

KH105_crtIBY1	1	MARRASRPVAAVVVVVLVVVASACCWQAAADVADAQGARGPGRESGDRAKKRIAVLGAGY
KH105_crtIBY2	1	MARRASRLVAAIVVVVLVVVAPACCRQAAADVADAQGARGPGQESDGGRAKKRIAVLGAGY
Brevundimonas	1	-----
Xanthophyllomyc	1	-----
Arabidopsis	1	-----
Haematococcus	1	-----
Thalassiosira	1	-----
Ectocarpus	1	-----
Chlamydomonas	1	-----
Synechococcus	1	-----
Haliscomenobact	1	-----
Pedobacter	1	-----
Fulvivirga	1	-----
Haloquadratum	1	-----
Natrinema	1	-----
Cyclobacterium	1	-----

KH105_crtIBY1	61	AGLSAACELSR LGHEVVVLEKNDYVG GRAHQFEVEADNGQTFKFDAGPSWYWMPEVFDRF
KH105_crtIBY2	61	AGLSAACELSR LGHEVVVLEKNDYVG GRAHQFEVEADNGQTFKFDAGPSWYWMPEVFDRF
Brevundimonas	1	-----
Xanthophyllomyc	1	-----
Arabidopsis	1	-----
Haematococcus	1	-----
Thalassiosira	1	-----
Ectocarpus	1	-----
Chlamydomonas	1	-----
Synechococcus	1	-----
Haliscomenobact	1	-----
Pedobacter	1	-----
Fulvivirga	1	-----
Haloquadratum	1	-----
Natrinema	1	-----
Cyclobacterium	1	-----

KH105_crtIBY1	121	FARYGRTVQEFYQLERLDPAYRIIRNDHNGEGTVDVPGASSEAFMSWARQMNGDARLVDR
KH105_crtIBY2	121	FARYGRTVQEFYQLERLDPAYRIIRNDHNGEGTVDVPGASSEAFMSWARQMNGDARLVDR
Brevundimonas	1	-----
Xanthophyllomyc	1	-----
Arabidopsis	1	-----
Haematococcus	1	-----
Thalassiosira	1	-----
Ectocarpus	1	-----
Chlamydomonas	1	-----
Synechococcus	1	-----
Haliscomenobact	1	-----
Pedobacter	1	-----
Fulvivirga	1	-----
Haloquadratum	1	-----
Natrinema	1	-----
Cyclobacterium	1	-----

KH105_crtIBY1	181	LMDEAKAKYE EGVFKWIWHPMVSWWEMIDLNLVRAALQYDMFNSFVAHLQKYISSDTLLM
KH105_crtIBY2	181	LMDEAKAKYE EGVFKWIWHPMVSWWEMIDLNLVRAALQYDMFNSFVAHLQKYISSDTLLM
Brevundimonas	1	-----
Xanthophyllomyc	1	-----
Arabidopsis	1	-----
Haematococcus	1	-----
Thalassiosira	1	-----
Ectocarpus	1	-----
Chlamydomonas	1	-----
Synechococcus	1	-----
Haliscomenobact	1	-----
Pedobacter	1	-----
Fulvivirga	1	-----
Haloquadratum	1	-----
Natrinema	1	-----
Cyclobacterium	1	-----

Supplementary Figure S5: Alignment of CrtB1 and CrtB2 amino acids within CrtKH105_CrtIBY1 and CrtKH105_CrtIBY2 with those of other eukaryotes.

KH105_crtIBY1	241	ILKWPVIFLGASPNGAPALYSMMTYGGHALGTFYPTGGLARPVVAIAELAKD	LGVDIQLD
KH105_crtIBY2	241	ILKWPVIFLGASPNGAPALYSMMTYGGHALGTYIPTGGLARPVVAIAELAKD	LGVDIQLD
Brevundimonas	1	-----	-----
Xanthophyllomyc	1	-----	MTAFAAYYQIHL
Arabidopsis	1	-----	-----
Haematococcus	1	-----	-----
Thalassiosira	1	-----	-----
Ectocarpus	1	-----	-----
Chlamydomonas	1	-----	-----
Synechococcus	1	-----	-----
Haliscomenobact	1	-----	-----
Pedobacter	1	-----	-----
Fulvivirga	1	-----	-----
Haloquadratum	1	-----	-----
Natrinema	1	-----	-----
Cyclobacterium	1	-----	-----

KH105_crtIBY1	301	AEVTSFRFDETGRGVQAVCTRNDRC	EAVDGVVAAADYHHVEQTLLPPELRRYEQGFWD	AEVTSFRFDETGRGVQAVCTRNDRC	EAVDGVVAAADYHHVEQTLLPPELRRYEQGFWD
KH105_crtIBY2	301	AEVTSFRFDETGRGVQAVCTRNDRC	EAVDGVVAAADYHHVEQTLLPPELRRYEQGFWD	AEVTSFRFDETGRGVQAVCTRNDRC	EAVDGVVAAADYHHVEQTLLPPELRRYEQGFWD
Brevundimonas	1	-----	-----	-----	-----
Xanthophyllomyc	12	IYTLPI	LGLLTSPI	LTKFDIYKISILVFI	AFSATT
Arabidopsis	1	-----	-----	-----	-----
Haematococcus	1	-----	-----	-----	-----
Thalassiosira	1	-----	-----	-----	-----
Ectocarpus	1	-----	-----	-----	-----
Chlamydomonas	1	-----	-----	-----	-----
Synechococcus	1	-----	-----	-----	-----
Haliscomenobact	1	-----	-----	-----	-----
Pedobacter	1	-----	-----	-----	-----
Fulvivirga	1	-----	-----	-----	-----
Haloquadratum	1	-----	-----	-----	-----
Natrinema	1	-----	-----	-----	-----
Cyclobacterium	1	-----	-----	-----	-----

KH105_crtIBY1	361	VMSPSCVLFY	LGFDHRIQGLTHHTFFFDRD	DAHLHAAFDTHTWAE	EPVFYVSATSKTDP
KH105_crtIBY2	361	VMSPSCVLFY	LGFDHRIQGLTHHTFFFDRD	DAHLHAAFDTHTWAE	EPVFYVSATSKTDP
Brevundimonas	1	-----	-----	-----	-----
Xanthophyllomyc	72	VFGTFLDVPY	EEYAFFVIQT	VITGLVYVLATRH	LPSLALPKTRSSALS
Arabidopsis	1	-----	-----	-----	-----
Haematococcus	1	-----	-----	-----	-----
Thalassiosira	1	-----	-----	-----	-----
Ectocarpus	1	-----	-----	-----	-----
Chlamydomonas	1	-----	-----	-----	-----
Synechococcus	1	-----	-----	-----	-----
Haliscomenobact	1	-----	-----	-----	-----
Pedobacter	1	-----	-----	-----	-----
Fulvivirga	1	-----	-----	-----	-----
Haloquadratum	1	-----	-----	-----	-----
Natrinema	1	-----	-----	-----	-----
Cyclobacterium	1	-----	-----	-----	-----

KH105_crtIBY1	421	SVVTGQGEALFV	LVPI	SYQLNGTDNAA	REQILHTVLT
KH105_crtIBY2	421	SVVSGQGEALFV	LVPI	SYQLNGTDNAA	REHILHTVLT
Brevundimonas	1	-----	-----	-----	-----
Xanthophyllomyc	132	IYLF	TAHPSPSPDPLVTDHYFYM	RALSLLITPPTML	LAALSGEYAFDWKSGRAKSTIAAI
Arabidopsis	41	QRLNKGKKKQIPTWSS	SFVRNR	RRIGVVS	SSLVASPSGEIALSSEEKVNVLK
Haematococcus	26	PGRCRPHSSRCP	VAISATLVGPDPRWSIASS	-QVVPKQPQ	LKGKDV
Thalassiosira	41	TKRRDGSILMSAV	SQKSSSSSSSGQGR	TTKEISNE	ALGVTL
Ectocarpus	37	GRGRRWALLAAATTL	AMP	PCARGFALAPQAD	VRPSRATGASGSGGGGGRYFGR
Chlamydomonas	13	PARGR	---	RMAVARATLLRPO	SNVSSSAPS
Synechococcus	1	-----	-----	-----	-----
Haliscomenobact	1	-----	-----	-----	-----
Pedobacter	1	-----	-----	-----	-----
Fulvivirga	1	-----	-----	-----	-----
Haloquadratum	1	-----	-----	-----	-----
Natrinema	1	-----	-----	-----	-----
Cyclobacterium	1	-----	-----	-----	-----

KH105_crtIBY1	481	TDFERDFHSFRGN A FGHANTLSQSLV L KPSMD S LLNNLVFAGHLTNPGPGVPP S IVSGTV
KH105_crtIBY2	481	TDFERDFHSFRGN A FGHANTLSQSLV L KPSMD S LLNNLVFAGHLTNPGPGVPP S IVSGTV
Brevundimonas	1	-----
Xanthophyllomyc	192	MIPTVYLIWVDYV A V G QDSWSINDEKIV G WRLGGVLPIEE A MFLLTNLMIVLGLSACDH
Arabidopsis	96	-----
Haematococcus	78	-----
Thalassiosira	101	AEIALADSRKK Y E A S G ATISPNPGGR L M G INDEVVAEV G YEIGFAEEYLDK E SGETVDE
Ectocarpus	97	TLSASELN V NNNN N NNNNNANGVAAVRR S GRGAGGYVARGGG G ASSALCMSAASTGT A AND
Chlamydomonas	62	-----
Synechococcus	1	-----
Haliscomenobact	1	-----
Pedobacter	1	-----
Fulvivirga	1	-----
Haloquadratum	1	-----
Natrinema	1	-----
Cyclobacterium	1	-----

KH105_crtIBY1	601	YFAAATLMKPM	AFLDTAAMY	GLFRVADDYVD	---	NVGD	AGERQRL	DAFM	ADFWR	CWESG
KH105_crtIBY2	601	YFAAATLMKPM	AFLDTAAMY	GLFRVADDYVD	---	NVGD	AGERQRL	DAFM	ADFWR	CWESG
Brevundimonas	20	FAAAARLFPA	AI	RDDAWMFY	AWCRH	CDDEID	GQVLG	EGAV	GIDPVL	AGRKL
Xanthophyllomyc	312	FFVASAGFP	SEVRER	LVGLYAF	CRVTD	DLIDS	PEVSS	NP	HATID	MVSD
Aradidopsis	146	FYLGT	LM	TPERR	KAIWAIY	VWCRRT	DELVD	---	GP	NAN
Haematococcus	120	FYLGT	LM	TP	IQAKSI	WAIY	VWCRRT	DELVD	---	GP
Thalassiosira	218	FYLGT	QVL	PEPS	MKAIWAIY	VWCRRT	DEIVD	---	AP	RP
Ectocarpus	209	FYLGT	KFMSP	VARKA	VWAIY	VWCRRT	DDIVD	---	GP	RAM
Chlamydomonas	102	FYLGT	LM	TPAQ	AKAVWAIY	VWCRRT	DELVD	---	GP	NAN
Synechococcus	27	FYLGT	LM	LLPPA	KRRAIWAIY	VWCRRT	DELM	---	SP	EA
Haliscomenobact	24	F	SMG	I	KVFDKAY	RASII	YAIY	G	FVRF	ADEIVD
Pedobacter	24	F	SLGI	H	FLNKKL	RHPIY	YAIY	G	FVRL	ADEIVD
Fulvivirga	24	F	SLGI	Y	CLNKD	IRDPIY	SIY	G	FVRF	ADEIVD
Haloquadratum	21	F	HLA	T	RVLPERV	RHATY	VLY	A	FFRV	ADEIVD
Natrinema	20	F	YLAT	R	FLPERV	RHATY	VLY	A	FFRI	ADEIVD
Cyclobacterium	27	F	TLGI	K	ITLCKK	LHMP	IYGIY	G	VRY	ADEIVD

Cyclobacterium 85 **LSMNLVLEH**

KH105_crtIBY1	678	A-YPREL	FERFFRS	MRMDA	KRK-----	VVCL	TMDD	TMEY	MEGS	AAVIG	EFM	LPIL																																			
KH105_crtIBY2	678	A-YPREL	FERFFRS	MRMDA	KRK-----	VVCL	TMDD	TMEY	MEGS	AAVIG	EFM	LPIL																																			
Brevudimonas	102	A-IPAE	EAMD	LLOG	FEMD	VEG-----	RRYD	TLED	TDY	AYH	VAG	VGVMM	ARIM																																		
Xanthophyllomyc	432	GLIPRY	PLDE	LLRG	YTTDL	I	FPL	STE	AVQ	ARK	TP	IE	TTAD	LLD	YGL	CVAG	SV	AE	LL	VYVS																											
Arabidopsis	219	P-VDI	QPF	FRDM	IE	GMR	DLK-----	KS	RY	QNF	DDL	YL	YCY	VAG	T	VGL	MS	VP	V																												
Haematococcus	193	P-MDI	QPF	KDM	IE	GMR	DLH-----	K	TRY	QTF	DEL	Y	EY	CY	R	VAG	T	VGL	M	T	MP	V																									
Thalassiosira	297	PTLP	ITP	FS	DM	IR	GML	MD	I	P	GLG-----	O	ERY	DT	W	DEL	H	L	Y	CY	R	VAG	T	VGL	M	S	MP	V	F																		
Ectocarpus	286	PSLP	IA	PF	KDM	ID	GMI	MD	V	P	GIG-----	K	NR	Y	QTF	EEL	E	L	Y	CY	R	VAG	T	VGL	M	V	LP	IL																			
Chlamydomonas	175	P-LHI	QPF	FRDM	IE	GMR	MDL	V-----	K	S	RY	ET	F	DEL	Y	EY	CY	R	VAG	T	V	AL	M	C	MP	I	M																				
Synechococcus	104	P-QDI	QPY	LD	MI	E	G	Q	R	M	D	L	T-----	W	TR	Y	P	R	F	D	D	L	K	L	Y	CY	R	VAG	T	VGL	M	T	Q	G	V												
Haliscomenobact	97	K-I	E	R	E	L	I	D	A	F	L	S	M	E	M	D	L	H-----	H	H	Q	Y	E	D	H	L	Y	Q	E	Y	I	G	S	A	E	V	V	G	L	M	C	L	R	V	W		
Pedobacter	97	H-I	D	R	E	L	I	E	L	F	L	K	S	M	E	M	D	L	N-----	E	Q	E	Y	T	P	O	L	Y	D	E	Y	I	L	G	S	A	O	V	V	G	L	M	C	L	R	V	F
Fulvivirga	97	E-V	D	L	E	L	I	D	H	F	L	K	S	M	E	M	D	L	K-----	K	V	R	Y	D	I	N	S	F	N	T	Y	I	G	S	A	E	V	V	G	L	M	C	L	K	V	F	
Haloquadratum	94	E-I	P	N	E	D	V	N	V	F	I	D	A	M	L	A	D	V	D	T-----	D	O	Y	E	T	Y	D	D	L	E	T	Y	M	D	G	S	A	A	A	V	G	R	M	T	A	I	M
Natrinema	93	G-I	D	D	E	I	N	T	F	I	D	A	M	A	T	D	I	E	T-----	S	R	Y	E	T	Y	A	D	L	E	S	Y	M	R	G	S	A	S	V	G	V	M	T	A	I	M		
Cyclobacterium	100	H-I	E	R	D	L	I	D	A	F	L	S	M	A	M	D	L	D-----	F	A	T	Y	N	D	S	K	Y	K	E	Y	I	G	S	A	E	V	V	G	L	M	C	L	R	V	F		

KH105_crtIBY1	727	MPDR	D	S	L	A	F	K	Q	A	I	P-----	H	A	R	D	L	G	L	A	F	Q	I	T	N	M	L	R	D	I	G	E	D	N	R	-	L	G	R	Q	Y	I	P	V	D	A	C	N	R	H	G	L									
KH105_crtIBY2	727	MPDR	D	S	L	A	F	K	Q	A	I	P-----	H	A	R	D	L	G	L	A	F	Q	I	T	N	M	L	R	D	I	G	E	D	N	R	-	L	G	R	Q	Y	I	P	V	D	A	C	N	R	H	G	L									
Brevudimonas	150	G	V	Q	---	---	D	A	P	T	L	R	---	---	A	O	D	L	G	L	A	F	O	L	T	N	I	A	R	D	V	E	D	A	K	-	G	G	R	V	L	P	G	Q	W	L	D	E	A	G	V										
Xanthophyllomyc	492	W	A	S	A	P	S	Q	V	P	A	T	I	E	E	R	E	A	V	L	V	A	S	R	E	M	G	T	A	L	Q	L	V	N	I	A	R	D	I	K	G	D	A	T	-	E	G	R	F	Y	L	P	L	S	F	F	G	L	R	D	E
Arabidopsis	267	G	I	D	P	K	S	K	A	T	T	E	S	---	---	V	Y	N	A	A	L	A	L	G	I	A	N	Q	L	T	N	I	L	R	D	V	G	E	D	A	R	-	R	G	R	V	Y	L	P	O	D	E	L	A	O	A	G	L			
Haematococcus	241	G	I	D	P	S	Y	K	G	P	M	D	V	---	---	V	Y	K	A	A	L	A	L	G	T	A	N	Q	L	T	N	I	L	R	D	V	G	E	D	A	R	E	R	N	R	I	Y	L	P	M	E	D	L	O	O	F	G	L			
Thalassiosira	349	G	C	A	E	G	Y	T	D	E	V	A	K	---	---	E	P	A	L	S	L	G	V	A	F	Q	I	T	N	I	L	R	D	V	G	E	D	A	E	K	R	E	R	V	Y	L	P	O	R	D	M	E	R	F	G	V					
Ectocarpus	338	G	T	A	E	G	V	S	E	E	D	A	K	---	---	F	P	A	L	S	L	G	I	A	L	Q	L	T	N	I	L	R	D	V	G	E	D	A	V	-	R	G	R	I	Y	L	P	L	E	D	L	E	K	F	G	V					
Chlamydomonas	223	G	I	E	P	T	Y	K	G	O	L	E	P	---	---	V	Y	R	A	A	L	A	L	G	T	A	N	Q	L	T	N	I	L	R	D	V	G	E	D	A	Y	O	R	N	R	I	Y	L	P	L	E	D	L	K	Y	G	I				
Synechococcus	152	G	V	D	G	A	Y	T	S	A	P	W	S	D	R	P	-	D	T	S	D	A	A	V	A	L	G	I	A	N	Q	L	T	N	I	L	R	D	V	G	E	D	R	G	-	R	G	R	I	Y	L	P	L	E	D	L	E	R	F	G	V
Haliscomenobact	144	T	N	G	-	D	E	Q	Q	Y	Q	N	L	K	A	---	---	P	A	R	S	L	G	S	A	F	Q	K	I	N	F	L	R	D	M	K	S	D	F	D	E	R	G	R	V	Y	F	P	G	V	D	F	R	N	F	S	E				
Pedobacter	144	T	E	G	-	N	E	Q	Q	Y	Q	L	L	K	P	---	---	S	A	M	M	L	G	S	A	F	Q	K	V	N	F	L	R	D	L	N	A	D	Y	K	N	L	S	R	T	Y	F	P	N	V	D	L	R	A	F	S	N				
Fulvivirga	144	C	N	G	-	D	K	T	Y	E	H	L	K	P	---	---	Y	A	R	K	L	G	S	A	F	Q	K	I	N	F	L	R	D	L	R	E	D	Y	V	H	M	G	R	S	Y	F	P	D	V	D	I	R	V	F	D	E					
Haloquadratum	142	D	T	E	---	---	N	A	E	T	A	L	P	---	---	H	A	T	A	L	G	E	A	F	Q	M	S	N	F	L	R	D	V	G	E	D	V	K	E	R	D	R	V	Y	L	P	O	E	T	L	R	O	Y	D	V						
Natrinema	141	E	P	D	---	---	A	E	D	V	A	I	P	---	---	H	A	V	T	L	G	E	A	F	Q	M	T	N	F	L	R	D	V	E	D	I	R	E	R	D	R	I	Y	L	P	O	E	T	L	R	N	H	G	V							
Cyclobacterium	147	C	E	G	-	D	Q	G	N	Y	E	H	L	K	H	---	---	A	A	C	K	L	G	S	A	F	Q	K	V	N	F	L	R	D	L	K	S	D	Y	E	D	R	G	R	V	Y	F	P	G	V	D	F	N	S	F	D	S				

KH105_crtIBY1	780	N	-----	G	K	L	T	S	H	E	O	P	G	F	R	E	L	M	E	E	M	F	A	F	T	D	N	L	Y	A	S	A	D	L	G	I	D	M	L	P	E	Q	V	R	D	V	I	R	V	A	R	L	A							
KH105_crtIBY2	780	N	-----	G	K	L	T	S	H	E	O	P	G	F	R	E	L	M	E	E	M	F	A	F	T	D	N	L	Y	A	S	A	D	L	G	I	D	M	L	P	E	Q	V	R	D	V	I	R	V	A	R	L	A							
Brevudimonas	198	P	R	D	---	---	O	V	D	Q	P	R	H	R	Q	A	V	A	H	T	A	Q	R	L	V	A	A	E	P	Y	A	S	A	R	G	L	I	D	L	N	P	S	A	W	A	V	A	T	A	R	G	V								
Xanthophyllomyc	551	S	K	L	A	I	P	T	D	W	T	E	P	R	P	O	D	F	D	K	L	S	L	S	P	S	T	L	P	S	S	N	A	S	E	S	F	R	E	W	K	T	S	L	E	L	V	A	Y	A	E	D	L	A	K	H	S			
Arabidopsis	321	S	D	E	D	I	F	A	---	---	G	K	V	T	D	K	W	R	N	F	M	K	M	O	L	K	R	A	R	M	F	F	D	E	A	E	K	G	V	T	E	L	S	A	A	S	R	W	P	V	W	A	S	L	L	L				
Haematococcus	296	T	E	Q	D	V	L	G	A	V	H	V	P	S	O	G	K	V	S	E	K	W	R	A	F	M	K	F	Q	I	A	R	A	R	Q	C	F	A	D	E	S	G	V	D	O	L	E	A	K	A	R	W	P	V	W	S	A	L	I	L
Thalassiosira	402	T	E	R	Q	I	F	D	---	---	K	V	D	E	N	Y	I	N	L	M	K	F	E	I	A	R	A	R	M	Y	A	R	A	L	R	G	V	P	M	L	R	P	E	S	R	L	P	V	O	L	S	L	D	A						
Ectocarpus	390	D	P	E	N	I	M	N	---	---	G	I	L	D	S	N	Y	K	E	L	M	R	Y	Q	I	A	R	A	R	F	Y	Y	K	O	A	A	R	G	I	P	M	L	S	P	E	G	R	L	P	V	Q	A	S	L	D	M				
Chlamydomonas	278	S	E	K	E	L	L	T	G	L	H	A	P	T	G	A	M	D	D	R	W	R	N	F	M	H	F	Q	I	T	R	A	R	Q	Y	F	T	D	A	E	G	G	V	D	L	L	A	P	A	R	W	P	V	W	S	A	L	I	L	
Synechococcus	210	S	E	D	D	L	M	A	---	---	G	R	L	S	A	W	C	E	L	M	O	F	O	L	K	R	A	R	D	W	F	A	R	S	E	A	G	V	R	W	L	S	R	D	A	R	W	P	V	W	T	S	L	R	L					
Haliscomenobact	197	E	-----	D	K	L	K	I	E	S	D	-----	---	---	I	K	A	D	F	D	H	A	Y	T	G	I	V	O	L	P	K	G	V	R	F	G	V	Y	L	A	Y	V	Y																	
Pedobacter	197	V	-----	E	K	O	L	I	E	V	E	-----	---	---	I	E	A	E	F	K	E	A	L	A	G	I	K	O	L	P	S	S	S	R	S	G	V	Y	L	A	Y	I	Y																	
Fulvivirga	197	N	-----	T	K	O	K	I	E	S	-----	---	---	I	E	E	D	F	R	I	A	F	E	G	I	R	K	L	P	K	C	A	R	F	G	V	Y	L	S	Y	V																			
Haloquadratum	192	S	T	-----	A	O	I	L	N	L	E	F	D	E	N	V	R	A	V	I	O	H	E	O	Q	R	T	E	A	L	Y	R	E	G	V	K	G	I	O	Y	L	P	E	D	C	O	L	A	V	L	L	A	A	V	L					
Natrinema	191	D	P	-----	A	O	I	E	R	L	E	Y	S	E	S	F	A	G	A	M	A	E	L	K	R	T	E	E	L	Y	R	E	G	V	A	G	I	R	Y	L	P	E	D	C	O	L	A	V	L	L	A	A	V	L						
Cyclobacterium	20																																																											

KH105_crtIBY1	890	HIAFVWIGAVWASWLEWPGCSYLRFHGLFVVPPLMLARLAHQRAVADKQVPFLRRAGFW
KH105_crtIBY2	890	HIAFVWIGAVWASWLEWPGCSYLRFHGLFVIPPLLLARLAHQRAVADKQVPFLRRAGFW
Brevundimonas	310	I-----
Xanthophyllomyc	671	EGQ-----
Arabidopsis		-----
Haematococcus		-----
Thalassiosira	514	EKSLEQMLENKWVEQRGSSATSDYLQSLNK-----
Ectocarpus	496	KLTRFDKLEMERESFPAGEDDDQF-----
Chlamydomonas		-----
Synechococcus		-----
Haliscomenobact		-----
Pedobacter		-----
Fulvivirga		-----
Haloquadratum	304	YDDVDETDSDARHDRPNRGWSIGTEFVTQRFSNLVRHFTRGE-----
Natrinema	299	-----TADHDHRRH--PEHGDGVPTRS-----
Cyclobacterium		-----

KH105_crtIBY1	950	TLALCVVATLYTTPWDNFLVYRRVWGYPPERILFVIGYVPVEEYMFFTLETMLVAAVWLQ
KH105_crtIBY2	950	TLALCVVATLYTTPWDNFLVYRRVWGYPPERILFVIGYVPIEEYMFFTLETMLVAAVWLQ
Brevundimonas		-----
Xanthophyllomyc		-----
Arabidopsis		-----
Haematococcus		-----
Thalassiosira		-----
Ectocarpus		-----
Chlamydomonas		-----
Synechococcus		-----
Haliscomenobact		-----
Pedobacter		-----
Fulvivirga		-----
Haloquadratum		-----
Natrinema		-----
Cyclobacterium		-----

KH105_crtIBY1	1010	VFQPTTLQAEVGPGRGKGMVLVASLGLVWIAGLSCLASEQSLYIGLILTWAMPVLILQWS
KH105_crtIBY2	1010	VFQPTTLQAEVGPGRGKGMVLVASLGLVWMAGLSCLASEQSLYIGLILTWAMPVLILQWS
Brevundimonas		-----
Xanthophyllomyc		-----
Arabidopsis		-----
Haematococcus		-----
Thalassiosira		-----
Ectocarpus		-----
Chlamydomonas		-----
Synechococcus		-----
Haliscomenobact		-----
Pedobacter		-----
Fulvivirga		-----
Haloquadratum		-----
Natrinema		-----
Cyclobacterium		-----

KH105_crtIBY1	1070	LGAHVLTTHAKPVLTTIVSATAYLCVADAWAIRHGIWRINPANLVLPNGKYALPLEEALF
KH105_crtIBY2	1070	LGAHVLTTHAKPVLKTIVSATAYLCVADAWAIRHGIWRINPANLVLPNGKHALPLEEALF
Brevundimonas		-----
Xanthophyllomyc		-----
Arabidopsis		-----
Haematococcus		-----
Thalassiosira		-----
Ectocarpus		-----
Chlamydomonas		-----
Synechococcus		-----
Haliscomenobact		-----
Pedobacter		-----
Fulvivirga		-----
Haloquadratum		-----
Natrinema		-----
Cyclobacterium		-----

KH105_crtIBY1	1130	FLVTSIMCTWGLTLAMVLWGKPIGLAVGVGTWARPPRPGR	TQLITCGAVLVLSISHPALF
KH105_crtIBY2	1130	FLVTSIMCTWGLTLAMVLWGKPIGLAVGMGTWARPPRPGR	SQLITCGAVLVLSISHPALF
Brevundimonas		-----	-----
Xanthophyllomyc		-----	-----
Arabidopsis		-----	-----
Haematococcus		-----	-----
Thalassiosira		-----	-----
Ectocarpus		-----	-----
Chlamydomonas		-----	-----
Synechococcus		-----	-----
Haliscomenobact		-----	-----
Pedobacter		-----	-----
Fulvivirga		-----	-----
Haloquadratum		-----	-----
Natrinema		-----	-----
Cyclobacterium		-----	-----

KH105_crtIBY1	1190	KMVPALVVTIMRFGFWACALMAGVHLPARGRVLF	AAAVVAISCAPAALAPLLAGTVLVGT
KH105_crtIBY2	1190	KMVPALVVTIMRFGFWACALMAGVHLPARGRVLF	VAAVVAISCAPAALAPLLAGTVLVGT
Brevundimonas		-----	-----
Xanthophyllomyc		-----	-----
Arabidopsis		-----	-----
Haematococcus		-----	-----
Thalassiosira		-----	-----
Ectocarpus		-----	-----
Chlamydomonas		-----	-----
Synechococcus		-----	-----
Haliscomenobact		-----	-----
Pedobacter		-----	-----
Fulvivirga		-----	-----
Haloquadratum		-----	-----
Natrinema		-----	-----
Cyclobacterium		-----	-----

KH105_crtIBY1	1250	LGGWHTRDRDDTLPLYKNA
KH105_crtIBY2	1250	LGGWHTRDREDTLPLYKNA
Brevundimonas		-----
Xanthophyllomyc		-----
Arabidopsis		-----
Haematococcus		-----
Thalassiosira		-----
Ectocarpus		-----
Chlamydomonas		-----
Synechococcus		-----
Haliscomenobact		-----
Pedobacter		-----
Fulvivirga		-----
Haloquadratum		-----
Natrinema		-----
Cyclobacterium		-----