ĺ		. Have a section of	20 	I	4(50 	60 	70 	8 	1
		Pongo abelii Pan troglodytes Macaca mulatta	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	KTENSKLRI KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE. TKEKIQE.	AKDVYKEHFQ AKDIYKEHFQ AKEVYKEHFQ
		Callithrix jacchus Propithecus coquereli	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKVRI KTENSKLRI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVI [.] KYLKGKVV	TKEKIQE. TKEKIQE.	AKEVYKEHFQ AKEVYKAHFQ
		Otolemur garnettii Microcebus murinus Nannospalax galili	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTX	YFECREKI YFECREKI YFECHEKI	KTENSKLRI KTENSKLRI KTENSKVRI	KVKYEETVI KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE. TKEKIQE.	AKEVYREHFQ AKEVYKEHFQ AKEVYKEHFQ
		Chinchilla lanigera Fukomys damarensis	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKVRI KTENSKVRI	<pre><vkyeetvi <vkyeetvi<="" pre=""></vkyeetvi></pre>	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE.	AKEVYREHFQ AKEVYKEHFQ
		Octodon degus Cavia porcellus Rattus norvegicus	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	KIENSKVRI KTENSKVRI KTENSKVRI	KVKYEETVI KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE. TKEKIQE.	AKEVYKEHFQ AKEVYKEHFQ AKEVYREHFQ
		Peromyscus maniculatus bairdii Cricetulus griseus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKVRI KTENSKVRI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE.	AKEVYKEHFQ AKEVYKEHFQ
		Marmota marmota Oryctolagus cuniculus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKVRI KTENSKVRI	KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE.	AKEVYKEHFQ AKEVYREHFQ
		Bubalus bubalis Ovis aries musimon Bos taurus	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	KTENSKIRI KTENSKIRI KTENSKIRI	KVKYEETVI KVKYEETVI KVKYEETVI	FYGLQYILHI FYGLQYILHI FYGLQYILHI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE. TKEKIQE.	AKEVYREHFQ AKEVYREHFQ AKEVYREHFQ
	Mammalia	Camelus ferus Sus scrofa	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKIRI KTENSKIRI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE.	AKEVYREHFQ AKEVYKEHFQ
		Equus przewalskii Loxodonta africana	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKIRI KTENAKGRI	KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLRGKVV ⁻	TREKIQE. TEEKIQE.	AKEVYREHFQ AKEVYKEHFQ
		Orcinus orca Leptonychotes weddellii	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKIRI KTENSKIKI	<pre><vkyeetvi <vkyeetvi<="" pre=""></vkyeetvi></pre>	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE.	AKEVYKEHFQ AKEVYREHFQ
		Acinonyx jubatus Felis catus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKIKI KTENSKIKI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE.	AKEVYREHFQ AKEVYREHFQ
		Ailuropoda melanoleuca Myotis lucifugus Eptesicus fuscus	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	KTENSKIKI KTENSKIRI KTENSKIRI	KVKYEETVI KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE. TKEKIQE.	AKEVYREHFQ AKEVYKEHFQ AKEVYKEHFQ
		Echinops telfairi Condylura cristata	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKVRI KTENSKIRI	KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE.	AKEVYKEHFQ AKEVYKEHFQ
		Erinaceus europaeus Orycteropus afer afer Galeopterus variegatus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KIENSKIRI KTENSKVRI	KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI	KYLKGKVV [.] KYLKGKVV	TKEKIQE. TKEKIQE.	AKEVYKEHFQ AKEVYREHFQ
		Chrysochloris asiatica Trichechus manatus latirostris	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKVRI KTENAKVRI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE.	AKEVYKEHFQ AKEVYKEHFQ
		Dasypus novemcinctus Ornithorhynchus anatinus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KIENSKVRI KTENSKVRI	KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE.	AKEVYKEHFQ AKEVYKEHFQ
		Apteryx australis mantelli Calidris pugnax	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ
		Buceros rhinoceros silvestris Tauraco erythrolophus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ
		Tinamus guttatus Leptosomus discolor Merops nubicus	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	KTENSKLRI KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ AKEVYREHFQ
tomia		Apaloderma vittatum Cuculus canorus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ
Deuterostomi		Pterocles gutturalis Cathartes aura Gavia stellata	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	KTENSKLRI KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ AKEVYREHFQ
۵		Opisthocomus hoazin Melopsittacus undulatus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KOYPPNTSKVYS	YFECREKI YFECREKI	KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ
	Aves	Amazona aestiva Pygoscelis adeliae	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ
		Nipponia nippon Phaethon lepturus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ
		Phalacrocorax carbo Manacus vitellinus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ
		Taeniopygia guttata Acanthisitta chloris Geospiza fortis	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	KTENSKLKI KTENSKLRI KTENSKLKI	KVKYEETVI KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ AKEVYREHFQ
		Sturnus vulgaris Pseudopodoces humilis	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKLKI KTENSKLKI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ
		Coturnix japonica Meleagris gallopavo Gallus gallus	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	KTENSKLRI KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIKE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ AKEVYREHFQ
		Haliaeetus albicilla Falco peregrinus	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIRE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ
	l, I	Calypte anna Chaetura pelagica Anser cygnoides domesticus	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	KTENSKLRI KTENSKLRI KTENSKLRI	KVKYEETVI KVKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILNI FYGLQYILNI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TKEKIKE. TKEKIEE. TKEKIKE.	AKEVYREHFQ AKEVYREHFQ AKEVYREHFQ
	5	Pelodiscus sinensis Chrysemys picta bellii	VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS LQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI	KTENSKLKI KTENSRLKI	KVKYEETVI KVKYEETVI	YGLQYILNI YGLQYILNI	KYLKGKVI [.] KYLKGKVI	TKEKIQE. TKEKIQE.	AKEVYREHFQ AKEVYREHFQ
	Reptilia	Python bivittatus Gekko japonicus Protobothrops mucrosquamatus	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	KTENSKLRI KTDNSKLKI KTENSKLRI	KVKYEETVI KMKYEETVI KVKYEETVI	FYGLQYILNI FYGLQYILHI FYGLQYILNI	KYLQGKVV ⁻ KYLKGKVV ⁻ KYLQGKVV ⁻	TKEKIQV. TKEKIQE. TKEKIQI.	AKEVYKEHFQ AKEVYKEHFQ AKAVYKEHFQ
	Amphibia 	Xenopus laevis Latimeria chalumnae	VTHY VTHY	KQYPPNTSKVYS' KQYPPNTSRVYS' KQYPPNTSKVYS'	YFECREKI YFECREKI	KTENSRIRI RTEDSRTRI	KVKYEETVI KVKYEKTVI	FYGLQYTLKI FYGLQYILNI	KYLEGKVV ⁻ KYLKGKVV ⁻	TKEKIQE. TKEKIQE.	AKEVYREHFQ AKEVYREHFQ
		Cynoglossus semilaevis Stegastes partitus Scleropages formosus	VTHY VTHY VTHY	KQYPPNTTKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	RTDPGKNRI RTDPTKSRI KTDSTKDRI	KVKYDKTVI KVKYDKTVI KVKYEKTVI	FYGLQYILHI FYGLQYILHI FYGLQYILHI	KYLKGKVV: KYLKGKVV ⁻ KYLKGKVV ⁻	SPEKIQE. TPEKIQE. TPEKIQE.	AKEVYREHFQ AKEVYREHFQ AKEVYREHFQ
		Tetraodon nigroviridis Takifugu rubripes Maylandia zebra	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	RTDPSKSRI KTDPSKSHI RTDPSKNRI	KVTYDKTVI KVKYDKTVI KVKYDKTVI	FYGLQYILHI FYGLQYILHI FYGLQYILHI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TPEKIQE. TPEKIQE. TPEKIQE.	AKDVYREHFQ AKNVYREHFQ AKEVYREHFQ
		Oreochromis niloticus Oryzias latipes Larimichthys crocea	VTHY VTHY ITHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNVSKIYS	YFECREKI YFECREKI YFECRHKI	RTDPSKNRI RTDPTKTRI KGSQ	KVKYDKTVI KVKYDQTVI LNEVVI	FYGLQYILHI FYGLQYILHI FFGLQYLLKI	KYLKGKVV ⁻ KYLKGKVV ⁻ KYLAGPVI ⁻	TPEKIQE. TPEKIQE. TEEKIQE.	AKEVYREHFQ AKEVYKEHFQ AKLFYQMHFK
	Fish	Dicentrarchus labrax Carassius gibelio Cyprinus carpio	ITHY VTHY ITHY	KQYPPNVSKIYS KQYPPNASKVYS KQYPPNVSKVYS	YFECRRKI YFECRETI YFECRRKI	KGSQ KTEPTKLRI KGAQ	FSEVVI KVKYDKTVI FNEVVI	FFGLQYLLKI FYGLQYILQI FFGLQYLLKI	KYLTGPVI [.] RYLKGQVV [.] KYLAGPVV	TEEKIQE. TKGKIQE. TEEKIQQ.	AKLFYQMHFK AKEVYREHFQ AKVFYQMHFK
		Austrofundulus limnaeus Xiphophorus maculatus Nothobranchius furzeri	ITHR ITHY VTHY	KQYPPNINKVYS SQYPPNIDKLYS KQYPPNVSKIYS KQYPPNTSKMYS	YFECRRKI YFECRQKI YFECREKI	KGSQ KGSQ RTDSTKSRI	FSEVVI FNEVVI KVKYDQTVI	FFGLQYLLKI FFGLQYLLKI FYGLQYILHI	KYLTGPVV ⁻ KYLTGPVV ⁻ KYLKGKVV ⁻	TEEKIQE. TEDKIQE. TPEKIQE.	AKLFFQMHFK AKLFYQMHFK AKEVYREHFQ
		Cyprinodon variegatus Poecilia reticulata Fundulus heteroclitus	VTHY VTHY VTHY	KQYPPNTSKVYS KQYPPNTSKVYS KQYPPNTSKVYS	YFECREKI YFECREKI YFECREKI	RTDPSKSRI RTDPSKSRI RTDPGKSRI	KVKYDQTVI KVKYDKTVI KVKYDKTVI	FYGLQYILHI FYGLQYILHI FYGLQYILHI	KYLKGTVV ⁻ KYLKGKVV ⁻ KYLKGKVV ⁻	TREKIQE. TPEKIQE. TPEKIQE.	AKEVYREHFQ AKEVYREHFQ AKEVYREHFQ
		Oncorhynchus mykiss Esox lucius Clupea harengus	ITHY ITHY VTHY	KQYPPNVNKVYS KQYPPNVSKVYS KQYPPNVNKVYS KQYPPNVSKVYS	YFECRRKI YFECRRKI YFECRRRI	RGGTQ KGGTQ KDAQ	FSEIVF LNEVVF FHEVVF	FGLQYLLKI FGLQYLLKI FGLQYLLKI	KYLSGRVI [.] KYLSGRVI [.] KYLAGRVI [.]	TEEKIQE. TEEKIQE. TEEKIQE.	AKVFYQMHFR AKIFYQMHFK AKLFFQMHFR
		Lepisosteus oculatus Branchiostoma floridae Saccoglossus kowalevskii	ITHY VTHH VTHY	KQYPPDVDKVYS MQYPPETTTIFS RQYPPGTTTVYS	YFECRRKI YFESRGGI YFECRGGI	KGDR K K	FNEVVI FKETVI FPEIVI	FFGLQYLLKI FFGLQYLIKI FFGLQYVIKI	KYLSGPVV [.] RWLVGQVV [.] KWLIGQVV	TEEKIQQ. TREKIAE. TKEKIEE.	AKQMYQQHFK AKDIYKKHFG AKEFYKLHFG
		Strongylocentrotus purpuratus Lingula anatina	VTHH VTHH	LQYPPKTSYCYS' RQYPDGTTLVSS' KQYPPNTTVIYS' LQYPPGTTTVYS'	YFESRGGI YFESRGGI	K K	FPEVVI FPETVI	FGLQYILKI FGLQYIIKI	RWLCGPVI [.] RWLLGPVV [.]	TAEKIAE. TQEKIEE.	AKELYKLHFG AKAVYQAHFG
	Mollusca	Octopus bimaculoides Crassostrea gigas Lottia gigantea	ISHH VTHH VTHH	LQYPDGITNVYS LQYPANTTAVYS RQYPPNTTKVYS	YFESRGGI YFESRGGI YFESRGGI	K K K	FPQTLF FANTVF FPNVCF	FFGLQYILKI FFGLQYIIKI FFGLQYIIKI	RWLCGQVV [.] KWLTGQVI [.] RWLIGPVI [.]	TQEKIAE. TKEKIQE. TKDKIKE.	AKEICQLHFG AKELYKLHFG AKELYKLHFG
nia	Annelida	Aplysia californica Capitella teleta	VTHH VTHH	LQYPPNTTTICS' RQYPPNTSIVYS' LQYPPNTTHVYS' KQYPADTTYAYS'	YFESRGGI YFESRGGI	K K	FPATCF FPSTIF	FGLQYILKI FGLQYIIKI	RWLVGQVV ⁻ RWLLGQVV ⁻	TREKIEE. TDEKIEE.	AREIFQLHFG ATAVYQMHFG
rotostomia	1	Trichuris suis Trichinella murrelli Ancylostoma ceylanicum	VTHY VTHY ITHH	NQYPPLTTSVYS NQYPPQTTKIYS NQYPQGTTYVYS	YFECRGGI YFECRGGI YFESRGGI	K K K	FEQVCF FEDVCF FPEVCF	FFGLQYVLKI FFGLQYVLKI FFGLQYILKI	RWMVGRVV RWMVGCVVI RWLVGVVV	THAMIDE. NHQMIDE. THKMIDE.	AKEFYMQHFG AKEFYKKHFT AKEFYKLHFN
Pr	Nematoda	Strongyloides ratti Loa loa	ATHH.	NQYPEGTTHVYS AQYPDNTTSIYS NQYPEGTTHVYS NQYPEGTTHVYS	YFESRGGI YFESRGGI	K K	FEKTVI FSEVCI	FGLQYFIKI FGLQYIIKI	RYLCGRVVI RWLVGPVV	NKQMIEE. TKAMIEQ.	ATEFYHCHFG AKQFYKSHFG
	Platyhelminthes	Brugia malayi Toxocara canis Echinococcus multilocularis	VTHH ITHH	NQYPEGTTHVYS SQYPKGTSHVYS YPPGTTEVYS	YFESRGGI YFESRGGI YFESRGGI	K K K	FSEVCF FPEVCF FSETIF	FFGLQYIIKI FFGLQYLLKI FFGLQYILKI	RWLVGPVV [.] RWMVGPVVI KYLVGSVI [.]	TREMIDE. NKHMIQQ. TERKIRE.	AKQFYKSHFG AKHFYKVHFG AKEVMREHFG
	Cnidaria	Schistosoma haematobium Acropora digitifera Exaiptasia pallida	VSHY VSHH VSHH	SQYPAGTEFIYS KQYPPGTSILFS KQYPKNTSIVFS RQYPDGTSTVFS	YFESRGGI YFESRGGI YFESRGGI	R K K	FPNSVI FPEVCI FQSVCI	FGLQYILKI FGLQYLIKI FGLQYILKI	KNLVGQVI [.] RWLVGQVV [.] KWLVGQVV	THEKIDE. TAEKIRQ. TKSKIEE.	AKSILLSHFG AKDFYQLHFG AKQLYKLHFG
	Porifera	Amphimedon queenslandica Suberites domuncula Priapulus caudatus	NTHY VTHH VSHY	LQYPPGTTTVYS LQYPPGAEHVYS KQYPPGTTALWG	YFESRGGI YFESRGGI YFESRGGI	K K K	HPQTVI FPETVI FPTTVI	FGLQYILKI FGLQYILKI FGLQYILKI	RYFLGKVV ⁻ KSLVGKVV ⁻ RWLVGPVLI	TLEKIEQ TREKIEE NKQMIRE	AKAIFDVHVG AAAVFDAHLG AAEFYKLHFV
	I	Trichoplax adhaerens Rhizophagus irregularis DAOM 197198w Rasamsonia emersonii CBS 393.64	FTHF PSHS HSHW	KQYPPKTTKVYS LLFPDSVKSV-A NLYPPGTRYVSS	YFESRGGI YGEFRKS` YIESRGGI	K YDNDKE P	FENVVI DTRVLI YPAHLI	FFGLQYIIK FCGIRYIIE FFGLQAFIK	RLLLGKVV ⁻ NYIA-IKW QHLL-RPI ⁻	TKEKIDE. TQKDVDL. TIDDIDE.	AKAFSKAHFG AEKFFSTHNA AEIVTRQHQI
	Fungi	Capronia epimyces CBS 606.96 Exophiala dermatitidis NIH/UT8656	HSHW HSHW	NLYPPKTTHVSS NLYPPGTRHVSS NLYPPGTSHVSS KAYP-KAEKLIA	YIESRGG: YIESRGG:	I I	YPAHMI YPAHLI	FVGLQAFIKI FIGLQAFIKI	KHLL-RPV KHLL-RPV	TIDDIDE. TIDDIDE.	AEIVTRQHQI AEIVTRQHQI
		Batrachochytrium dendrobatidis JAM81 Spizellomyces punctatus DAOM BR117 Allomyces macrogynus ATCC 38327	VAHN TTHF LSHY	QLYP-DAVKMVA ELYP-EAKKMIA ALYP-DAQEMVA	YGEFRAS` YGEFRTG` YAEFRAPI	YNKDKT YDKDLN FNKDHH	DSRIV DRRIV DHRIVV	FYGMRYFIE AYGIRYIIE WYGMRYLVE	NYVA-VKY NYVS-KPW QYLA-KQW	TVQDVQQ TLEDVAL TAADLAL	AEAFLSTHNA AERFFSMHNA ADQFFSTHNA
	Viridiplantae	Chlorella variabilis Gonium pectorale Chlamydomonas reinhardtii	ATTA ATHF	APHLLTSYLPIA A LQYP-KAQKMVA	YGEFRQG` YGEFRQGI YGEFRQGI	YDKDTR FNKDKN FNKDKT	DTRAVI DTRMVS DTRLVS	FYGLRYILEI SYGMRYLVEI SYGMRYLVE	NFVA-RRW NYIA-KRW TYIS-RQW	TLQDVEL. TMEDVDM. TMEDVEM.	ADRFFGSHMA AEAFYRCAAV ADAFYRTHMA
		Aureococcus anophagefferens Chrysochromulina sp. CCMP291	VSHW VSHY	LQYPPNTTRVYS KQYPAKTTTVYS RQYPPGTEYVYS TMYP-DSKKAVG	YFESRGGI YFESRGG [\]	K V	YDEVVI FEEVVI	FFGLQYYVKI FFGLQYFIKI	KYLVGEQV [.] RYLCGVVV	TKAKIDE. TEDKIAY.	AERFYGEHFP AKEILDSHMG
		Capsaspora owczarzaki ATCC 30864	IAHY	RQYPPKTTTVYS LMYP-ECKSMSA	YFESRGGI	D	FPETVI	FGLQYILE	RYLAGPVV	TQAKIDE	AKEVFALHFG