	TYFNNTIL	-----	IPKT-WSDNL	T-----	EA-AAX (03)	RFDLANV	IVDQ-X (02)	-----	TNX (01)	G--		
gi_291223809_Saccoglossus_kowalevskii	AYFKDISIL	-----	IPPT-WSHKS	E-----	YS-NAX (03)	SYEKANV	IVDT-X (02)	-----	AVX (01)	G--		
gi_321460550_Daphnia_pulex	AYFKDVRIL	-----	VPES-WSNIR	-----	AN-LSX (03)	TYSEADV	RVVAPP	-----	STX (01)	G--		
gi_321478616_Daphnia_pulex	SYIESVNIL	-----	IPQT-WVNV	T-----	AN-ASX (03)	NFPDAE	IVQIDNPS	-----	WRX (01)	G--		
gi_241581081_Ixodes_scapularis	VFFKDVITIA	-----	VPST-WPRRE	E-----	AEA-TX (03)	LFDGADV	RVVAEPN	-----	P-X (02)	G--		
gi_291224467_Saccoglossus_kowalevskii	AYFKSITIL	-----	VPKS-WTDDP	Q-----	YE-THX (03)	TYETSDV	IRIDDT-X (01)	-----	H-----	---		
gi_321467441_Daphnia_pulex	VYFKSIDIV	-----	IPPS-WKDTE	A-----	SN-TLX (12)	SFQLADV	RVVRLNS-X (02)	-----	AX (01)	N--		
gi_198424353_Ciona_intestinalis	AYIRNVI IA	-----	IPKT-WGTPP	E-----	SFNQXS (07)	SQTSADV	RVVRSNS	-----	PRX (17)	V--		
gi_198419582_Ciona_intestinalis	-----	-----	-----	-----	-----	-----	ADV	IVAPAN	-----	SAX (01)	G--	
gi_312373778_Anopheles_darlingi	VYFGEVSVI	-----	LPNH-WPQTCI	P-----	YNQTRX (03)	SGETSDV	TVIRPHT	-----	KX (01)	E--		
gi_242023388_Pediculus_humanus_corporis	AYFREISIN	-----	LPDH-WSDSC	V-----	NG-PIX (03)	KGEEFDF	VVGRSH	-----	PVX (01)	G--		
gi_115749084_Strongylocentrotus_purpuratus	-----	-----	-----	-----	-----	-----	-----	-----	-----	---		
gi_241672368_Ixodes_scapularis	AYLEEVIVL	-----	VPKS-WGPKE	T-----	WA-RAX (11)	LHRDADV	RVVLEPQG	-----	SPX (01)	G--		
gi_313226492_Oikopleura_dioica	LYLRKSVIV	-----	VPET-WNPLQ	EX (03)	YE-RNX (27)	NFENTPM	RVVYHS-X (01)	-----	DYX (02)	N--		
gi_241998382_Ixodes_scapularis	FYFKDVIS	-----	MPKN-WPKKN	S-----	RKE-VX (03)	QFDQANV	QVVSGL	-----	T-----	---		
gi_321462270_Daphnia_pulex	LQWDKVTIL	-----	VSKS-LAQDC	FX (15)	RM-NAX (03)	AAQTADV	LVHSK-X (02)	-----	PLX (01)	A--		
gi_320352592_Desulfobulbus_propionicus_DSM_2032	TEIGQATIH	-----	NNSAGTT	-----	-----	-----	RADIRV	YPATX (14)	NDX (01)	A--		
gi_159898230_Herpetosiphon_aurantiacus_DSM_785	VWVEQYSVY	-----	TSGEHWN	-----	-----	-----	DADIRI	LANNX (03)	-----	---		
gi_260426558_Citreicella_sp._SE45	MRVRQVRLT	-----	QAQEDLD	-----	-----	-----	RAALWI	HAINX (01)	-----	RX (01)	G--	
gi_149919617_Plesiocystis_pacifica_SIR1	VLITDYNLA	-----	SNGYSSA	-----	-----	-----	HADMYV	YPDX (02)	-----	---		
gi_114046070_Shewanella_sp._MR7	HKLKGISIF	-----	RENKHS	-----	-----	-----	KSDI	IWGD	-----	---		
gi_148657095_Roseiflexus_sp._RS1	HKLRTVRIY	-----	PNNTSA	-----	-----	-----	KDI	IWVE	-----	---		
gi_312879450_Aminomonas_paucivorans_DSM_12260	HTLGTVRIY	-----	QGGKFGD	-----	-----	-----	KASV	LWKA	-----	---		
gi_114321541_Alkalilimnicola_ehrlichii_MLHE1	SQLGTVRVF	-----	TNGGHGS	-----	-----	-----	RADV	IWNE	-----	---		
gi_57642113_Thermococcus_kodakarensis_KOD1	AMITSVQIW	-----	DDKRQWD	-----	-----	-----	DADV	RVVHKT	KX (04)	-----	QX (01)	R--
gi_254173443_Thermococcus_sp._AM4	AMIAARVTIW	-----	DDKKNWD	-----	-----	-----	KADI	QIHNGSX (04)	-----	VX (01)	N--	
gi_254172615_Thermococcus_sp._AM4	AMITRITVW	-----	DDKRNWD	-----	-----	-----	KADV	RVVHDTTX (04)	-----	QX (01)	G--	
gi_163848422_Chloroflexus_aurantiacus_J10f1	VALGRVRI	-----	HNRRERN	-----	-----	-----	LADV	RVVYATNX (03)	-----	---		
gi_240103523_Thermococcus_gammatolerans_EJ3	AMITRVTIW	-----	DDKKNWD	-----	-----	-----	KADV	RVVYNTGX (04)	-----	IX (01)	N--	
gi_309791403_Oscillochloris_trichoides_DG6	AALGALRIV	-----	ADGS-NPP	-----	-----	-----	LAGI	HVYATNX (03)	-----	---		
gi_309791671_Oscillochloris_trichoides_DG6	VALGELHIF	-----	FAKSNWD	-----	-----	-----	NAHI	RVVYASNX (03)	-----	---		
gi_309790879_Oscillochloris_trichoides_DG6	VALGSITIV	-----	QNKERW	SHVR D	-----	-----	AQG-NX (03)	-----	RGVD	LRIYAANX (03)	-----	
gi_159898060_Herpetosiphon_aurantiacus_DSM_785	MAFGQVVF	GX (18)	HPRS-WREG	L-----	-----	-----	-----	-----	-----	-----	-----	



	210	220	230	240	250	260	270
gi_110611231_Homo_sapiens_I25-K262	VFDEYNNDX (01) K	- - - - -	FY LX (02) GR I Q A V R C S A - G	- - - - -	IT GX (14) KR CT - F	- - - - -	NKV - T - G
gi_5729769_Homo_sapiens_V33-A262	VFDEYNNDX (01) P	- - - - -	FY IX (03) NQ I K V T R C S S - D	- - - - -	IT GX (11) EN CI -	- - - - -	I - S - K
gi_74721541_Homo_sapiens_V24-L262	VFDEYNVDX (01) P	- - - - -	FY IX (03) NT T E A T R C S T - R	- - - - -	IT VX (14) RP FR - R	- - - - -	DSQ - T - G
gi_205831469_Homo_sapiens_I24-L262	VFDEYNEDX (01) P	- - - - -	FY RX (03) KK I E A T R C S A - G	- - - - -	IS GX (14) RA CR - I	- - - - -	DST - T - K
gi_157818579_Rattus_norvegicus	VFDEYNNX (01) K	- - - - -	FY LX (02) GK P Q A V R C S A - T	- - - - -	IT GX (15) GK CV - I	- - - - -	DRV - T - G
gi_126306129_Monodelphis_domestica	VFDEYNEDX (01) P	- - - - -	FY QX (02) GKN I P V K C S G - A	- - - - -	IT GX (14) RN CR - T	- - - - -	DPQ - T - G
gi_301609304_Xenopus_tropicalis	VFDEYNYDX (01) P	- - - - -	FY IX (03) GD V E A T R C S A - D	- - - - -	IK GX (12) - NCS - P	- - - - -	DPK - T - G
gi_327270784_Anolis_carolinensis	VFDEYNNDX (01) P	- - - - -	FY TX (03) NKA E A T R C S A - D	- - - - -	IT GX (11) RK CK - I	- - - - -	DHR - T - Q
gi_301768028_Ailuropoda_melanoleuca	VFDEYNDEX (01) P	- - - - -	FY IX (03) NQ I K V T R C S S - D	- - - - -	IT GX (11) EN CI -	- - - - -	I - S - K
gi_198415896_Ciona_intestinalis	VFDEYATGX (03) R	- - - - -	HY LX (04) - VL QGT R C PL - S	- - - - -	IR GX (13) QT CI - I	- - - - -	NQT - T - L
gi_326674112_Danio_rerio	VYDEYNEEX (01) P	- - - - -	FY LX (02) GR V E Y T R C T - N	- - - - -	IE GX (10) QS CR - I	- - - - -	NPE - T - F
gi_291221810_Saccoglossus_kowalevskii	LFDEYVTDX (04) W	- - - - -	FY - X (03) GE I HP V A C S T - E	- - - - -	IQ GX (05) AAC ERR -	- - - - -	DDV - T - G
gi_260795693_Branchiostoma_floridae	LFDEYGLDX (09) H	- - - - -	FY RX (04) - G V R P T G C S T - W	- - - - -	VAG X (08) AP CR - L	- - - - -	DPG - T - G
gi_198417752_Ciona_intestinalis	VFDEIASGX (03) P	- - - - -	FY I - - - -	- - - - -	GT I E A T R C S L - G	- - - - -	IQGX (12) DVCN - Y
gi_291242482_Saccoglossus_kowalevskii	LFDEYTVDX (04) H	- - - - -	FY FX (03) GELHPVACHQ - W	- - - - -	IR GX (02) - PCS - E	- - - - -	RG A - D - G
gi_115964593_Strongylocentrotus_purpuratus	LFKEHYDYGX (05) P	- - - - -	AYDX (03) GG I EG T R C S L - K	- - - - -	IK GX (07) ND CP - N	- - - - -	SPN - E - G
gi_196006922_Trichoplax_adhaerens	LFDEYPYSX (03) F	- - - - -	SY LX (03) GE V Q V T R C NS - Q	- - - - -	LP GX (08) AP CT - Y	- - - - -	- - - - -
gi_321455024_Daphnia_pulex	VFDEEGMPX (07) G	- - - - -	YLT YQTX (04) KIMRPNTCS - L	- - - - -	KT PX (06) EN CQ - S	- - - - -	- - - - -
gi_291398577_Oryctolagus_cuniculus	VFDEYNVDX (01) P	- - - - -	FY SX (03) NT I E A T R C S T - Q	- - - - -	IT GX (15) RP CR - W	- - - - -	DSQ - T - G
gi_149636528_Ornithorhynchus_anatinus	VFDEYDDKX (01) P	- - - - -	FY IX (03) GL PE A T R C S S - E	- - - - -	IQ GX (14) KP CK - I	- - - - -	DRH - T - G
gi_148680070_Mus_musculus	VFDEYNEDX (01) P	- - - - -	FY SX (03) KK I E A T R C S T - G	- - - - -	IT GX (14) RS CR - T	- - - - -	NST - T - K
gi_118094354_Gallus_gallus	VFDEYNNDX (01) P	- - - - -	FY VX (03) AR VE P T R C S A - G	- - - - -	VT GX (14) REC Q - Y	- - - - -	D - - - - G - Q
gi_327270788_Anolis_carolinensis	VFEEYSYDX (01) P	- - - - -	FY SX (03) NK I E A T R C S A - S	- - - - -	IT GX (11) RR CR - I	- - - - -	ERH - T - E
gi_260796397_Branchiostoma_floridae	LFDEYGFDX (08) H	- - - - -	FY VX (04) - G I Q P V R C S A - Y	- - - - -	TAG X (08) SRC Q - V	- - - - -	DPA - S - G
gi_291223817_Saccoglossus_kowalevskii	LFDEYFTSX (07) P	- - - - -	FY LX (03) ER L QGT R C S L - E	- - - - -	IT GX (08) AQ CT - I	- - - - -	NRR - T - G
gi_291223807_Saccoglossus_kowalevskii	VFDEYPTSX (03) T	- - - - -	FY FX (03) GR TE P T R C S E - S	- - - - -	VT GX (09) TK CN - T	- - - - -	DPD - S - G
gi_291222847_Saccoglossus_kowalevskii	LFDEYPTX (03) H	- - - - -	FY LX (02) GK AE P T R C S E - T	- - - - -	IT GX (07) RI CD - L	- - - - -	DTT - DLRS
gi_198421549_Ciona_intestinalis	VYDEYASEX (03) P	- - - - -	FY YX (07) PY ME A T R C PL - A	- - - - -	LG GX (13) EH CT - S	- - - - -	DPN - N - NF
gi_321460553_Daphnia_pulex	IFDEYGTGX (05) L	- - - - -	FFRX (05) - F I E P N I C A N - K	- - - - -	KIM X (10) AACK - I	- - - - -	DPA - T - N
gi_291231970_Saccoglossus_kowalevskii	VYDEYGGX (05) L	- - - - -	FY AX (04) - Q I E A T R C S T - A	- - - - -	VT GX (08) LE CD - V	- - - - -	- V - G - N
gi_321460551_Daphnia_pulex	IFDEYGTGX (05) L	- - - - -	FY RX (05) - L I E P N I C A N - Y	- - - - -	PT MX (10) ASC Q - T	- - - - -	DLA - T - N
gi_260786375_Branchiostoma_floridae	VFDEFATRX (03) L	- - - - -	FY QX (03) GSHSPTLCTT - H	- - - - -	IR AX (07) EE CH - P	- - - - -	GD - - - - -
gi_196007642_Trichoplax_adhaerens	VFDEYAVSX (03) L	- - - - -	GF IX (03) GN I NEN K C T A - Q	- - - - -	IE GX (08) KK CN - Y	- - - - -	- - - - -
gi_196007110_Trichoplax_adhaerens	IYDEESKGX (03) T	- - - - -	YLN X (03) SQ Y E P V K C S S - S	- - - - -	LKV X (07) TK CS - I	- - - - -	NPN - S - GS
gi_115963085_Strongylocentrotus_purpuratus	LFNEYPPDX (08) H	- - - - -	FY QX (05) QR WK P V I C S Q - E	- - - - -	YEV X (14) GT CS - G	- - - - -	NSA - I - G
gi_321460554_Daphnia_pulex	VFDEYGVNX (02) P	- - - - -	LHPX (09) AE I LPT S CTN - EP	- - - - -	LKG X (07) - - - - -	- - - - -	- - - - -
gi_115650848_Strongylocentrotus_purpuratus	VFDEYVVPX (05) P	- - - - -	YY QX (08) GV FEG T R C S S - K	- - - - -	VL GX (07) RQ CR - Q	- - - - -	DPS - - - - G
gi_328707920_Acyrthosiphon_pisum	VFDEYGYAX (07) -	- - - - -	CY AX (03) SPA EVNGCS - D	- - - - -	K - P ISX (02) RACD - S	- - - - -	I - - - - -
gi_270012532_Tribolium_castaneum	VFDEYGYAX (07) C	- - - - -	FY DX (03) KQ AK AT G C S D - L	- - - - -	P ISX (02) GI CT - S	- - - - -	GAS - - - - -
gi_301604098_Xenopus_tropicalis	VFDEYNSDX (01) P	- - - - -	YY IX (03) LT I E A T R C S V - H	- - - - -	VNG X (14) RT CK - Y	- - - - -	DPH - T - N
gi_149636524_Ornithorhynchus_anatinus	VFDEYDMNX (01) P	- - - - -	FY FX (03) KT I E A T R C S I - G	- - - - -	IE GX (14) RL CR - S	- - - - -	DDQ - T - G
gi_118094412_Gallus_gallus	VFDEYDNDX (01) P	- - - - -	FY VX (03) NQ V K V T R C S S - D	- - - - -	LT GX (11) GS CV - I	- - - - -	NKL - T - G
gi_72168566_Strongylocentrotus_purpuratus	LFDEYHTDX (05) K	- - - - -	FY AX (03) GE I V A T R C T D - Q	- - - - -	LNG X (08) AP CQ - R	- - - - -	DRD - T - G
gi_260807874_Branchiostoma_floridae	LFDEYGMDX (08) Y	- - - - -	FY SX (04) - G V Q A T R C S A - H	- - - - -	LT GX (08) RP CQ - I	- - - - -	DPN - T - G
gi_291242943_Saccoglossus_kowalevskii	LFDEYGMGX (05) D	- - - - -	YY IX (03) GT LLPTACMK - D	- - - - -	PVG X (08) KP CR - K	- - - - -	NKK - T - G
gi_291223811_Saccoglossus_kowalevskii	LFDEYATDX (03) H	- - - - -	FY LX (04) - H V E P T R C S R - H	- - - - -	VSG X (08) KR CN - R	- - - - -	KPE - N - GV
gi_291239167_Saccoglossus_kowalevskii	VFDEYPTX (03) H	- - - - -	FY YX (03) GH V QPS R C S E - A	- - - - -	VT GX (09) KE CN - K	- - - - -	DPS - S - GV
gi_260810520_Branchiostoma_floridae	VFDEYSSPX (03) R	- - - - -	FY MX (04) - G I KPT Q C S A - K	- - - - -	IP GX (10) WT CR - M	- - - - -	NHS - S - G
gi_291239807_Saccoglossus_kowalevskii	VYDEYGGX (05) Y	- - - - -	FY AX (04) - D I E A T R C S T - A	- - - - -	VT GX (08) QP CA - F	- - - - -	- V - N - N
gi_260793444_Branchiostoma_floridae	VFDEYGIPIX (05) N	- - - - -	FY FX (03) GR ITVTGCKI - N	- - - - -	TR GX (08) GR CS - M	- - - - -	DSA - T - G
gi_291242484_Saccoglossus_kowalevskii	LFDEYTVDX (04) H	- - - - -	FY FX (03) GELRPVACHP - R	- - - - -	IT GX (02) - PCE - D	- - - - -	RG A - D - E
gi_291229678_Saccoglossus_kowalevskii	VYDEYTPSX (04) Y	- - - - -	FY AX (04) - Q I E A T R C S L - A	- - - - -	VT GX (02) - - - - -	- - - - -	- - - - -
gi_291223815_Saccoglossus_kowalevskii	LFDEYVVDX (04) H	- - - - -	FY LX (03) - ELLPVACHS - L	- - - - -	IS GX (02) - PCS - D	- - - - -	RG A - D - G
gi_196007112_Trichoplax_adhaerens	IYDEESKGX (03) L	- - - - -	YRD X (03) NR FKPIQCS - R	- - - - -	LKV X (07) KT CS - Y	- - - - -	NPV - S - GS
gi_72152222_Strongylocentrotus_purpuratus	LFDEYPSLX (04) N	- - - - -	FY IX (03) GR L QGNKCS - E	- - - - -	IV GX (23) IS CQ - V	- - - - -	PE - G - E
gi_195998007_Trichoplax_adhaerens	VFEEYAMRX (03) L	- - - - -	VY LX (03) GK L QTT R C S A - S	- - - - -	LT GX (08) QI CK - L	- - - - -	- - - - -
gi_198419444_Ciona_intestinalis	VFDEYTTX (03) P	- - - - -	YY YX (04) - TV Q A T R C PS - T	- - - - -	LD GX (12) RD CQ - R	- - - - -	NLE - N - G
gi_198415894_Ciona_intestinalis	VFDEYATRX (03) S	- - - - -	HY VX (04) - VL QGT R C PK - S	- - - - -	LR GX (10) NL CE - V	- - - - -	NRT - T - G
gi_260786377_Branchiostoma_floridae	VFDEYNYEX (01) P	- - - - -	FY VX (03) KN I E A T R C S A - D	- - - - -	II GX (11) - NC I - R	- - - - -	DPQ - T - G
gi_338161004_Xenopus_laervis	VFDEYNYNX (01) P	- - - - -	YY FX (03) RK VE A T R C PL - K	- - - - -	LKG X (14) EP CE - Y	- - - - -	DKN - T - G
gi_301609308_Xenopus_tropicalis	VYDEYPEEX (03) H	- - - - -	FY YX (03) GNV QPT R C S E - A	- - - - -	VT GX (09) KE CN - T	- - - - -	DPS - S - GV
gi_291222148_Saccoglossus_kowalevskii	VFDEYPTHX (03) Y	- - - - -	FY VX (03) GK I E A T R C S L - Q	- - - - -	IK GX (08) KD CD - F	- - - - -	RNI - T - K
gi_291223809_Saccoglossus_kowalevskii	VFDEYGYQX (06) L	- - - - -	FY KX (03) - E I Q V N L C S D - T	- - - - -	PI IX (09) GP CK - I	- - - - -	DPA - T - G
gi_321460550_Daphnia_pulex	VFDEYGYQX (06) L	- - - - -	FY KX (03) - E I Q V N L C S D - T	- - - - -	PI IX (09) GP CK - I	- - - - -	DPA - T - G
gi_321478616_Daphnia_pulex	VFDEYGYQX (06) L	- - - - -	FY KX (03) - E I Q V N L C S D - T	- - - - -	PI IX (09) GP CK - I	- - - - -	DPA - T - G
gi_241581081_Ixodes_scapularis	VFDEYGAAX (04) -	- - - - -	NL LX (02) DQ V RANACS - V	- - - - -	MR FX (07) EP CR - V	- - - - -	YRG - C - KV
gi_291224467_Saccoglossus_kowalevskii	VYDEYGGX (05) Y	- - - - -	FY SX (04) - D I E A T R C S T - A	- - - - -	VT GX (08) ADC V - Y	- - - - -	I - N - N
gi_321467441_Daphnia_pulex	VFEEHGFXX (07) -	- - - - -	FY RX (05) - DV VSS NDT - E	- - - - -	IK GX (08) - DCE - V	- - - - -	DEF - G - I
gi_198424353_Ciona_intestinalis	TFDEKARAX (04) K	- - - - -	FY LX (03) RS V KPT I C S S - V	- - - - -	IP GX (09) SP CN -	- - - - -	EK - Q - RL
gi_198419582_Ciona_intestinalis	VFDEYATGX (03) R	- - - - -	HY IX (04) - I L Q A T R C PL - S	- - - - -	LR GX (10) TR CA - V	- - - - -	NRS - S - L
gi_312373778_Anopheles_darlingi	VFDEIGYDX (07) -	- - - - -	CY IX (03) HK V KLT G C S D - A	- - - - -	PV NX (02) GL CG - S	- - - - -	PSS - P - V
gi_242023388_Pediculus_humanus_corporis	IYDEIGYDX (07) -	- - - - -	CFHX (03) EK P QVT G C S D - K	- - - - -	PI NX (01) - VCS - T	- - - - -	GDL - I - -
gi_115749084_Strongylocentrotus_purpuratus	VFDEYVVPX (05) P	- - - - -	YY QX (06) DG FEG T R C S S - E	- - - - -	VHG X (07) SP CG - Q	- - - - -	NTF - - - G
gi_241672368_Ixodes_scapularis	VFNEAGYPX (05) P	- - - - -	AY TX (04) - SSDPTD -	- - - - -	- - - - -	- - - - -	- - - - -
gi_313226492_Oikopleura_dioica	VFDSLQQX (01) -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
gi_241998382_Ixodes_scapularis	VFPEHASTX (04) -	- - - - -	VY CX (03) KRLT -	- - - - -	- - - - -	- - - - -	- - - - -
gi_321462270_Daphnia_pulex	VFDEYGFEX (05) P	- - - - -	LWTX (01) -	- - - - -	- - - - -	- - - - -	- - - - -
gi_320352592_Desulfohalobium_propionicum_DSM_2032	VRDEYESRX (05) -	NT - - - - -	- - - - -	- - - - -	GN - - AD CPD - A	- - - - -	AAGX (09) - QSE - FCWGGN PANLT - DL
gi_159898230_Herpetosiphon_aurantiacus_DSM_785	LHDGYAPDX (07) YC - SS -	- - - - -	X (02) NDLSAELSHD - R	- - - - -	LSHX (08) SASK - L	- - - - -	RG N - A - -
gi_260426558_Citreicella_sp._SE45	LGEQYDEQX (07) - GI -	- - - - -	- - - - -	- - - - -	GP - - GFDAG - S	- - - - -	IDEX (09) - GRI - QCV -
gi_149919617_Plesiocystis_pacifica_SIR1	LKDQYFDQX (06) - GI -	- - - - -	- - - - -	- - - - -	GH - - - - -	- - - - -	- - - - -
gi_114046070_Sewanella_sp._MR7	VYDEYKGNX (07) A - T -	- - - - -	X (02) TD - - - - -	- - - - -	VATDSI - MS - X (42) QDVK - D	- - - - -	DPK - S - GR
gi_148657095_Roseiflexus_sp._RS1	LYDEYRNDX (07) ND - PGAP -	- - - - -	X (02) DD I - - - -	- - - - -	PVSPSV - MH - X (40) RRPE - L	- - - - -	DPR - D - GV
gi_312879450_Aminomonas_paucivorans_DSM_12260	LYDEYVATX (06) SW - P -	- - - - -	X (02) SDVS - - - -	- - - - -	PSGAAI - MN - X (43) QAPS - Q	- - - - -	DGV - S - GD
gi_114321541_Akalimnicola_ehrlichii_MLHE1	LYDEYEGRX (07) TF - P -	- - - - -	X (02) GDV - - - -	- - - - -	PTSPA I - MN - X (42) QPTT - D	- - - - -	DPQ - E - GN
gi_57642113_Thermococcus_kodakarensis_KOD1	LYDEYLDVX (07) IKD -	- - - - -	- - - - -	- - - - -	YKMNALKMWFGE - VPPX (08) RYSE - LS	- - - - -	WPQ - - - DY
gi_254173443_Thermococcus_sp._AM4	LGDEYMDWX (07) Y -	- - - - -	- - - - -	- - - - -	DLFDPNKL - I -	- - - - -	- - - - -
gi_254172615_Thermococcus_sp._AM4	LGDEYMDWX (07) WYY -	- - - - -	- - - - -	- - - - -	GTLEAAATDSTI - IAGX (31) KWSE - LS	- - - - -	TPR - - - DY
gi_163848422_Chloroflexus_aurantiacus_J10f1	LSDNYIGFX (03) - D - GRRV -	- - - - -	- - - - -	- - - - -	LVGVESCPG - A - MN - X (05) - QSE - F	- - - - -	HPL - A - G
gi_240103523_Thermococcus_gammatolerans_EJ3	FWDEYQDWX (07) WYTTQMALY YX (03) SAFDISRI LSDK - LL - X (10) KWSE - LS	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	TPG - - - DY
gi_309791403_Oscillochloris_trichoides_DG6	LDDNYIGRX (02) - S - GTM -	- - - - -	- - - - -	- - - - -	ISISTCPG - A - MS - X (05) - YSE - F	- - - - -	HPR - T - A
gi_309791671_Oscillochloris_trichoides_DG6	LDDHYVGRX (03) - - - - -	ALQ - - - - -	- - - - -	- - - - -	AVEYDACP - I - MH - X (04) - STE - L	- - - - -	HPS - A - DW
gi_309790879_Oscillochloris_trichoides_DG6	LDEYLGKX (04) - D - GSL -	- - - - -	- - - - -	- - - - -	LVPTTGCS - A - MY - X (06) - SSE - F	- - - - -	RPS - S - D
gi_159898060_Herpetosiphon_aurantiacus_DSM_785	LRDQYINSX (07) - - - - -	- - - - -	LALX (03) - NPTAESIMA - H	- - - - -	LVGX (14) QPFR - A	- - - - -	QTG - A - G

	280	290	300	310	320	330	340		
gi_110611231_Homo_sapiens_I25-K262	LY-EKG	CEFLVX (03)	QTEK-ASIMF	A-Q-HV	DS-IV	EFCX (03)	NHNKEAPNK		
gi_5729769_Homo_sapiens_V33-A262	LF-KEG	CTFIYX (03)	QNAT-ASIMF	M-Q-SL	SS-VV	EFCX (03)	THNQ-E-A		
gi_74721541_Homo_sapiens_V24-L262	LY-EAK	CTFIPX (03)	QTAK-ESIVF	M-Q-NL	DS-VT	EFCX (03)	THNKEAPNL		
gi_205831469_Homo_sapiens_I24-L262	LY-GKD	CQFFPX (03)	QTEK-ASIMF	M-Q-SI	DS-VV	EFCX (03)	THNQEAPS		
gi_157818579_Rattus_norvegicus	LY-KDN	CVFIPX (03)	QREK-ASIMF	N-Q-NI	NS-VV	EFCX (03)	NHNKEA-P		
gi_126306129_Monodelphis_domestica	KL-NKG	CKFIPX (03)	QTEK-ASIMF	M-Q-SI	NS-VV	EFCX (03)	NHNKDA-P		
gi_301609304_Xenopus_tropicalis	LY-EDD	CVFVPX (03)	QSVK-ESIMY	L-Q-AL	PS-VS	EFCX (02)	KHNTEA-P		
gi_327270784_Anolis_carolinensis	LY-EVG	CQFIPX (03)	QTVP-ASIMY	M-Q-SL	PS-VI	RFCX (03)	NHN-IN-A		
gi_301768028_Ailuropoda_melanoleuca	LF-KEG	CMFIYX (03)	QNAT-ASIMF	M-Q-SL	SS-VV	EFCX (03)	THNQEA-P		
gi_198415896_Ciona_intestinalis	LPASDT	CHFI PX (05)	RGLK-TSMMF	Y-S-YL	SS-VI	EFCX (09)	QHNT-E-A		
gi_326674112_Danio_rerio	LP-SSD	CKFFPX (03)	QNTD-SSVMF	S-P-SL	EA-VT	TFCX (03)	EHNY-E-A		
gi_291221810_Saccoglossus_kowalevskii	LP-PPE	CKFIPX (05)	QQVT-ASIMY	A-Q-WI	NT-IA	SFCX (02)	NSSE-P		
gi_260795693_Branchiostoma_floridae	VY-ESE	CRFY PX (04)	NRAT-GSYM F	M-Q-FL	SQ-VT	SFCX (10)	YHNREA-P		
gi_198417752_Ciona_intestinalis	LPNSTD	CKFILX (05)	LDLK-ASIMS	Y-Q-YV	NE-IN	GFCX (09)	RHNREA-P		
gi_291242482_Saccoglossus_kowalevskii	LP-LPD	CVFHPX (07)	LPIK-SSIMF	A-Q-WI	HG-VE	EFCX (09)	FHNREA-P		
gi_115964593_Strongylocentrotus_purpuratus	Y-DRD	CRFVPX (04)	QTAN-ASLLF	GTRDA	HI-HS	IE-KFCX (09)	LHNPLA-P		
gi_196006922_Trichoplax_adhaerens	PY-TAD	CVFLPX (03)	SVPS-GSIMY	D-H-NI	PS-VL	HFCX (09)	YH-NTL-P		
gi_321455024_Daphnia_pulex	A-DST	CEFVAX (04)	PDIR-SSLMY	R-P-DL	DH-ME	KFCX (03)	NHDDSV-P		
gi_291398577_Oryctolagus_cuniculus	LY-EAK	CTFIPX (03)	QLAK-ESIMF	M-Q-NL	DS-VT	EFCX (03)	THNTEA-P		
gi_149636528_Ornithorhynchus_anatinus	LL-EKH	CTFIPX (03)	QTVT-SSLMY	M-Q-SF	ES-VV	EFCX (03)	NHNAEA-P		
gi_148680070_Mus_musculus	LY-EKD	CQFFPX (03)	QSEK-ASIMF	M-E-SI	DS-VT	EFCX (03)	NHNREA-P		
gi_118094354_Gallus_gallus	LY-EAG	CVFVPX (03)	QNSK-NSIMY	M-Q-SL	PS-VV	EFCX (03)	THNSEA-P		
gi_327270788_Anolis_carolinensis	LY-EPG	CLFIPX (03)	QTSI-ASIMF	M-Q-SL	SS-VS	QFCX (03)	NHNLMA-P		
gi_260796397_Branchiostoma_floridae	LP-EAD	CRFIPX (04)	NRAT-GSYM F	M-Q-FL	PQ-VE	EFCX (17)	SHNREA-P		
gi_291223817_Saccoglossus_kowalevskii	LP-EEE	CLFFPX (04)	QKAT-ASVMF	A-Q-YL	DP-VT	SWCX (09)	LHNREA-P		
gi_291223807_Saccoglossus_kowalevskii	LP-EPT	CLFY PX (04)	NPAK-ASYLY	A-Q-YL	EG-VV	DFCX (10)	RHN-QI-A		
gi_291222847_Saccoglossus_kowalevskii	LD-KRE	CRFY PX (03)	NTGT-GSYLY	V-T-YV	DS-VT	DFCX (10)	RHNSFA-P		
gi_198421549_Ciona_intestinalis	LP-LEG	CLFFPX (07)	DDLS-ASLLS	H-Q-FV	DQ-VV	DFCX (09)	LHNKEA-P		
gi_321460553_Daphnia_pulex	IY-DQN	CRFEFX (03)	FKPD-TSLAS	Y-H-LL	DS-VV	HFCX (06)	SHRSET-P		
gi_291231970_Saccoglossus_kowalevskii	LP-EPD	CRFYDX (04)	RSYT-GSLMY	R-Q-YL	PN-IV	HFCX (11)	IHNQA-P		
gi_321460551_Daphnia_pulex	LY-DDN	CRFQLX (03)	FLPE-TSLAS	Y-H-QI	KS-VV	HFCX (03)	QA-H		
gi_260786375_Branchiostoma_floridae	ER-TRV	CHYEFX (03)	TSAQ-ASVMF	H-P-EL	PT-VT	DFCX (08)	YH-NFH-A		
gi_196007642_Trichoplax_adhaerens	PY-GSN	CVYSVX (03)	KGSK-GSIMF	D-Q-NI	DS-VN	TFCX (03)	NSN-P		
gi_196007110_Trichoplax_adhaerens	V-HFL	CRPRVX (03)	PIAA-GSIMY	E-Y-RM	DG-LE	HFCX (12)	RHNSLP-P		
gi_115963085_Strongylocentrotus_purpuratus	Y-ETG	CI VRIX (03)	DQAS-GSIMN	G-PLTY	SN-IV	NFCX (09)	LHNREA-P		
gi_321460554_Daphnia_pulex		QNSX (03)	GNIT-SSIMF	N-T-DL	PS-IN	RLCX (03)	NHLKAP-P		
gi_115650848_Strongylocentrotus_purpuratus	L-PDS	CRFVPX (04)	QTAR-ASLMF	A-S-NI	H-		S		
gi_328707920_Acyrtosiphon_pisum		NTTAX (03)	PEAK-TSLMF	S-T-A	SQ-VT	KFCX (03)	SHDRYA-P		
gi_270012532_Tribolium_castaneum	V-AY	NTSKX (03)	EKAR-SSIMF	A-A-EA	PQ-VS	MFCX (03)	NHDRYA-P		
gi_301604098_Xenopus_tropicalis	LF-EKG	CQFFPX (03)	QLTR-ESIMH	M-Q-AL	PS-VS	EFCX (03)	NHNEA-P		
gi_149636524_Ornithorhynchus_anatinus	LY-EAK	CVFIPX (03)	QEEK-SSLMF	M-Q-SL	DS-VT		K		
gi_118094412_Gallus_gallus	LF-KEG	CAFI PX (03)	QTAV-SSIMY	M-Q-SL	SS-VA	EFCX (03)	NHNREA-P		
gi_72168566_Strongylocentrotus_purpuratus	LY-EDD	CFYFPX (04)	QTSP-GSIMY	A-Q-FL	DS-VT	GFCX (07)	YHNREA-P		
gi_260807874_Branchiostoma_floridae	LP-EPA	CRFAPX (05)	NPAT-GSYM F	M-Q-FL	EK-VA	SFCX (10)	LHNHEA-P		
gi_291242943_Saccoglossus_kowalevskii	LY-GKD	CVFY PX (04)	NTMP-ASIMF	M-Q-FL	ES-VD	KYCX (03)	THNREA-P		
gi_291223811_Saccoglossus_kowalevskii	LP-NKW	CRFY PX (06)	QNAT-GSYM H	M-N-FL	DT-VT	EFCX (10)	LHNSMA-P		
gi_291239167_Saccoglossus_kowalevskii	LP-DSG	CRFY PX (04)	NEAT-GSYM Y	A-N-YL	DS-VF	TYCX (10)	RHN-RL-A		
gi_260810520_Branchiostoma_floridae	IY-EET	CHFN VX (04)	NEAT-GSYM C	Y-Q-YL	AE-VT	DFCX (10)	YHNREA-P		
gi_291239807_Saccoglossus_kowalevskii	YP-EDD	CYFYDX (04)	ATFT-GSLMY	R-Q-YL	P-		Q		
gi_260793444_Branchiostoma_floridae	LP-DSE	CQFFPX (05)	GSGH-GSVMY	M-Q-FL	DA-VD	HFCX (07)	AHNADA-P		
gi_291242484_Saccoglossus_kowalevskii	LP-LPD	CVFHPX (07)	LPIK-SSIMF	A-Q-WI	DA-VE	EFCX (09)	YHNREA-P		
gi_291229678_Saccoglossus_kowalevskii					VV-DF		C		
gi_291223815_Saccoglossus_kowalevskii	LP-LPE	CI FRA X (06)	DWIK-SSIMF	A-Q-WI	KS-VE	EFCX (09)	KH-N-R		
gi_196007112_Trichoplax_adhaerens	GL-KVG	CRIVVX (03)	SLAA-GSIMY	E-Y-RV	DG-IE	HFCX (01)	D		
gi_72152222_Strongylocentrotus_purpuratus	LP-PHQ	CRFRPX (05)	QTAT-GSIMY	S-T-HI	PS-IR	SFCX (10)	LHSSEA-P		
gi_195998007_Trichoplax_adhaerens	YP-SDQ	CKFSAX (03)	SMAT-ASIML	D-P-HL	NG-IS	EFCX (09)	LHNR-Q-A		
gi_198419444_Ciona_intestinalis	LM-EDG	CLFLPX (05)	ADLT-TSLMS	H-Q-YL	SQ-VT	MFCX (09)	HHNREA-P		
gi_198415894_Ciona_intestinalis	LPQTD	CAFYVX (05)	PELN-TSMMS	H-S-YV	QQ-VV	EFCX (09)	QHNT-E-A		
gi_260786377_Branchiostoma_floridae							V		
gi_338161004_Xenopus_laervis	LY-EDG	CVFVPX (03)	QAAK-SSIMY	S-Q-AL	PS-VT	EFCX (02)	NHNTEA-P		
gi_301609308_Xenopus_tropicalis	LY-EED	CKFY PX (03)	ILVE-ESVMY	A-Q-MF	EP-VH	AFCX (03)	SHNSEA-P		
gi_291222148_Saccoglossus_kowalevskii	MP-STG	CRFFPX (04)	NEAT-ASYMY	A-N-YL	DS-VV	TFCX (10)	KHN-RL-A		
gi_291223809_Saccoglossus_kowalevskii	LQ-KAD	CHFI PX (04)	ASDS-ASLMY	M-Q-FL	PT-IT	GFCX (10)	YHNREA-P		
gi_321460550_Daphnia_pulex	VY-DNN	CAYQLX (03)	FLPD-SSLMS	V-H-SL	DS-VV	DFCX (06)	SHVFA-P		
gi_321478616_Daphnia_pulex	LY-DTN	CTYSFX (03)	FKPE-SSIMS	DY-R-ML	PS-AM	HFCX (08)	KHNRQA-P		
gi_241581081_Ixodes_scapularis	ST-KCN	AKFYQX (03)	DPVE-SSIMF	M-P-YI	AG-VS	QFCX (05)	KHNI FA-P		
gi_291224467_Saccoglossus_kowalevskii	YP-EDD	CRFYDX (01)	GSFT-GSLMY	R-Q-YL	SQ-LI	HFCX (11)	IHNVES-P		
gi_321467441_Daphnia_pulex	ISNQQE	CRFI PX (04)	QTAT-TSLMS	F-H-WL	DS-VI	SFSX (03)	KHDKPP-P		
gi_198424353_Ciona_intestinalis	F-DNS	CVFVPX (05)	EKTY-ASLLY	R-A-DL	PY-VN	DFCX (10)	KHDEEA-P		
gi_198419582_Ciona_intestinalis	LP LTEN	CYFFPX (05)	RGLN-SSMMS	F-S-YL	HS-VE	AFCX (09)	FHNS-E-A		
gi_312373778_Anopheles_darlingi	PV-PY	NISR X (03)	ANAR-TSIMF	A-A-EA	KS-VT	MFCX (03)	THNRYA-P		
gi_242023388_Pediculus_humanus_corporis	G-SY	NTSR X (03)	PDAT-KSILF	A-A-T	SK-VN	KFCX (03)	THDAFA-P		
gi_115749084_Strongylocentrotus_purpuratus	L-PDS	CRFVTX (06)	QTAK-ASLMF	A-S-NI	HS-ID	MFCX (08)	YHNREA-P		
gi_241672368_Ixodes_scapularis					V-V	X (01)	TCTDT-P		
gi_313226492_Oikopleura_dioica		C					KKFKE-E		
gi_241998382_Ixodes_scapularis						X (03)	STVSSR-P		
gi_321462270_Daphnia_pulex							QYGS-H		
gi_320352592_Desulfohalobium_propionicum_DSM_2032	T-GG	NHD-ATN	-X (07)	R-NN	R-S-CWX (08)	NT-IL	AP-X (04)	DPAAHG-A	
gi_159898230_Herpetosiphon_aurantiacum_DSM_785	AQ-HYH	CDN	-TP	QTLMY-AM	D-DWX (03)	QT-LY	GLVX (05)	SVMAHN-G	
gi_260426558_Citreicella_sp._SE45	G-GG	N-D-G	-X (03)	L-RG	S-D		X (03)	GSQFV-L	
gi_149919617_Plesiocystis_pacifica_SIR1						G	VD-DV	X (03)	HNSIL-Q
gi_114046070_Shewanella_sp._MR7	K-TA	QPTR	RYTTX (03)	NAPD-ASNPV	K-T-EL	PA-AQ	SSCX (06)	VWVEGD-I	
gi_148657095_Roseiflexus_sp._RS1	L-AY	YPRRL	YHPX (03)	NVAP-ASGQ	L-P-RI	DL-ITG	H-X (03)	SMLQII-W	
gi_312879450_Aminomonas_paucivorans_DSM_12260	T-TV	KPSRV	QYSFX (03)	V-TTS	G-D-YL	NA-VT	PGTHLAX (04)	NLKI LW-L	
gi_114321541_Alkalilimnicola_ehrlichii_MLHE1	E-TV	QPDR	TRYTAX (03)	VAPTAADNWV	V-T-QL	DQ-MD	HGCX (06)	VWMDD-L	
gi_57642113_Thermococcus_kodakarensis_KOD1	ARF	NST	LTEMFX (13)	-VS	R-S-CWX (24)	PSI	-X (03)	MPFSSM-Y	
gi_254173443_Thermococcus_sp._AM4	F-RSD	AWWFYX (02)	NVPP-Y SVMN	N-A-HRX (14)	NKKE	RFKX (03)	EHMTDQ-W		
gi_254172615_Thermococcus_sp._AM4	EKF	KKD	ASELWX (29)	STTD-YGIWH	C-S-AW	EA-VY	SF-X (02)	DHNTPT-W	
gi_163848422_Chloroflexus_aurantiacus_J10f1	-W	TTN	CQTLX (03)	E-NG	R-A-DWX (24)	NTLPA	Q-X (03)	VIEMPL-A	
gi_240103523_Thermococcus_gammatolerans_EJ3	SSF	KED	AIYIWX (24)	NLTH-KDKWH	C-S-SW	EA-LF	KF-X (02)	GYDRPE-W	
gi_309791403_Oscillochloris_trichoides_DG6	AW	DAN	CSRTFX (03)	E-LQ			-X (03)	WETIKR-F	
gi_309791671_Oscillochloris_trichoides_DG6	LGG	DPN	CAVTLX (03)	V-TG	G-S-DW		-X (03)	HYPALN-A	
gi_309790879_Oscillochloris_trichoides_DG6	-W	SSA	CQTLX (03)	G-SG		MS	E-X (01)	GSITHF-Y	
gi_159898060_Herpetosiphon_aurantiacum_DSM_785	LPYSA	MATAPX (04)	RVGP-ERL	P-L-PL	PL-FQH	SFGX (07)	INLPIA-E		