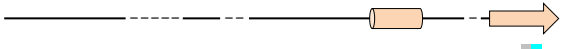
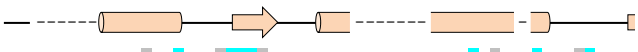


# Supplementary File 1




<i>P. brassicae</i>	1	-----MLWAKRS-----DRSV	EVD
<i>E. huxleyi</i>	306	-----SPPAWPA-----H-----	YRPTAHE
<i>B. natans</i>	74	-----PKRYKESLETRPSDDTLDSYR-----	NLRPVCVV
<i>G. theta</i>	1	-----MACVP-----	PFPCQPVQR
<i>Chrysochromulina</i>	138	-----DPHAWPEV-----PSAAEHLPPDCFRSVHCAPMRSV	PRC
<i>C. owczarzaki</i>	1	MDQVASHISQQTIERGRLRLPGV-----SSPVVNCRLQVY-ATQPT	IPRY
<i>O. cincta</i>	1	-----MSETPFRDCLGGPGTP-----VPQPLNNGTGHYDGGDTHNYNI-	ITGNVPCY
<i>S. rosetta</i>	1	-----MSGGGEW-----	WQCPC-PLESVPRV
<i>L. anatina</i>	1	-----MAT--AEVPSDG-----	RKPHEKESGYTSMDFLYF- DTEDIPCL
<i>C. gigas</i>	1	-----MAKE-----	KKNFDLKEYPT- STEEIPRL
<i>L. gigantea</i>	1	-----MATSVERSPESEG-----	EDAYS-----TIRGELKQYST- QTEPVPRL
<i>A. queenslandica</i>	1	-----MAEPKGPSSSKIEMKKYST- PPKPT	QRL
<i>A. aurita</i>	1	-----MEDSPRSANKTPDYCLIDGHRVRYNYNI- KTTEI	IPRL
<i>C. intestinalis</i>	1	-----MAVFASGSYDPDSITKYSS- ITEQI	IPRR
<i>N. vectensis</i>	1	-----MAAVSDLYTDLDGHLVRKYSL- DWIQV	PRL
<i>A. millepora</i>	1	-----MASV--VSDKRGTYVDLEGHKVRKYD- LQLLSKI	IPRL
<i>S. purpuratus</i>	1	-----ASSASECGTSK--ADQNTKCRIDLDPLQHRKYTF- PSEQI	IPRL
<i>O. bimaculoides</i>	1	-----MAAEAGDPHRYK- PLSKV	PRL
<i>D. citri</i>	1	-----MA-----	ESSQTDSDGKSSTDGFRKYNI- PLEOVPRL
<i>T. cancriformis</i>	1	-----MESGEISSPAKKIPGLKYTF- IEQKV	EIC
<i>C. teleta</i>	1	-----MATVEGGTDGWDENQLRKYTF- PTTQL	QRM
<i>A. pisum</i>	1	-----MAGWNESQLRKYNI- KVDKI	PTL
<i>H. sapiens</i>	1	-----MAATAAEAVASG----SGEP--REEAGALGPAWDESQLRSYST- PTRPI	IPRL
<i>B. floridae</i>	1	-----MAGAEGWSSAQLRQYST- PLETI	IPRL
<i>F. occidentalis</i>	1	-----MSTRNEPQCNLRYKDT- PLDDI	IPRL
<i>C. aquilonaris</i>	1	-----MATAIGNGW--GDQKDYGT- PTVPI	PRM
<i>I. scapularis</i>	1	-----M--AQSECEGCTGCSSLDFOQYGT- PLEAV	PRL
<i>A. geniculata</i>	1	-----MADSKYHFRRYNI- PVEPI	PVL
<i>C. sculpturatus</i>	1	-----MASPQTELSYDT- PLEPI	IPRL
<i>S. olivacea</i>	1	-----MEESV--EHKQHVVNHNHTAHLKQYF- PTEHV	PRL
<i>T. castaneum</i>	1	-----MDGDKKPWDPSQLRKYDL- NLEEI	IPRL
<i>S. maritima</i>	1	-----MAVSESKVAFRQYD- PKOSI	IPRL
<i>E. danica</i>	1	-----MAYAP--YLMASEKRGWHPDQLRKYDL- NLEEI	IPRL
<i>R. prolixus</i>	1	-----VMDQERRVWDETQLRKYDI- S LKSV	PKY
<i>P. humanus</i>	1	-----MAENNEKNWQSQLRKYNI- QCDQI	IPRL
<i>C. pallens</i>	1	-----MKMAQNNIEWNNENQLRKYD- ILEDI	IPRL
<i>Z. nevadensis</i>	1	-----MADKKEWDQSQLRKYDI- QLDEI	IPRL
<i>T. commodus</i>	1	-----MRRRAAPHILRGPPVESSTVR--TGTKMAQKRGYDASQLRKYDI- QLEEI	IPRL




<i>P. brassicae</i>	14	DV---AADVV DAGDAATQADR PVVVDGLAS-----RAGD	MTVAK--LDAIGDVQV
<i>E. huxleyi</i>	321	PFQDGGQATLDTLARYEADQPVVLTGADIVDV-----	ERSSDNAKVEALLGDKAV
<i>B. natans</i>	103	PWG---SFLLDQFLAEHLPIVIRGSQLIKRGGSTGESKESKWT	TPGH-QOSMLAAKV
<i>G. theta</i>	16	SFD---DPAVIDFLRREEPVILSNVSLVLRP-----	LVGKKNVDY--LKEIFPMISS
<i>Chrysochromulina</i>	172	PFQ---SKAARALLEQRKPVILTHHTLVGG-----	AASKWTLDY-LCQQMGLPC
<i>C. owczarzaki</i>	43	RAT---DDAARLALRSKTFVILDSIAAP-----	AVERWDLEF-LKHLGMSN
<i>O. cincta</i>	48	DFN---DFVALNLKEQVPVILKGADLVSS-----	A-MKWDLDY--LSTHIGGGRF
<i>S. rosetta</i>	21	RVC---DPKLLDFIREQRPVITDLSKLVES-----	A-RHWDLEY-MEKHMGDCKF
<i>L. anatina</i>	40	NAST---QSSKVDQFIASERPVLMNTDLDVKT-----	A-LHWDLNY-LEQHLGDGDF
<i>C. gigas</i>	24	NID---NPETEKRIAAGLPVITDLSGLVRS-----	A-LHWDLDY--LQGNIGDGF
<i>L. gigantea</i>	37	NHL---DPRVEALMRAEKPVVITDNLVKS-----	A-FHWDAFY-LSSNIGSAKO
<i>A. queenslandica</i>	29	CWT---EATADHLMTHEEPVVLTDLDVQS-----	A-LHWDLSY-LEQNMGPAKH
<i>A. aurita</i>	37	NFN---DPEAAELISSQKPVVLTGTLNLEP-----	A-LHWNLEY-LRDNIGDGN
<i>C. intestinalis</i>	28	SIQ---DPETYQLIKDSKPVVITDNLVTS-----	A-SKWDLEY-LNKNLGDGLF
<i>N. vectensis</i>	30	HYQ---DBKATELIKNECPVVLTDSDIIS-----	A-MKWDIEY-LRENIGDGF
<i>A. millepora</i>	35	EYD---DPNVESIANEPPVLLVNSNISS-----	A-LKWDLDY-LKKNLGAQSF
<i>S. purpuratus</i>	41	DVS---DPKVSEYVRDGKPVVITGTLNLET-----	A-LKWDLDY-LEKNLGSQKF
<i>O. bimaculoides</i>	23	PYD---DPQAQRLLISAEQPVVLTGSDLVDS-----	A-LHWNLDY-LSDNMANTQF
<i>D. citri</i>	32	SFD---DPRVDEYIGDMKPVVITGSLNLIQS-----	A-MKWDLEY-LESHMPSNLF
<i>T. cancriformis</i>	30	DAC---DPEALNLSIKQFPVVLIRNTRLIDS-----	A-LHWDIEY-LERHAGSSDF
<i>C. teleta</i>	30	SCK---DPRLNDVIAREEPVLTDCNCLASS-----	A-SHWSLEY-LSSNIGNGTF
<i>A. pisum</i>	23	QYD---DPKVDLSLSSNNKPVVILKGSKLVSQ-----	V-LKWDLDY-LAEHMNSICC
<i>H. sapiens</i>	46	SQS---DRAEELIENEPPVLTDTNLVYP-----	A-LKWDLEY-LQENIGNGDF
<i>B. floridae</i>	26	SCT---DPEADRLISEEKPVVLTDTHLIDS-----	A-LKWDLDY-LRANLGGGLC
<i>F. occidentalis</i>	27	NCM---DPQVDELIKSKKPVVLTGSLNLVGA-----	A-SKWDLDY-LEKNMNGDGF
<i>C. aquilonaris</i>	26	SCH---DPEAQRRIAMQPVVLTDTNLVTS-----	A-LKWDLDY-LESNIGGGDY
<i>I. scapularis</i>	31	SHT---DPEADRLIANMMPVLTDTGLVAP-----	A-LKWDLDY-LESHLGGGSC
<i>A. geniculata</i>	22	SPS---DPEAEHLIASMKPVVILKNTNLVSS-----	A-LKWDLDY-LEANIGDGVF
<i>C. sculpturatus</i>	22	SCL---DPNADALLENMKPVVLTDTNLVSS-----	A-LKWNLDY-LQKNLGDGSE
<i>S. olivacea</i>	35	SAS---DPLASQLIAEEKPVVLTDTNLCDT-----	A-LKWDLDY-LAQHMGSERY
<i>T. castaneum</i>	27	HYK---DPKIDEYIKENKPVVITENIIVKP-----	AVQRWSLEY-LERNLGHSGH
<i>S. maritima</i>	24	SIF---DPEADKLISEERPVLITDNLIRP-----	A-LKWDLEY-LESHLGPQNY
<i>E. danica</i>	35	EYS---DARVDEFIAKDRPVVITGTCVLVAP-----	A-AKWTLEY-LAHNIGGGEF
<i>R. prolixus</i>	28	KVS---DPKVEELIAARKPVVITVDSLDVAP-----	S-TKWDLNY-LQEHMGSSTNC
<i>P. humanus</i>	28	RFD---DPKVELELILQNKPVVILGSDLVKS-----	T-EKWDLEY-LEKNMGSDSF
<i>C. pallens</i>	29	DCN---DPNVDI LSSNRPVVIITGANLVNT-----	A-NKWNLEY-LEKNMGNSDF
<i>Z. nevadensis</i>	26	SVK---DPKVDEFIADNKPVVITDTRLVAS-----	A-ERWDLDY-LEQNMNGDGF
<i>T. commodus</i>	51	HAS---DPRVDELISENKPVVITGTDLVSS-----	A-MLWDLEY-LEARNMNGDXY

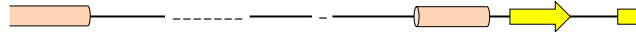




<i>P. brassicae</i>	108	-----TGRHYLLYGEPLP-----
<i>E. huxleyi</i>	433	-----AGDSAERLYLQ-ETMSGH--PELAAE
<i>B. natans</i>	209	-----EDGNKGRSGLLYLQ-ESLSGH--SEFSSE
<i>G. theta</i>	107	-----QSHAARRHYLQ-QLVVTGMGERILLDD
<i>Chrysochromulina</i>	272	----PAE--GVDSKDS--AAGD--GGDAAGGDASSSQRYLYLQ-TALVDVGVGAEMMA
<i>C. owczarzaki</i>	166	AAAVAPADAAAAPDSNSQQPPAASDDSAARTASQFGIHSQDVVYLYLQ-QGLSNSVGLKIVES
<i>O. cincta</i>	167	-----RSQERYLYLQ-QPLNNTVGPQIASD
<i>S. rosetta</i>	111	-----MRSKDKFYLYLQ-QGLNDTVGPTIVKD
<i>L. anatina</i>	132	-----KKGSEKNLYLQ-QTLNDAVGVKRRIVD
<i>C. gigas</i>	114	-----KPGKDKVLYLQ-QALNEGVGKRRIVAD
<i>L. gigantea</i>	127	-----KKGDKIYLYLQ-QALNDSVGSLSLVD
<i>A. queenslandica</i>	119	-----EGRTDEYLYYQ-DALTDTVGSGIKHD
<i>A. aurita</i>	128	-----KEDDKIYLYLQ-QMLTNRVKDKVVTD
<i>C. intestinalis</i>	118	-----ARTKEKLYLQ-QTLNDSVGTNIIVTD
<i>N. vectensis</i>	120	-----DPTMARAAGNLRFYLYLQ-QMLNDQVGRNIVAD
<i>A. millepora</i>	125	-----KASDSRVLYLQ-QMLDDSVGKNIIVKD
<i>S. purpuratus</i>	131	-----KGCYDKVLYLQ-QALNDSVGPSIVED
<i>O. bimaculoides</i>	113	-----QCSKKQLYLQ-QPLTEGVGDKIVQD
<i>D. citri</i>	125	-----KEGDERLYLQ-QVLDSVVGQPOLVQD
<i>T. cancrivormis</i>	120	-----KIGHLRYLYLQ-QALSSVTGEGIVLD
<i>C. teleta</i>	120	-----EQRRFYLYLQ-QPLNDTVGPQVVKD
<i>A. pisum</i>	113	-----KKGDSRYLYLQ-QVLNNSISQRIIVSD
<i>H. sapiens</i>	136	-----QQRGGEERYLYLQ-QTLNDTVGRKIVMD
<i>B. floridae</i>	116	-----AETE-GKRVLYLQ-QTLNDTVGKNIIVD
<i>F. occidentalis</i>	130	-----KGDDELYLYLQ-QALSSVTSAGVVQD
<i>C. aquilonaris</i>	116	-----KPGKERYLYLQ-QALNNTVGGIVQD
<i>I. scapularis</i>	123	-----G-HNKYYLYLQ-QMLNETVQSSIMLD
<i>A. geniculata</i>	113	-----ELGGRRYLYLQ-QPLNDTVGKNIIVD
<i>C. sculpturatus</i>	113	-----QANDRRYLYLQ-QPLNDTVGKNIIVKD
<i>S. olivacea</i>	126	-----KPGDERVLYLQ-QGLNNTVQQAIVMD
<i>T. castaneum</i>	124	-----KKGDERLYLQ-QSLTTTVGNIVED
<i>S. maritima</i>	117	-----KSGDDRYLYLQ-QTLNSTVGVQAIIVD
<i>E. danica</i>	126	-----KAGNDRPYLYLQ-QALNSTAGPSIVED
<i>R. prolixus</i>	120	-----KKGNDKLYLYLQ-QTLNDTVGPSIVRD
<i>P. humanus</i>	123	-----KKGDDRYLYLQ-QLLNNTVGPQIVDD
<i>C. pallens</i>	127	-----KRGDDRYLYLQ-QALNNTVGSIVQD
<i>Z. nevadensis</i>	121	-----RRGEERYLYLQ-QALNNTVGPQIVQD
<i>T. commodus</i>	146	-----KRGEERYLYLQ-QALNNTVGPSIVQD



<i>P. brassicae</i>	121	--SALWRSLLPDMERVLGSTAQLTSSLLWMLDATCSLFLYEMCHGLLLQMAQGRFIMFF
<i>E. huxleyi</i>	456	FRSNNWFPELLQNSNRH-RWGLPDSNELFIQMGAEDAHYDEQRHNLFFQVGRGRQQLLFF
<i>B. natans</i>	236	FASNNWNLRLRIVQKY-GWCTPDRNLLIGMGGATIPAHYDEQENMFQMRGRREYVLYWF
<i>G. theta</i>	132	FKHYVDGTVYGWKAQL-GFGDLTNNLLLVGTTGHVTPAHYDEQHNFFCOLQGRQVMLFS
<i>Chrysochromulina</i>	319	FRAFDDWEGVLATQRL-GWGSLSNLLLVGQKQNTFCHYDEQONLFAQLHGARRVILFS
<i>C. owczarzaki</i>	225	FLQFNWKLLELQDA-NWSDLTNNLLLVSMAGAVTFAHYDEQENLFAQVGRKRCVLF
<i>O. cincta</i>	190	FIQFNWSAAEHKREF-NWGPLTSNLLLIQKQGNITFCHYDEQONLFCPLRGRKRILLFN
<i>S. rosetta</i>	136	FVGFNWTWITDVVKAL-NWGHLLTNMLFVSMPLHVFCHYDEQENFFAQVGRTRVILLFH
<i>L. anatina</i>	156	FLGFNWDWINKQNGN-NWGPLTANLLLIQEGNYPFVHYDEQHNLFQVQVGGCRILFF
<i>C. gigas</i>	138	FLGFNWSWVTEQQKKN-KFGALTSNLLLIQMEGNVTFAHYDEQENFFAQIRGYKRIFLFF
<i>L. gigantea</i>	151	FIKFNWSWATEQQKKY-KWGALTSNLLLVGMDGVIIPAHYDEQONFFAQIGGRFRILLFD
<i>A. queenslandica</i>	144	FVHFNWHWVSERKKRY-NWQPLTSNLLLIQSPGNITFCHYDEQHNFFQVGRGRKILLFA
<i>A. aurita</i>	152	FLSNFNWGLVGOQRY-NWGPLTSNLLLVSQPGNITFLHYDEQENFFAQASGGRKMLFF
<i>C. intestinalis</i>	142	FLQFNWDVWVKCQAAY-GWGSLSNLLLIQLEGNITFVHYDEQENFFAQISGHRKILLFS
<i>N. vectensis</i>	149	FLGFNWAWLNTMOKEM-DWGPLTSNLLLIQIPGNITFVHYDEQONLFCQVTCGRVLLFH
<i>A. millepora</i>	149	FLEFKWQWLTQMOKKM-NWGS LTSNLLLIQIPGNITFVHYDEQONFFGOLTCGRVLLFH
<i>S. purpuratus</i>	155	FVRFNWNWVTDYQKKN-SWGPLTSNLLLVSMEGNVTFAHYDEQENFFAQVGRVGRFIMFF
<i>O. bimaculoides</i>	137	FVSNFNWRWISMQQKEN-NWGPLSNLLLVGMAGNITFVHYDEQONFFAQLRGVKRCILLFA
<i>D. citri</i>	149	FLHFNWDWAKNKQKIH-GWGPLTSNLLLIQAGNVTFCHYDEQONLFGVIRGFRKILLFF
<i>T. cancrivormis</i>	144	YVFNWFWIVNIQKRN-GWGS LTSNLLLIQSGGNITFCHYDEQHNLFQVGRGRKILLFF
<i>C. teleta</i>	142	FLQFNWDFAKEQKRN-GWGPLTSNLLLIQAGNVTFCHYDEQENLFAQVGRVGRVILLFF
<i>A. pisum</i>	137	FVFMFNWDWIMSKQKVC-KWGS LTSNLLLIQEGNVTFCYDEQONMFASIRGYKRIFLFF
<i>H. sapiens</i>	162	FLGFNWNWINKQKGR-GWGQ LTSNLLLIQMEGNVTFAHYDEQONFFAQIRGYKRCILFF
<i>B. floridae</i>	141	FLQFNWDWINKQKQKQ-NWGH LTSNLLLIQAGNVTFVHYDEQONFFAQVGRGRKILLFA
<i>F. occidentalis</i>	154	FIRFRWDVVTAKQKLH-NWGKLTYNLLLVGLEGNVTFCHYDEQENLFAQIHGHRKILLFF
<i>C. aquilonaris</i>	140	FLGFNWPWINGQKQKH-GWGPLSNLLLVGLGGNVTFAHYDEQENFFAQVGRGRKILLFF
<i>I. scapularis</i>	146	FLRFNWDVWNRQKQHN-GWGPLTSNLLLVGTGGNVTFAHYDEQONFFAHLRGRKILLFS
<i>A. geniculata</i>	137	FLDFNWKWICEIQKQN-NWGPLTSNLLLVSSAGNVTFAHYDEQONIFAQIRGRKILLFF
<i>C. sculpturatus</i>	137	FLDFNWNWISGQQQNH-NWGPLTSNLLLIQSEGSVTFAHYDEQONFFAQIYGFRRKILLFC
<i>S. olivacea</i>	150	FLQFNWQWLNMQKKN-NWGPLTSNLLLVGMEGNVTFVHYDEQONFFSOLVGYGRKILLFA
<i>T. castaneum</i>	148	FVKFDWDVYVNGKQTKH-NWGPLTSNLLFIAMEGNVTFCHYDEQENFFAQVQVGRKILLFF
<i>S. maritima</i>	141	FVRFNWNWANGRQKKN-NWGS LTSNLLLIQATEGNITFCHYDEQONFFAQVGRGRVILLFF
<i>E. danica</i>	150	FRFNWDVWNLQKKH-TWGPLTSNLLLIAMEGNVTFCHYDEQONIFAQVGYGRKILLFH
<i>R. prolixus</i>	144	FLGFKWDWINGIQKKN-NWGPLTSNLLLIQMEGNVTFCHYDEQENLFAQVGRGRKILLFF
<i>P. humanus</i>	147	FLHFKNWDLNSIQKLS-NWGPLTSNLLLIQMEGNVTFCHYDEQONLFAQITGYKRCILFF
<i>C. pallens</i>	151	FRGFNWSWVNVKQKAN-SWGPLTSNLLLIQMEGNVTFCHYDEQONFFAEVGRGRKILLFF
<i>Z. nevadensis</i>	145	FLNFRWEDWINSKQKMH-SWGPLTSNLLLIQMEGNVTFCHYDEQONFFAEVGRGRKILLFF
<i>T. commodus</i>	170	FLNFRWEDWINKQKAN-NWGPLTSNLLLIQMEGNVTFCHYDEQONFFAEVGRGRKILLFF



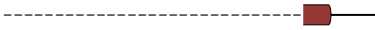
<i>P. brassicae</i>	179	PDGIPDAYMHPVGHARMGLVSDDDRQSQINIDICHPDLAAFPAPFAGLRGTQGVVPPGQALV
<i>E. huxleyi</i>	515	FVEYEKLYPPPVTHP-----CDRQSMV-DVARPDLEAFPATASQYTTLPADLVE
<i>B. natans</i>	295	PGDNQGMYAFCNHA-----CDRQAMV-NPNDPLHRFPFYLRHARPHYAVLQPGDLLY
<i>G. theta</i>	191	PAENGMKYPFPLLHA-----CDRQSMV-P--SHDRMLFFNFDRASGYEAIIVHPGEMLY
<i>Chrysochromulina</i>	378	FADFGCLYPPPMHHP-----CDRQSQV-DLYAPDLSRFPFRFARPLEAAILQPGEVLY
<i>C. owczarzaki</i>	284	PDRFPCLYPPVHHP-----CDRQSQV-DFDNPDLARFPFRFSLHGWECILPEVGEVLY
<i>O. cincta</i>	249	PENFPYLYPPVHHP-----NDRQSQV-NLDNPDYGRFPKFAFAMARGVQATVGPGEILY
<i>S. rosetta</i>	195	PDNFRCLYPPRYGHP-----CDRQSQV-DFDNPDYERFPKFKDARGLEAILRPGDVLY
<i>L. anatina</i>	215	FSQFECLYPPVYHP-----CDRQSQV-DLRAPDFDRFPKLRKLGVEVIVKPGDVLY
<i>C. gigas</i>	197	PDQFKCMYPYPTYPH-----CDRQSQV-DFDNPDYKRFPKFKDVKGYETVVVGGVDLVE
<i>L. gigantea</i>	210	FSMFECLYPPVYHP-----HDRQSQV-DFDNPDHERFPFRNLYGQEAIVGPGVDLY
<i>A. queenslandica</i>	203	PDOYDKLYPPVAHP-----CDRQSQV-DFDSDFERFPKFKIEIGYECILSPGDVLY
<i>A. aurita</i>	211	FSQFKCFYPPFYHHP-----CDRQSQV-DFDNPDHGSFPLFKKAVGREVIVGPGDVLY
<i>C. intestinalis</i>	201	PDQFDCLYPPVAHP-----CDRQSQV-NIANPDYKRFPRFRNAHATEAIVGPGDVLY
<i>N. vectensis</i>	208	PDKFKCLYPPVHHP-----CDRQSQV-DFDPCDYIRFPFLKEICGMEAMVKGPGDVLY
<i>A. millepora</i>	208	PDQFKCLYPPFLYHP-----CDRQSQV-DFDNPDFKRFPKLKLKLGVEVIVGPGDVLY
<i>S. purpuratus</i>	214	FSQFDRLYPPVHHP-----NDRQSQV-NEDDPDFERFPKFRNAKAVEAVVGPGEVLY
<i>O. bimaculoides</i>	196	PDQFKSLYPPVYHP-----HDRQSQV-NLENPNLEKRFKVLRLKGFATLHPGDVLY
<i>D. citri</i>	208	PEQFDCLYPPVSHHP-----HDRQSQV-DFENPDLQRFPRFREAKGMEAVVGPGEVLY
<i>T. cancriformis</i>	203	PEQFNLYHPFFPHHP-----HDRQSQV-DFDEPDYIRFPNFHFKARGLFVAVVGPGEVLY
<i>C. teleta</i>	201	PEQFSCLYPPVHHP-----HDRQSQV-DFENPDYERFPFLKDVACQEAIVGPGDVLY
<i>A. pisum</i>	196	FSEFECLYPPVHHP-----YDRQSQV-DFDNPDYIKRFPKFKEACGYEIVVGPGEVLY
<i>H. sapiens</i>	221	PDQFECLYPPVHHP-----CDRQSQV-DFDNPDYERFPFRQNVVGYETVVVGPGEVLY
<i>B. floridae</i>	200	PEQTECLYPPVHHP-----CDRQSQV-DFDNPDYNRFPKFRYASGLEAVVGPGEVLY
<i>F. occidentalis</i>	213	PEQFGCLYPPVHHP-----HDRQSQV-DLDNPDYDRFPKFRDLHGVAVAVVGPGEVLY
<i>C. aquilonaris</i>	199	PEQFDCLYPPVYHP-----HDRQSQV-DFENPDLSRYPKFSEASGMETILSPGEVLY
<i>I. scapularis</i>	205	PDQYGCLYPPVWHP-----HDRQSQV-DFSDPDLRSRFPFAHLRGWETVLPGEVLY
<i>A. geniculata</i>	196	PEQYECFYPPVHHP-----HDRQSQV-DFENPDYIKRFKFRDAHGVEAILGPGDVLY
<i>C. sculpturatus</i>	196	PEMYECLYPPVWHP-----HDRQSQV-DFDNPDDEKFPFRHEIRQODAIIPGVDLY
<i>S. olivacea</i>	209	PEHYERLYPPVYHP-----HDRQSQV-DFDPPDMEKFPGLKHLQGMEAVVGPGEVLY
<i>T. castaneum</i>	207	FSQFECLYPPVHHP-----HDRQSMV-DFERPDYKRFKFKNVKGWAVEAVVGPGEVLY
<i>S. maritima</i>	200	PEQFECLYPPVYHP-----HDRQSQV-DFDNPDYERFPKFRIEAMEAVVGPGEVLY
<i>E. danica</i>	209	PDQFDCLYPPFIHHP-----HDRQSQV-DFENPDYERFPKFRKAKAMQAVVGPGEVLY
<i>R. prolixus</i>	203	PEQFDCLYPPVHHP-----HDRQSQV-DFDEPDYKRFKFKSEAKGEEAIVGPGEVLY
<i>P. humanus</i>	206	PEQFECLYPPVYHP-----HDRQSQV-DFENPDYKRFKFKSQQVQGEIVLPGEVLY
<i>C. pallens</i>	210	PEQFECLYPPVYHP-----HDRQSQV-DFEKPDYKRFKFRREARGMQAVIIPGVDLY
<i>Z. nevadensis</i>	204	PEQFECFYPPVYHP-----HDRQSQV-DFERPDYTRFPKFRREARGQEAIVGPGDVLY
<i>T. commodus</i>	229	PEQFECFYPPVYHP-----HDRQSQV-DFDRPDYTRFPKFRREARGQEAIVGPGDVLY



<i>P. brassicae</i>	239	IPYGMWQHIEAGPGL-----SISVSTSVHA---ARTCG
<i>E. huxleyi</i>	567	LPYGFWHLRNDDA-----LSSLSFWLSL-----T
<i>B. natans</i>	347	LPYGMWHLRLNDP-----LAISITFWSKQ-----QK
<i>G. theta</i>	241	IPSYWVHVINLE-----ETVSLTFWFK-----CP
<i>Chrysochromulina</i>	430	LPOYWHHINLDE-----ACVSLNFWFK-----DC
<i>C. owczarzaki</i>	336	IPAYWVHVESLT-----DSVSVNFWYL-----VG
<i>O. cincta</i>	301	TIPIHWWHVINLD-----DTIAINFWHK-----GG
<i>S. rosetta</i>	247	IPRCWVHLVRSLDE-----LSVSVNFWYMS-----PP
<i>L. anatina</i>	267	IPMYWFHVESLIIGSG-----ITTSITFWYK-----SG
<i>C. gigas</i>	249	IPMYWVHVESLPDHC-----HTISVTFWYK-----AG
<i>L. gigantea</i>	262	IPYIYWHHVESVPHNG-----MTVSVNFWYK-----SG
<i>A. queenslandica</i>	255	IPMYWVHTIETSPGE-----LSSITTFWYR-----GG
<i>A. aurita</i>	263	IPVYWVHYIESVMDE-----PTISINFWYKA-----AA
<i>C. intestinalis</i>	253	IPMYWVHVESLSSSDAMDVSHPHSLQDSASIDDVMEGIPPTIISVNFWYR-----GT
<i>N. vectensis</i>	260	IPMYWVHYVESTLNGG-----ITTSVNFWYK-----AG
<i>A. millepora</i>	260	IPMYWVHVESLTMNSG-----ITTSVNFWFK-----AG
<i>S. purpuratus</i>	266	IPMYWVHVESLHGG-----VTVSVTFWFK-----AG
<i>O. bimaculoides</i>	248	IPYIYWHHVESLPQKG-----VTISINFWYK-----NS
<i>D. citri</i>	260	IPLYWVHVIESKQKED-----YTVSLNFWYK-----TK
<i>T. cancriformis</i>	255	IPAYWVHYVESLPGEE-----CNISVTFWYK-----AG
<i>C. teleta</i>	253	IPMYWFHVESLDDGG-----LTSVTFWYK-----AP
<i>A. pisum</i>	248	IPMYWFHVESLMHGG-----CTVSVNFWFK-----AG
<i>H. sapiens</i>	273	IPMYWVHVIESLNGG-----ITITVNFWYK-----GA
<i>B. floridae</i>	252	IPMYWVHVIESLLEGG-----YTVSVNFWYK-----AG
<i>F. occidentalis</i>	265	IPYIYWHHVIESVKPEK-----YTVSLNFWYK-----AG
<i>C. aquilonaris</i>	251	IPVYWVHVIESLQQNQ-----YTVSINFWYKTFNFAKQSR-----AG
<i>I. scapularis</i>	257	IPMYWVHVESAPGKD-----YTVSVNFWYK-----AA
<i>A. geniculata</i>	248	IPMYWVHVESALDGG-----YTVSVNFWYK-----SG
<i>C. sculpturatus</i>	248	IPMYWVHVESLRLTK-----YTVSVNFWYK-----SG
<i>S. olivacea</i>	261	IPMYWVHVIESLPHLG-----NTVSVNFWYK-----GG
<i>T. castaneum</i>	259	IPYIYWHHVIESLRLGG-----PTVTVNFWYK-----GG
<i>S. maritima</i>	252	IPMYWVHVESLQTGG-----YTVSVNFWYR-----AG
<i>E. danica</i>	261	IPYIYWHHVIESLMNGG-----NTLSINFWYK-----AA
<i>R. prolixus</i>	255	IPVYWVHVESLRLGG-----YTVSVNFWYK-----VG
<i>P. humanus</i>	258	IPYIYWHHVIESLMRGG-----YTVSINFWYK-----AG
<i>C. pallens</i>	262	IPYIYWHHVESLMRGG-----YTVSINFWYK-----AG
<i>Z. nevadensis</i>	256	IPYIYWHHVIESLMRGG-----YTVSINFWYK-----AG
<i>T. commodus</i>	281	IPYIYWHHVIESLMRGG-----YTVSINFWYK-----AG



P. brassicae	269	LPP-----AA--CAGIAGNLL--HDAPSAVRDI---YLR-----
E. huxleyi	593	K-KERVDPVFSAHDLTLVRRNLEKHMMAARFGAALFPQRMRRLLRLI-DA-GPGGETSDGV
B. natans	374	ASLDTLKLPLDQRHLLTVRRNLEEMVFNI FGSESLQN-LAKQLSAKH-SSKPSTKLSEG-
G. theta	266	FVG-DLRLPLISQVQRVALRRNIENMFGSMLGNRNELI---SAFLQ-----
Chrysochromulina	456	AKPEKVVLPISASQHLAMRRNIEKLVAOKLGATKAQL-VLPLLSASHTDAEQPAESAMPE-
C. owczarzaki	361	FP--EIAHPLTYQOKISVMRNIEKMLGEALGDPQTQ---SSLLS-----
O. cincta	326	GSA-FVEYPLQAROKIAMVRNIEKMLLEALQDONEL---KELLH-----
S. rosetta	274	ATAEDIRFPLTASQKVAMMRNIEQMLLTALGSAGEV---SDFLR-----
L. anatina	295	PTG-KIEYPLKPOOKMAMMRNIEKMITALNSSEEV---PFMQ-----
C. gigas	277	PTG-NVVYPLSPOOKVSMRNLEKMIHQALNNTDEI---PEFMQ-----
L. gigantea	290	TEE-KIVYPLKPOOKVAMMRNIEKMTSAINNHEEV---PHLLK-----
A. queenslandica	282	FVPSKITYPPLSSQKVAITRNIEKMLHEALQDHNEV---GPLLH-----
A. aurita	292	NISKEIPYPLRMDQKVAIMRNIEKLLGDALGDPPEV---NSLLN-----
C. intestinalis	306	LPLPDVIQYPLSPOOKVSMRNIEKMLAALGDAEKV---GELLR-----
N. vectensis	288	QTPSEISFPLSSQKIAMRNIEKMLGALGSHTEV---GPLLN-----
A. millepora	288	PTPSQITHPLTAQOKVAMRNIEKMLGALGDPHEV---GPLLN-----
S. purpuratus	294	AGPKQVEYPLTPOQKVSITRNIEKMLFEVLKDPKEV---ASLFH-----
O. bimaculoides	276	CQQ-TVTYPLAASQKIAMRNIEKMTDALGDIINEV---APFMR-----
D. citri	289	PTG-DIEYPLKQHKVAILRNIEKMAEALQNOEEV---SHLMR-----
T. cancriformis	283	PTG-VVKYPLKGYQKVAIMRNIEKILVEALQDPQEV---GPLLRL-----
C. teleta	281	FVG-KVEYPLKPOOKVAMMRNIEKMITALNDQHEV---APFMR-----
A. pisum	276	SVE-KIEYPLLDHKQVMIMRNIEKMLAEALHDPNEV---GNMLN-----
H. sapiens	301	PTPKRIEYPLKQHKVAIMRNIEKMLGALGNPQEV---GPLLN-----
B. floridae	280	PTPRNIVYPLKPVQKMAIMRNIEKMLAEALGDYREV---GPLLN-----
F. occidentalis	293	FVG-QVEYPLKGYQKVAIMRNIEKMLAEAMQDPEV---GALLR-----
C. aquilonaris	286	PTG-DIVYPLQGYQKVAIMRNIEKMLLEALRDPEEV---GPLMR-----
I. scapularis	285	PVD-KVIYPRMGHKMAIMRNIEKMLVEALRDVNEV---GPLLRL-----
A. geniculata	276	PTG-KVKYPLQASQKMAIMRNIEKMLVEALKDVNEV---GPLLRL-----
C. sculpturatus	276	PTG-KIKYPLNGHKMAIMRNIEKMLVEALKDVNEV---GPLLRL-----
S. olivacea	289	PTE-KIEYPLKPRQKLAIMRNIEKMLLEALREPAEV---GPLLRL-----
T. castaneum	287	PS--TLEYPLKDHQKVSITRNIEKMLLEVLQDPKEV---GPLLRL-----
S. maritima	280	PTG-KIEYPLKQKVAIRNIEKMLVSGALEKPEEV---GPLLRL-----
E. danica	289	PPP-PISYPLLGHKIAMRNIEKMLAEALQDQKEV---GPLLRL-----
R. prolixus	283	PTG-HITYPLKGYQKVAIMRNIEKMLVEALKDTEEV---GPLLRL-----
P. humanus	286	PTG-FTYPLKSRQKVAIMRNIEKMLINALADPREV---GPLFR-----
C. pallens	290	PTG-EIVYPLKQHKVAIMRNIEKMLLEALQDPREV---GPLLRL-----
Z. nevadensis	284	PTG-QIVYPLKDHQKVAIMRNIEKMLVEALQDPHEV---GPLLRL-----
T. commodus	309	PTG-QIVYPLQGHQKVAIMRNIEKMLVEALQDPQEL---GPLLRL-----



P. brassicae	296	-----RMQW-----
E. huxleyi	650	VGEVLAEARTLLGAVQVADPEKQDEFLLRMLRVRFEGEWQAHV---
B. natans	431	NSKVKEFMVNCLSNF--MGRTQAEPLILDMLGGRYCNDEKWIQPN---
G. theta	306	-----EIASNRFNLPVRM-----
Chrysochromulina	514	VGALREEVTRLLTHV--MPAADVPALWCELVEGRFRLAHQETGQPI---
C. owczarzaki	400	-----DLVLGRYTH-----
O. cincta	366	-----WIVDGRY-----
S. rosetta	315	-----MLVSGRYTDTANHTFRQLEM-----
L. anatina	335	-----NMVLGRYT-----
C. gigas	317	-----NMVLGRYTDPPA-----
L. gigantea	330	-----TMVLGRYT-----
A. queenslandica	323	-----MTCDGRY-----
A. aurita	333	-----MTVNGRYPADRKYFEFDE-----
C. intestinalis	347	-----TMVEGRYTO-----
N. vectensis	329	-----LMVNGRYNLPETESKKGETHSSHS-----
A. millepora	329	-----CMVNGRYTENNDEKDYGADVLS-----
S. purpuratus	335	-----LIVDGRYDLPADPMPPPSS-----
O. bimaculoides	316	-----TMVLGRYT-----
D. citri	329	-----ALVLGRYTE-----
T. cancriformis	323	-----AMVLGRYTOTDAQIGA-----
C. teleta	321	-----NMVLGRYTSDDL-----
A. pisum	316	-----TIVLGRYTSDTN-----
H. sapiens	342	-----TMIKGRYN-----
B. floridae	321	-----TMIQGRYTLMDMTEVNGNKVLYTD-----
F. occidentalis	333	-----TMVQGRF-----
C. aquilonaris	326	-----TMVLGRYTEGDQSV-----
I. scapularis	325	-----AMVLGRYT-----
A. geniculata	316	-----SMVIGRYT-----
C. sculpturatus	316	-----AMVLGRYT-----
S. olivacea	329	-----SLVLGRYTGAEADRQEGALLSAATPHTN-----
T. castaneum	326	-----SMVLGRYTE-----
S. maritima	320	-----AMVLGRYT-----
E. danica	329	-----ALVLGRYT-----
R. prolixus	323	-----AIVLGRYTE-----
P. humanus	326	-----ALVLGRYAEASSKIDDNN-----
C. pallens	330	-----TEVLGRYTE-----
Z. nevadensis	324	-----ALVLGRYTD-----
T. commodus	349	-----ALVLGRYT-----