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Acrenar Pfumarii 1A AEM39338.1	M	NT	F	VKAW	RDV	NREPI	16
NAarchae a13 2 20CM 2 52 21 OLB69573.1	M	SI	T	DRLR	EAI	KPTPV	16
Bproteo Alipoferum 4B CBS85649.1	M	SI	F	SRLT	QEM	EDTLV	16
Bfirmic Gthermoleovorans AMV09772.1	M	SV	F	SRLK	RQC	EQEV	16
Bproteo Msp ST5810 ANG64508.1	M	SL	I	KRLS	DEM	RHKVA	16
Bplanct Psp SHPL14 AMV20944.1	M	PH	F	SRLT	REM	REGVA	16
Bactino Pacnes C1 AFU40489.1	M	GI	F	ARLS	QRQ	LDMLQ	16
Athauma CNitrososphaera Gargensis Ga92 AFU59479.1	M	GL	M	NRFS	IRQ	LEMLN	16
Aeuryar Nmagadii ATCC 43099 ADD05844.1	M	GI	L	SRTS	EQM	RDQLQ	16
Bproteo Aferrooxidans ATCC 23270 ACK79767.1	M	SI	F	KHAA	EKM	IANLQ	16
Bproteo Shalorespirans DSM 13726 A0066257.1	M	KF	Y	SRVS	REI	EKVAS	16
Bproteo Bcepacia ATCC 25416 ALK18953.1	M	SL	F	DSVS	REL	DDSTG	16
Bnitros Lferrooxidans C23 BAM07649.1	M	SL	Y	ERFR	RAL	DDKLQ	16
Bspiroc Tcaldarium DSM 7334 AEJ18398.1	M	GI	F	SRLK	IDM	NEQLI	16
Bgemmat Gphototrophica AMW04363.1	M	GI	F	DRLS	VDM	RNQLA	16
Bdeinoc Tthermophilus HB8 BAD69831.1	M	TL	W	DRLS	LDM	KQALR	16
Bchloro Caurantiacus J10f1 ABY35517.1	M	SI	L	GRIK	RQL	TNELY	16
Bacidob Gmallensis MP5ACTX8 AEU35097.1	M	SL	M	ERVA	LDM	ENQLL	16
Bthermo Tterrenum ATCC BAA798 ACZ42165.1	M	SI	I	ERIG	RDM	ASATA	16
Ealveol Vbrassicaformis CCMP3155 CEL99851.1	M	NF	I	DRAF	TDM	QSDLG	16
Estrame Aanophagefferens XP 009033281.1	M	NM	F	DRFK	DDL	QKDLV	16
Eviridi Vcarteri F Nagariensis XP 002949072.1	M	NL	F	SRVF	EEM	QEDMV	16
Bbacter Hsp DG25B AIZ65498.1	M	NL	F	NRIF	RDL	RQDLI	16
NAbacter bL21SpiD4 AL014006.1	M	GI	F	NRLF	RDM	KKDLI	16
Bproteo Dautotrophicum HRM2 ACN14859.1	M	SF	F	KRLF	RDL	KKDLT	16
Bchloro Cthalassium ATCC 35110 ACF15037.1	M	NL	F	KRIF	RDL	KNDLS	16
Baquifi Aaeolicus VF5 AAC07332.1	M	GL	L	KRLI	REL	RKQLK	16
Bthermo Mprima MesG1Ag42 AFK05994.1	M	GI	L	DRFN	REL	SEDLA	16
Bfusoba Lbuccalis C1013b ACV38698.1	M	SI	L	GRFK	RNM	ERDLN	16
Barmati Fginsengisoli Gsoil 348 AIE88136.1	M			KRFF	RDM	QGALV	13
Emetazo Bmori XP 004922821.1	M	WL	F	GHKM	TP	DEMLR	15
Emetazo Hsapiens NP 001231573.1				M			1
Eviridi Athaliana NP 001332586.1	M	NT	F	KKKT	TP	KDALR	15
Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1	M	KL	F	PRKG	QE		10
Bcyanob Hsp PCC 7418 AFZ44603.1					EM	QNSVE	7
Eparaba Tvaginalis G3 XP 001308534.1	M	WL	W	GKKK		KEPTV	13
Euuglen Tbrucei Gambiense DAL972 XP 011780226.1							0
Eamoebio Einvadens IP1 XP 004256843.1							0

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Acrenar Pfumarii 1A AEM39338.1	RY	KL	MV	V	KIK	AMVT	R	LEAH	IAR	LRR	DAM	L	FER	49	
NAarchae a13 2 20CM 2 52 21 OLB69573.1	KR	RI	QF	A	KLR	TQTN	R	LEKT	INQ	MEHR	DR	IL	HDK	49	
Bproteo Alipoferum 4B CBS85649.1	EV	RS	ST	V	.....	KII	.....	AEKK	.....	E	IERR	VAD	LHR	ER	DE	WRK	.....	49
Bfirmic Gthermoleovorans AMV09772.1	RV	RQ	LL	E	.....	RQY	.....	VLKE	.....	Q	FARE	HREA	EQM	VEKR	SK	Q	.....	49
Bproteo Msp ST5810 ANG64508.1	QA	RA	RL	N	.....	QMQ	.....	REEA	.....	Q	LQS	RIAAL	HEDE	QL	WA	ER	.....	49
Bplanct Psp SHPL14 AMV20944.1	GA	NR	SS	K	.....	TAA	.....	GNLS	.....	R	IELE	IGE	QTQ	QV	QW	LGR	.....	49
Bactino Pacnes C1 AFU40489.1	KV	RR	GV	A	.....	DVA	.....	TSRK	.....	R	VELQ	MNQL	QTD	V	DK	MQNA	.....	49
Athauma CNitrososphaera Gargensis Ga92 AFU59479.1	KV	RR	GL	A	.....	EII	.....	TSRK	.....	R	LEMQ	KSKL	WDN	IR	LL	DEQ	.....	49
Aeuryar Nmagadii ATCC 43099 ADD05844.1	EV	KR	GI	A	.....	DLT	.....	TQKK	.....	R	LEMQ	KRR	LEEN	VEKH	NEQ	.....	49	
Bproteo Aferrooxidans ATCC 23270 ACK79767.1	DT	KR	HL	A	.....	DVV	.....	TERI	.....	S	LENQ	MAQA	QKA	AD	K	ADAD	.....	49
Bproteo Shalorespirans DSM 13726 A0066257.1	DI	KL	EL	G	.....	KDV	.....	VKQK	.....	L	IKER	IDS	YN	AEHN	KLL	LAQ	.....	49
Bproteo Bcepacia ATCC 25416 ALK18953.1	RA	EN	SL	I	.....	EIE	.....	AQVA	.....	T	QRSK	RDA	ADD	KV	KY	EDG	.....	49
Bnitros Lferrooxidans C23 BAM07649.1	KA	QG	EL	V	.....	KAV	.....	AEIK	.....	L	LEQK	IRDD	ESQ	VAL	Y	QER	.....	49
Bspiroc Tcaldarium DSM 7334 AEJ18398.1	ES	KK	AV	A	.....	MAI	.....	ADEK	.....	K	LERE	TLN	QQA	QA	Q	EWERK	.....	49
Bgemmat Gphototrophica AMW04363.1	KA	KQ	QV	A	.....	AAI	.....	ADEK	.....	R	LKDQ	ADA	EFK	LAD	D	WEKR	.....	49
Bdeinoc Tthermophilus HB8 BAD69831.1	EA	RE	QV	A	EAL	AEQK	R	LERE	VE	SHERE	AAL	W	E	E	49
Bchloro Caurantiacus J10f1 ABY35517.1	EA	RT	GV	A	.....	QAM	.....	ADET	.....	R	LEQR	RIAA	E	GEA	E	QWIK	.....	49
Bacidob Gmallensis MP5ACTX8 AEU35097.1	QL	KT	QV	A	.....	IAI	.....	ADKH	.....	L	LEKK	SKE	QS	QTA	E	DWRLK	.....	49
Bthermo Tterrenum ATCC BAA798 ACZ42165.1	EA	RA	QV	A	EMI	AQEK	I	TEAN	LERN	RL	SLA	N	EW	RQK	49
Ealveol Vbrassiciformis CCMP3155 CEL99851.1	RI	KQ	SY	A	.....	EVT	.....	STQR	.....	R	GERQ	REAL	LEQ	V	Q	EWERR	.....	49
Estrame Aanophagefferens XP 009033281.1	TI	RQ	SY	A	EVM	ATQK	R	MQRQ	KDQ	AD	QLA	D	EYK	R	49
Eviridi Vcarteri F Nagariensis XP 002949072.1	RM	RQ	AT	A	.....	QVM	.....	ASQR	.....	Q	LMAK	QKSL	QGS	AD	Q	WLSR	.....	49
Bbacter Hsp DG25B AIZ65498.1	KA	LH	AL	A	.....	EVK	.....	ALTI	.....	R	SRND	AE	TERS	RAL	D	YENK	.....	49
NAbacter bL21SpiD4 AL014006.1	KS	LQ	AL	A	.....	EVK	.....	SLAI	.....	R	SRRE	ANEN	KEKA	EN	Y	EQK	.....	49
Bproteo Dautotrophicum HRM2 ACN14859.1	AA	MT	SL	A	.....	EVK	.....	GVAI	.....	R	TRKE	AD	KKKN	MA	Q	DYERK	.....	49
Bchloro Cthalassium ATCC 35110 ACF15037.1	QA	MQ	GL	A	.....	QVK	.....	ASAI	.....	R	LKKD	ADD	QNS	LAA	D	YERK	.....	49
Baquifi Aaeolicus VF5 AAC07332.1	EA	ME	AL	A	.....	QVK	.....	ASQI	.....	R	FERE	ARNE	KERA	K	ALV	KK	.....	49
Bthermo Mprima MesG1Ag42 AFK05994.1	EV	KR	GT	A	.....	GVI	.....	AEET	.....	R	TKRL	V	DENAA	E	VAK	YADF	.....	49
Bfusoba Lbuccalis C1013b ACV38698.1	SV	KS	ET	A	.....	AVM	.....	AQES	.....	A	AKRK	VIE	CEDE	I	KK	MDTY	.....	49
Barmati Fginsengisoli Gsoil 348 AIE88136.1	SN	KE	RA	V	.....	QAI	.....	TQKN	.....	R	LQMM	LD	DER	KKAA	Q	LESQ	.....	46
Emetazo Bmori XP 004922821.1	KN	QR	AL	N	.....	KAM	.....	RDLD	.....	R	ERMK	ME	Q	Q	KK	VIAD	.....	45
Emetazo Hsapiens NP 001231573.1								EL		E								4	
Eviridi Athaliana NP 001332586.1	TS	KR	E			M		AVAT		R	IERE	ITS	L	Q	LEE	KRLVAE		44	
Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1		KE	KI	A		ELK		ATIN		R	IELK	SR	Q	FR	Q	KANVMRVN		41	
Bcyanob Hsp PCC 7418 AFZ44603.1	QL	TQ	AV	T		VQV		NNYQ		Q	AEERY	SAK	V	Q	E	F	KDLET	K	40
Eparaba Tvaginalis G3 XP 001308534.1	NA	QT	AG	E		KNA		ETIE		M	MNKK	IE	Q	L	D	RQAENMAKE		46	
Euuglen Tbrucei Gambiense DAL972 XP 011780226.1	RP	NS	SL	E		ELQ		SKLE		L	LEK	REG	VLT	KK	V	E	DELAK		33
Eamoebo Einvadens IP1 XP 004256843.1	RQ	KK	AV	A		KTQ		ERIK		F	LK	LK	I	D	H	D	QIISEELKL		33

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 Bproteo Alipoferum 4B CBS85649.1
 Bfirmic Gthermoleovorans AMV09772.1
 Bproteo Msp ST5810 ANG64508.1
 Bplanct Psp SHPL14 AMV20944.1
 Bactino Pacnes C1 AFU40489.1
 Athauma CNitrososphaera Gargensis Ga92 AFU59479.1
 Aeuryar Nmagadii ATCC 43099 ADD05844.1
 Bproteo Aferrooxidans ATCC 23270 ACK79767.1
 Bproteo Shalorespirans DSM 13726 A0066257.1
 Bproteo Bcepacia ATCC 25416 ALK18953.1
 Bnitros Lferrooxidans C23 BAM07649.1
 Bspiroc Tcaldarium DSM 7334 AEJ18398.1
 Bgemmat Gphototrophica AMW04363.1
 Bdeinoc Tthermophilus HB8 BAD69831.1
 Bchloro Caurantiacus J10f1 ABY35517.1
 Bacidob Gmallensis MP5ACTX8 AEU35097.1
 Bthermo Tterrenum ATCC BAA798 ACZ42165.1
 Ealveol Vbrassicaformis CCMP3155 CEL99851.1
 Estrame Aanophagefferens XP 009033281.1
 Eviridi Vcarteri F Nagariensis XP 002949072.1
 Bbacter Hsp DG25B AIZ65498.1
 NAbacter bL21SpiD4 AL014006.1
 Bproteo Dautotrophicum HRM2 ACN14859.1
 Bchloro Cthalassium ATCC 35110 ACF15037.1
 Baquifi Aaeolicus VF5 AAC07332.1
 Bthermo Mprima MesG1Ag42 AFK05994.1
 Bfusoba Lbuccalis C1013b ACV38698.1
 Barmati Fginsengisoli Gsoil 348 AIE88136.1
 Emetazo Bmori XP 004922821.1
 Emetazo Hsapiens NP 001231573.1
 Eviridi Athaliana NP 001332586.1
 Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1
 Bcyanob Hsp PCC 7418 AFZ44603.1
 Eparaba Tvaginalis G3 XP 001308534.1
 Eeuglen Tbrucei Gambiense DAL972 XP 011780226.1
 Eamoebo Einvadens IP1 XP 004256843.1

VVE	AL	QQG	D	KQRAA	VY	AT	EVAEIRKAIKQLMIV	82
CVK	AL	EVR	D	TQSAT	LF	AN	ECVQIRKLIKTSLS	82
AEV	AL	TRD	R	EDLAK	GA	LM	AKSKVAEQADALAEQ	82
AEV	AA	QAG	E	MELAE	FA	RR	EQAQYAERAARLKQL	82
AKS	CA	ST	D	PTRAL	AC	TE	RRQQCRSQAHLAQG	81
ARE	AL	AAE	D	EENAR	QA	LL	RKREHESLLAGLEQQ	82
ASR	AL	EQG	R	EDLAR	EA	LT	RKATLQAQLNDLQTT	82
ASR	AL	DAG	R	EDLAR	LA	LE	RKNTNLLQIQDLQDK	82
ART	AV	QQD	R	EDLAR	RA	LE	KKKTKMNQIEDLERQ	82
ARV	AL	GAN	R	EDLAR	AE	LA	QKQSELQKIASLKEA	82
VKI	AL	KED	R	EDLAE	AG	LA	EQISIEEKIKANQVQ	82
AKR	AL	QAG	D	EALAR	EA	LG	AQSNAAERDALAAE	82
AEK	AV	KAG	N	DDLAK	RA	LV	EKSRLSADLSEMTTR	82
AML	AV	RAG	Q	DDLAK	EA	LL	RKQEYENNYVEYKKQ	82
AML	AV	QEG	R	DDLAK	QA	LM	RGQEHLEHGQQLAAT	82
ARE	AL	KAG	R	EDLAR	EA	LR	RKKRALDLAEGFKAQ	82
AER	AL	RAG	D	EALAK	AA	LA	RKVQAQKLAEQYRAQ	82
AEL	AV	TKG	K	DDLAR	AA	LD	RALTHEKMGADLLHQ	82
AEL	AV	QKG	R	DDLAR	EA	LR	RYNDYLENASVYEQQ	82
AQL	AV	SKG	R	DDMAR	EA	LQ	RRVVLTTKVQGLDEQ	82
AQL	AL	EKG	D	DELAR	EA	LS	RKTQQTDAAGLDEQ	82
AEL	AV	ARG	Q	DDLAR	EA	LK	RRKVLQEDADRMNEQ	82
AVL	LL	QKA	H	DRLAT	EA	LL	KKNQHETQSSRAAQD	82
AIL	LI	EKG	D	DRLAT	EA	LS	RKEESINAAARAQSE	82
AML	LL	QKM	Q	ERLAT	EA	LN	LKEQSLAESVRIQTE	82
AML	LL	QKG	E	ERLAT	EA	LS	RKEEASQRSKTLMS	82
AES	LL	QEG	K	EKLAA	EL	IQ	KAELHEKNARRLEEE	82
AKR	AL	LAK	N	DGDAR	VF	IA	KKQELENVAGLMTA	82
ARK	AL	KSG	N	ESDAR	LF	LE	KKATLQTKLESLLND	82
ATM	AL	KQG	D	RELAT	QF	MR	EKMNHDAITATLQSS	79
IKK	LA	KEG	Q	MDAVK	IM	AK	DLVRTRRYVRKFMML	78
IKK	MA	KIG	N	KEACK	VL	AK	QLVHLRKKQKTRTF	37
IKK	TA	KTG	N	EAATK	IL	AR	QLVRLRQQITNLQGS	77
AKK	AL	KVG	D	KEGAR	NL	LV	RWKYKTNLDYQNI	74
AKT	LK	AQG	N	TEAAR	LT	MI	QAIQLEKILPQLKEN	73
AKA	AM	AKK	N	KKKAL	EC	MK	RKKMYENQSTKFSQM	79
ARE	FY	SKK	N	KSMAL	QC	MK	RKKMAEDELTKIACQ	66
SKQ	CY	INN	D	KEGAT	VH	LK	KKKMYEKAVSETQNF	66

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Acrenar Pfumarii 1A AEM39338.1	KLAL EQVSLRLE	AA	96
NAarchae a13 2 20CM 2 52 21 OLB69573.1	QISL EQVLLRLE	HS	96
Bproteo Alipoferum 4B CBS85649.1	LVQ VEAALS KAN.....	ED	96
Bfirmic Gthermoleovorans AMV09772.1	LEQASREL FELE	AK	96
Bproteo Msp ST5810 ANG64508.1	LISYRQSAARLS.....	RD	95
Bplanct Psp SHPL14 AMV20944.1	LGAARSTRDHMT.....	CT	96
Bactino Pacnes C1 AFU40489.1	HATLQAE EEKLI	RG	96
Athauma CNitrososphaera Gargensis Ga92 AFU59479.1	IAELQ EEARKME	EA	96
Aeuryar Nmagadii ATCC 43099 ADD05844.1	ISELQNQQDQLI.....	DQ	96
Bproteo Aferrooxidans ATCC 23270 ACK79767.1	HDTVAAQA QKLT	DY	96
Bproteo Shaloespirans DSM 13726 A0066257.1	MDALQ KEITTYQ	EY	96
Bproteo Bcepacia ATCC 25416 ALK18953.1	LSTLEPSVD KLK	GQ	96
Bnitros Lferrooxidans C23 BAM07649.1	RDEQ QKV VSEIE.....	GD	96
Bspiroc Tcaldarium DSM 7334 AEJ18398.1	WEAQKAS VEKLK	ES	96
Bgemmat Gphototrophica AMW04363.1	WEAHK METEKLK	QS	96
Bdeinoc Tthermophilus HB8 BAD69831.1	LSEHKAL TERLM	TQ	96
Bchloro Caurantiacus J10f1 ABY35517.1	EKAQ EEQVEALQ	QA	96
Bacidob Gmallensis MP5ACTX8 AEU35097.1	VEEQ T EEVEGMR.....	MT	96
Bthermo Tterrenum ATCC BAA798 ACZ42165.1	LDAQRK IVDKLK	NE	96
Ealveol Vbrassicaformis CCMP3155 CEL99851.1	LRIQ KEALLQLR	SS	96
Estrame Aanophagefferens XP 009033281.1	IAVQ TD SLAKLY.....	DS	96
Eviridi Vcarteri F Nagariensis XP 002949072.1	VALQ TNALEQLQ	AN	96
Bbacter Hsp DG25B AIZ65498.1	QEK F ETSAQQLS.....	QN	96
NAbacter bL21SpiD4 ALO14006.1	VEK FDDN IAKLQ.....	AN	96
Bproteo Dautotrophicum HRM2 ACN14859.1	ATAHEQRAAGLQ.....	TQ	96
Bchloro Cthalassium ATCC 35110 ACF15037.1	HQGGQ EMADQLQ	AK	96
Baquifi Aaeolicus VF5 AAC07332.1	AKRQ REMAV KLQ.....	AK	96
Bthermo Mprima MesG1Ag42 AFK05994.1	YAAAH ENAV KMR.....	QM	96
Bfusoba Lbuccalis C1013b ACV38698.1	KEVAAQ NAL KMR.....	EM	96
Barmati Fginsengisoli Gsoil 348 AIE88136.1	YEQAVAT VDQVK	IA	93
Emetazo Bmori XP 004922821.1	KANIQAVSL KIQ	TL	92
Emetazo Hsapiens NP 001231573.1	SSK V TSMS TQTK	VM	51
Eviridi Athaliana NP 001332586.1	RAQIRGV TTHTQ	AL	91
Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1	VGRI ERHLEALE	NV	88
Bcyanob Hsp PCC 7418 AFZ44603.1	VENA EKFVQA AK.....	EQ	87
Eparaba Tvaginalis G3 XP 001308534.1	RDNLEAQV ITLQ	QA	93
Euuglen Tbrucei Gambiense DAL972 XP 011780226.1	KQNLDTL IFTLQ	NQ	80
Eamoebo Einvadens IP1 XP 004256843.1	IIN LESQILEIE	N.	79

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Acrenar Pfumarii 1A AEM39338.1	IA..P.LA.....GITH EL KAYV.....	111
NAarchae a13 2 20CM 2 52 21 OLB69573.1	MG..S.VR.....GILTTV KNE	110
Bproteo Alipoferum 4B CBS85649.1	IG..R.LQ.....AKLTDA KTRE	111
Bfirmic Gthermoleovorans AMV09772.1	YE..E.MK.....HKLKDMQMRR.....	111
Bproteo Msp ST5810 ANG64508.1	VT..D.SE.....TRLHSLNNRH.....	110
Bplanct Psp SHPL14 AMV20944.1	LH..A.LE.....ARLADALRRK.....	111
Bactino Pacnes C1 AFU40489.1	SQ..R.LQ.....ARVDAFR TKK	111
Athauma CNitrososphaera Gargensis Ga92 AFU59479.1	EK..R.MA.....VKVEEF KSKK	111
Aeuryar Nmagadii ATCC 43099 ADD05844.1	KD..E.LQ.....NRIEEFRT KK	111
Bproteo Aferrooxidans ATCC 23270 ACK79767.1	ES..K.LQ.....DHIEQFRT QK	111
Bproteo Shalorespirans DSM 13726 A0066257.1	LD..K.LS.....AKKKDM DSEL	111
Bproteo Bcepacia ATCC 25416 ALK18953.1	IA..D.MR.....QRRNDLNARS.....	111
Bnitros Lferrooxidans C23 BAM07649.1	LS..K.LR.....DMHDEFAR KQ	111
Bspiroc Tcaldarium DSM 7334 AEJ18398.1	LK..E.LQ.....NKIEEAQR KK	111
Bgemmat Gphototrophica AMW04363.1	LR..D.LN.....DKIEEA KRKK	111
Bdeinoc Tthermophilus HB8 BAD69831.1	LK..A.LE.....AKIDEAE ARK	111
Bchloro Caurantiacus J10f1 ABY35517.1	LI..D.LE.....TRIAEV KARK	111
Bacidob Gmallensis MP5ACTX8 AEU35097.1	YN..K.LQ.....GK LKET QAHC.....	111
Bthermo Tterrenum ATCC BAA798 ACZ42165.1	LQ..A.LE.....SKYEDARR NR	111
Ealveol Vbrassiciformis CCMP3155 CEL99851.1	MR..T.LE.....GKILEAR SKK	111
Estrame Aanophagefferens XP 009033281.1	MT..Q.LE.....SKISEAK SMK	111
Eviridi Vcarteri F Nagariensis XP 002949072.1	IR..V.LE.....GKMTEAR GKK	111
Bbacter Hsp DG25B AIZ65498.1	VQ..Q.LK.....QTISQWD NEL	111
NAbacter bL21SpiD4 AL014006.1	IN..K.LK.....SQISHY ENEL	111
Bproteo Dautotrophicum HRM2 ACN14859.1	VS..K.LK.....STITSYD NDL	111
Bchloro Cthalassium ATCC 35110 ACF15037.1	VQ..K.LK.....QTITKY ENEL	111
Baquifi Aaeolicus VF5 AAC07332.1	ID..E.LK.....VQIAKYEA EL	111
Bthermo Mprima MesG1Ag42 AFK05994.1	HD..K.LV.....SDIESL KNRR	111
Bfusoba Lbuccalis C1013b ACV38698.1	HD..K.LA.....SDIQKLS AKR	111
Barmati Fginsengisoli Gsoil 348 AIE88136.1	IK..R.QE.....EEVRKKT AEA	108
Emetazo Bmori XP 004922821.1	KS..Q.ST.....MA.....Q.....	100
Emetazo Hsapiens NP 001231573.1	NS..Q.MK.....MA.....G.....	59
Eviridi Athaliana NP 001332586.1	YA..S.TS.....IS.....S.....	99
Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1	MG..K.SA.....KTLEKIST NI	103
Bcyanob Hsp PCC 7418 AFZ44603.1	LT..R.EK.....EKLETY KSEL	102
Eparaba Tvaginalis G3 XP 001308534.1	FN..Q.YA.....MNTKA IKTEL	108
Euuglen Tbrucei Gambiense DAL972 XP 011780226.1	TM..N.ME.....VLAAQ KRAK	94
Eamoebo Einvadens IP1 XP 004256843.1LR..AK.....	83

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Acrenar Pfumarii 1A AEM39338.1	111
NAarchae a13 2 20CM 2 52 21 OLB69573.1	110
Bproteo Alipoferum 4B CBS85649.1	111
Bfirmic Gthermoleovorans AMV09772.1	111
Bproteo Msp ST5810 ANG64508.1	110
Bplanct Psp SHPL14 AMV20944.1	111
Bactino Pacnes C1 AFU40489.1	111
Athauma CNitrososphaera Gargensis Ga92 AFU59479.1	111
Aeuryar Nmagadii ATCC 43099 ADD05844.1	111
Bproteo Aferrooxidans ATCC 23270 ACK79767.1	111
Bproteo Shalorespirans DSM 13726 A0066257.1	111
Bproteo Bcepacia ATCC 25416 ALK18953.1	111
Bnitros Lferrooxidans C23 BAM07649.1	111
Bspiroc Tcaldarium DSM 7334 AEJ18398.1	111
Bgemmat Gphototrophica AMW04363.1	111
Bdeinoc Tthermophilus HB8 BAD69831.1	111
Bchloro Caurantiacus J10f1 ABY35517.1	111
Bacidob Gmallensis MP5ACTX8 AEU35097.1	111
Bthermo Tterrenum ATCC BAA798 ACZ42165.1	111
Ealveol Vbrassicaformis CCMP3155 CEL99851.1	111
Estrame Aanophagefferens XP 009033281.1	111
Eviridi Vcarteri F Nagariensis XP 002949072.1	111
Bbacter Hsp DG25B AIZ65498.1	111
NAbacter bL21SpiD4 AL014006.1	111
Bproteo Dautotrophicum HRM2 ACN14859.1	111
Bchloro Cthalassium ATCC 35110 ACF15037.1	111
Baquifi Aaeolicus VF5 AAC07332.1	111
Bthermo Mprima MesG1Ag42 AFK05994.1	111
Bfusoba Lbuccalis C1013b ACV38698.1	111
Barmati Fginsengisoli Gsoil 348 AIE88136.1	108
Emetazo Bmori XP 004922821.1	100
Emetazo Hsapiens NP 001231573.1	59
Eviridi Athaliana NP 001332586.1	99
Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1	103
Bcyanob Hsp PCC 7418 AFZ44603.1	102
Eparaba Tvaginalis G3 XP 001308534.1	108
Euuglen Tbrucei Gambiense DAL972 XP 011780226.1	94
Eamoebos Einvadens IP1 XP 004256843.1	83

Logo		Lk	RGVM	PML	SLE	
Acrenar Pfumarii 1A AEM39338.1	.	LEG	.	.	.	121
NAarchae a13 2 20CM 2 52 21 OLB69573.1	.	KALV	.	ART	QTA	114
Bproteo Alipoferum 4B CBS85649.1	.	MELM	.	GRE	NAA	121
Bfirmic Gthermoleovorans AMV09772.1	.	SIMR	.	ARQ	SGT	120
Bplanct Psp SHPL14 AMV20944.1	.	ADLE	.	.	G.	116
Bactino Pacnes C1 AFU40489.1	.	ETIK	.	ATY	SAA	121
Athauma CNitrososphaera Gargensis Ga92 AFU59479.1	.	EVIK	.	ARY	SAA	121
Aeuryar Nmagadii ATCC 43099 ADD05844.1	.	ETMK	.	ARY	EAA	121
Bproteo Aferrooxidans ATCC 23270 ACK79767.1	.	EVTK	.	SEM	AAA	121
Bproteo Shalorespirans DSM 13726 A0066257.1	.	KALS	.	.	SKP	118
Bproteo Bcepacia ATCC 25416 ALK18953.1	.	NILQ	.	AKQ	EIA	121
Bnitros Lferrooxidans C23 BAM07649.1	.	SMLS	.	LRE	ERA	121
Bspirot Tcaldarium DSM 7334 AEJ18398.1	.	NLLI	.	ARA	KRA	121
Bgemmat Gphototrophica AMW04363.1	.	NLIL	.	ARQ	RRA	121
Bdeinoc Tthermophilus HB8 BAD69831.1	.	KLLL	.	ARK	KGV	121
Bchloro Caurantiacus J10f1 ABY35517.1	.	ELII	.	AKK	NRA	121
Bacidob Gmallensis MP5ACTX8 AEU35097.1	.	VLLI	.	AQH	RRA	121
Bthermo Tterrenum ATCC BAA798 ACZ42165.1	.	EVL I	.	ARH	KRA	121
Ealveol Vbrassicaformis CCMP3155 CEL99851.1	.	EQLI	.	ARA	RTA	121
Estrame Aanophagefferens XP 009033281.1	.	DQYI	.	ARA	RTA	121
Eviridi Vcarteri F Nagariensis XP 002949072.1	.	ETLK	.	ARA	ASA	121
Bbacter Hsp DG25B AIZ65498.1	.	KTLK	.	ARV	TVS	121
NAbacter bL21SpiD4 AL014006.1	.	KTLK	.	ARD	RVS	121
Bproteo Dautotrophicum HRM2 ACN14859.1	.	ITLK	.	ARA	RTA	121
Bchloro Cthalassium ATCC 35110 ACF15037.1	.	ITLK	.	ARA	RTA	121
Baquifi Aaeolicus VF5 AAC07332.1	.	KTLK	.	ARL	ATA	121
Bthermo Mprima MesG1Ag42 AFK05994.1	.	AMIK	.	AKV	AVA	121
Bfusoba Lbuccalis C1013b ACV38698.1	.	SEIK	.	AKM	KMA	121
Barmati Fginsengisoli Gsoil 348 AIE88136.1	.	LAMK	.	AQW	KQA	118
Emetazo Bmori XP 004922821.1	.	AMK	.	.	GVT	106
Emetazo Hsapient NP 001231573.1	.	AMS	.	.	TTA	65
Eviridi Athaliana NP 001332586.1	.	GMK	.	.	GAT	105
Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1	.	SPEK	.	AME	ISE	113
Bcyanob Hsp PCC 7418 AFZ44603.1	.	ANMQ	.	AIQ	EVN	112
Eparaba Tvaginalis G3 XP 001308534.1	.	AGFD	.	.	.	112
Euuglen Tbrucei Gambiense DAL972 XP 011780226.1	.	DELK	.	.	.	98
Eamoebio Einvadens IP1 XP 004256843.1	83

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Acrenar Pfumarii 1A AEM39338.1					
NAarchae a13 2 20CM 2 52 21 OLB69573.1	DL.E	ET	LN.SIV	TS	133
Bproteo Alipoferum 4B CBS85649.1	LPE	IST			120
Bfirmic Gthermoleovorans AMV09772.1	SN.R	VK	VR.TVL	ER	133
Bproteo Msp ST5810 ANG64508.1	RA.H	CR	IH.RVV	GD	133
Bplanct Psp SHPL14 AMV20944.1	AA.R	VA	TA.DSE	SS	132
Bactino Pacnes C1 AFU40489.1		VE	EPV	CA	123
Athauma CNitrososphaera Gargensis Ga92 AFU59479.1	EA.Q	TR	IN.EAF	TG	133
Aeuryar Nmagadii ATCC 43099 ADD05844.1	EA.Q	VK	IK.ESV	TG	133
Bproteo Aferrooxidans ATCC 23270 ACK79767.1	EA.S	ST	VS.EAM	EE	133
Bproteo Shalorespirans DSM 13726 A0066257.1	QA.E	VK	VS.ESL	NG	133
Bproteo Bcepacia ATCC 25416 ALK18953.1	NA		ID.SLA	DK	127
Bnitros Lferrooxidans C23 BAM07649.1	QA.K	DV	AA.SAL	GG	133
Bspiroc Tcaldarium DSM 7334 AEJ18398.1	QA.S	QE	VN.SIR	AE	133
Bgemmat Gphototrophica AMW04363.1	EA.Q	QK	IQ.NTI	SN	133
Bdeinoc Tthermophilus HB8 BAD69831.1	EA.Q	AR	IS.QTM	SG	133
Bchloro Caurantiacus J10f1 ABY35517.1	EA.A	ET	VR.RME	SR	133
Bacidob Gmallensis MP5ACTX8 AEU35097.1	QT.Q	EA	LQ.RTA	AS	133
Bthermo Tterrenum ATCC BAA798 ACZ42165.1	QM.A	KA	IT.ARE	EQ	133
Ealveol Vbrassicaformis CCMP3155 CEL99851.1	ET.Q	RK	VA.TIS	AQ	133
Estrame Aanophagefferens XP 009033281.1	KT.A	QQ	IQ.DML	GG	133
Eviridi Vcarteri F Nagariensis XP 002949072.1	KT.A	TK	VN.DML	SD	133
Bbacter Hsp DG25B AIZ65498.1	KT.S	LA	LQ.EMI	GG	133
NAbacter bL21SpiD4 AL014006.1	TA.T	KT	IN.QQL	AQ	133
Bproteo Dautotrophicum HRM2 ACN14859.1	KA.T	SK	IN.KSM	SN	133
Bchloro Cthalassium ATCC 35110 ACF15037.1	HS.T	KK	IN.AQL	AN	133
Baquifi Aaeolicus VF5 AAC07332.1	ES.M	KK	IN.KQL	ST	133
Bthermo Mprima MesG1Ag42 AFK05994.1	RA.V	KK	VN.KQI	AK	133
Bfusoba Lbuccalis C1013b ACV38698.1	KT.Q	KK	IN.EVS	SS	133
Barmati Fginsengisoli Gsoil 348 AIE88136.1	KT.S	ER	IS.SLS	AG	133
Emetazo Bmori XP 004922821.1	QI.Q	NS	IS.KAL	EG	130
Emetazo Hsapiens NP 001231573.1	RA.M	AT	MN.RQL	PQ	118
Eviridi Athaliana NP 001332586.1	KT.M	QA	VN.KKM	KT	77
Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1	KA.M	VA	MN.KQM	AQ	117
Bcyanob Hsp PCC 7418 AFZ44603.1	GA.E	ES	IS.KIE	GD	125
Eparaba Tvaginalis G3 XP 001308534.1	QA.L	SQ	MA.AVN	NN	124
Euuglen Tbrucei Gambiense DAL972 XP 011780226.1	A	DK	ID.EIR	EE	122
Eamoebo Einvadens IP1 XP 004256843.1	L		VN.KKM	NT	106
		KK	VS.DSM	KD	92

Acnrean Pfumarii 1A AEM39338.1
 NAarchae a13 2 20CM 2 52 21 OLB69573.1
 Bproteo Alipoferum 4B CBS85649.1
 Bfirmic Gthermoleovorans AMV09772.1
 Bproteo Msp ST5810 ANG64508.1
 Bplanct Psp SHPL14 AMV20944.1
 Bactino Pacnes C1 AFU40489.1
 Athauma CNitrososphaera Gargensis Ga92 AFU59479.1
 Aeuryar Nmagadii ATCC 43099 ADD05844.1
 Bproteo Aferrooxidans ATCC 23270 ACK79767.1
 Bproteo Shalorespirans DSM 13726 A0066257.1
 Bproteo Bcepacia ATCC 25416 ALK18953.1
 Bnitros Lferrooxidans C23 BAM07649.1
 Bspiroc Tcaldarium DSM 7334 AEJ18398.1
 Bgemmat Gphototrophica AMW04363.1
 Bdeinoc Tthermophilus HB8 BAD69831.1
 Bchlro Caurantiacus J10f1 ABY35517.1
 Bacidob Gmallensis MP5ACTX8 AEU35097.1
 Bthermo Tterrenum ATCC BAA798 ACZ42165.1
 Ealveol Vbrassicaferris CCMCP3155 CEL99851.1
 Estrame Aanophagefferens XP 009033281.1
 Eviridi Vcarteri F Nagariensis XP 002949072.1
 Bbacter Hsp DG25B AIZ65498.1
 NAbacter bL21SpiD4 AL014006.1
 Bproteo Dautotrophicum HRM2 ACN14859.1
 Bchlro Cthallassium ATCC 35110 ACF15037.1
 Baquifi Aaeolicus VF5 AAC07332.1
 Bthermo Mprima MesG1Ag42 AFK05994.1
 Bfusoba Lbuccalis C1013b ACV38698.1
 Barmati Fginsengisoli Gsoil 348 AIE88136.1
 Emetazo Bmori NP 004922821.1
 Emetazo Hsapient NP 001231573.1
 Eviridi Athaliana NP 001332586.1
 Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1
 Bcyanob Hsp PCC 7418 AFZ44603.1
 Eparaba TVaginalis G3 XP 001308534.1
 Eeuglen Tbrucei Gambiensis DAL972 XP 011780226.1
 Eamoebio Einvadens IP1 XP 004256843.1

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Acrenar Pfumarii 1A AEM39338.1	AA	ASG	140
NAarchae a13 2 20CM 2 52 21 OLB69573.1		G.H	122
Bproteo Alipoferum 4B CBS85649.1	VER	NLDE	151
Bfirmic Gthermoleovorans AMV09772.1	AEV	YLDL	151
Bproteo Msp ST5810 ANG64508.1	WDV	RLSE	150
Bplanct Psp SHPL14 AMV20944.1	I		126
Bactino Pacnes C1 AFU40489.1	AED	KTME	151
Athauma CNitrososphaera Gargensis Ga92 AFU59479.1	AEE	KTES	151
Aeuryar Nmagadii ATCC 43099 ADD05844.1	AEE	QTED	151
Bproteo Aferrooxidans ATCC 23270 ACK79767.1	AQD	RTRQ	151
Bproteo Shalorespirans DSM 13726 A0066257.1	V		138
Bproteo Bcepacia ATCC 25416 ALK18953.1	LED	KVAL	151
Bnitros Lferrooxidans C23 BAM07649.1	MTD	KIDM	151
Bspiroc Tcaldarium DSM 7334 AEJ18398.1	MAQ	KVDQ	151
Bgemmat Gphototrophica AMW04363.1	MEE	KITS	151
Bdeinoc Tthermophilus HB8 BAD69831.1	MEA	RILA	151
Bchloro Caurantiacus J10f1 ABY35517.1	LEE	KVDD	151
Bacidob Gmallensis MP5ACTX8 AEU35097.1	VKA	RIQS	151
Bthermo Tterrenum ATCC BAA798 ACZ42165.1	MEE	RIRL	151
Ealveol Vbrassicaformis CCMP3155 CEL99851.1	MRE	RVEA	151
Estrame Aanophagefferens XP 009033281.1	MKE	KVEM	151
Eviridi Vcarteri F Nagariensis XP 002949072.1	MEE	KVAQ	151
Bbacter Hsp DG25B AIZ65498.1	MKE	KVAT	151
NAbacter bL21SpiD4 ALO14006.1	MKE	KVDQ	151
Bproteo Dautotrophicum HRM2 ACN14859.1	MKA	KVEE	151
Bchloro Cthalassium ATCC 35110 ACF15037.1	MKD	KVKE	151
Baquifi Aaeolicus VF5 AAC07332.1	MKE	KVEE	151
Bthermo Mprima MesG1Ag42 AFK05994.1	LEE	KAQK	150
Bfusoba Lbuccalis C1013b ACV38698.1	MEE	KANR	151
Barmati Fginsengisoli Gsoil 348 AIE88136.1	AQE	RIRE	148
Emetazo Bmori XP 004922821.1	QSE	IMDM	135
Emetazo Hsapiens NP 001231573.1	MK	ME	92
Eviridi Athaliana NP 001332586.1	KS	L	128
Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1		L	136
Bcyanob Hsp PCC 7418 AFZ44603.1	AKE	AVSD	142
Eparaba Tvaginalis G3 XP 001308534.1	MTD	ILAQ	140
Euuglen Tbrucei Gambiense DAL972 XP 011780226.1		V	117
Eamoebo Einvadens IP1 XP 004256843.1	VDV	KVEE	110

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Acrenar Pfumarii 1A AEM39338.1EARK.....	144
NAarchae a13 2 20CM 2 52 21 OLB69573.1D..I.....	124
Bproteo Alipoferum 4B CBS85649.1	.....EGRVE.....	156
Bfirmic Gthermoleovorans AMV09772.1	.....ERQVR.....	156
Bproteo Msp ST5810 ANG64508.1	.....ELRMG.....	155
Bplanct Psp SHPL14 AMV20944.1	.....G.....	127
Bactino Pacnes C1 AFU40489.1	.....QARAG.....	156
Athauma CNitrososphaera Gargensis Ga92 AFU59479.1	.....RAKAQ.....	156
Aeuryar Nmagadii ATCC 43099 ADD05844.1	.....EARAA.....	156
Bproteo Aferrooxidans ATCC 23270 ACK79767.1	.....EAKAV.....	156
Bproteo Shalorespirans DSM 13726 A0066257.1	.....	138
Bproteo Bcepacia ATCC 25416 ALK18953.1	.....NARSD.....	156
Bnitros Lferrooxidans C23 BAM07649.1	.....EAQAQ.....	156
Bspiroc Tcaldarium DSM 7334 AEJ18398.1	.....EAEAD.....	156
Bgemmat Gphototrophica AMW04363.1	.....ERQLQ.....	156
Bdeinoc Tthermophilus HB8 BAD69831.1	.....EDRHQ.....	156
Bchloro Caurantiacus J10f1 ABY35517.1	.....LARAE.....	156
Bacidob Gmallensis MP5ACTX8 AEU35097.1	.....EAHNY.....	156
Bthermo Tterrenum ATCC BAA798 ACZ42165.1	.....EARAE.....	156
Ealveol Vbrassicaformis CCMP3155 CEL99851.1	.....EAKVE.....	156
Estrame Aanophagefferens XP 009033281.1	.....ETQAE.....	156
Eviridi Vcarteri F Nagariensis XP 002949072.1	.....EAQAQ.....	156
Bbacter Hsp DG25B AIZ65498.1	.....EALAE.....	156
NAbacter bL21SpiD4 AL014006.1	.....EAMAE.....	156
Bproteo Dautotrophicum HRM2 ACN14859.1	.....ESLAQ.....	156
Bchloro Cthalassium ATCC 35110 ACF15037.1	.....ESLAE.....	156
Baquifi Aaeolicus VF5 AAC07332.1	.....ETLAQ.....	156
Bthermo Mprima MesG1Ag42 AFK05994.1	M.....LD..EAN.....	156
Bfusoba Lbuccalis C1013b ACV38698.1	.....EANAK.....	156
Barmati Fginsengisoli Gsoil 348 AIE88136.1	.....QSEAA.....	153
Emetazo Bmori XP 004922821.1	.....K.....	136
Emetazo Hsapiens NP 001231573.1	.....E.....	93
Eviridi Athaliana NP 001332586.1	.....	128
Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1	.....EADLL.....	141
Bcyanob Hsp PCC 7418 AFZ44603.1	.....QAEVQ.....	147
Eparaba Tvaginalis G3 XP 001308534.1	.....GADAA.....	145
Euuglen Tbrucei Gambiense DAL972 XP 011780226.1	.....NA.....	119
Eamoeb Einvadens IP1 XP 004256843.1	.....	110

Acetab Pfumarii 1A AEM39338.1
 NAarchae a13 2 20CM 2 52 21 OLB69573.1
 Bproteo Alipoferum 4B CBS85649.1
 Bfirmic Gthermoleovorans AMV09772.1
 Bproteo Msp ST5810 ANG64508.1
 Bplanct Psp SHPL14 AMV20944.1
 Bactino Pacnes C1 AFU40489.1
 Athauma CNitrososphaera Gargensis Ga92 AFU59479.1
 Aeuryar Nmagadii ATCC 43099 ADD05844.1
 Bproteo Aferrooxidans ATCC 23270 ACK79767.1
 Bproteo Shaloespirans DSM 13726 A0066257.1
 Bproteo Bcepacia ATCC 25416 ALK18953.1
 Bnitros Lferrooxidans C23 BAM07649.1
 Bspiroc Tcaldarium DSM 7334 AEJ18398.1
 Bgemmat Gphototrophica AMW04363.1
 Bdeinoc Tthermophilus HB8 BAD69831.1
 Bchlo Caurantiacus J10fl ABY35517.1
 Bacidob Gmallensis MP5ACTX8 AEU35097.1
 Bthermo Tterrenum ATCC BAA798 ACZ42165.1
 Ealveol Vbrassicaformis CCMP3155 CEL99851.1
 Estrame Aanophagefferens XP 009033281.1
 Eviridi Vcarteri F Nagariensis XP 002949072.1
 Bbacter Hsp DG25B AIZ65498.1
 NAbacter bL21SpiD4 AL014006.1
 Bproteo Dautotrophicum HRM2 ACN14859.1
 Bchlo Cthalassium ATCC 35110 ACF15037.1
 Baquifi Aaeolicus VF5 AAC07332.1
 Bthermo Mprima MesG1Ag42 AFK05994.1
 Bfusoba Lbuccalis C1013b ACV38698.1
 Barmati Fginsengisoli Gsoil 348 AIE88136.1
 Emetazo Bmori XP 004922821.1
 Emetazo Hsapiens NP 001231573.1
 Eviridi Athaliana NP 001332586.1
 Aasgard Ckokiarchaeota Archaeon CR 4 OLS16333.1
 Bcyanob Hsp PCC 7418 AFZ44603.1
 Eparaba Tvaginalis G3 XP 001308534.1
 Euglen Tbrucei Gambisi DAL972 XP 011780226.1
 Eamoeb Einvadens IP1 XP 004256843.1

Sequence	Position
E	148
AYD	125
SD	163
DIS	160
S	161
E	129
AMD	163
ALD	163
ALD	163
AMD	163
MGD	145
ARL	163
ATR	163
AAK	163
AAQ	163
ALE	163
AMA	163
AGK	163
AEA	163
VSR	163
VSG	163
TAQ	163
SYG	163
AYG	163
AYG	163
AYG	163
AYE	163
AMA	163
MEL	163
ARQ	160
LED	141
ALY	97
VSE	131
Y	148
	154
	146
	126
	111

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Acrenar Pfumarii 1A AEM39338.1	A	ALL	AEQ	155
NAarchae a13 2 20CM 2 52 21 OLB69573.1		DSL	EN	130
Bproteo Alipoferum 4B CBS85649.1		SLTE	LEA	174
Bfirmic Gthermoleovorans AMV09772.1	T		D	163
Bproteo Msp ST5810 ANG64508.1		NLDQ	DEQ	172
Bplanct Psp SHPL14 AMV20944.1	V		D	131
Bactino Pacnes C1 AFU40489.1		DITR	LDS	174
Athauma CNitrososphaera Gargensis Ga92 AFU59479.1		EIER	LEK	174
Aeuryar Nmagadii ATCC 43099 ADD05844.1		KIDR	LED	174
Bproteo Aferrooxidans ATCC 23270 ACK79767.1		QTEK	LDE	174
Bproteo Shalorespirans DSM 13726 A0066257.1		DTSK	LDE	156
Bproteo Bcepacia ATCC 25416 ALK18953.1		ALDD	LAA	174
Bnitros Lferrooxidans C23 BAM07649.1		DLDT	FRE	174
Bspiroc Tcaldarium DSM 7334 AEJ18398.1		NLEK	FAA	174
Bgemmat Gphototrophica AMW04363.1		RIAG	FKQ	174
Bdeinoc Tthermophilus HB8 BAD69831.1		DLEK	FQA	174
Bchloro Caurantiacus J10f1 ABY35517.1		SLEA	FRD	174
Bacidob Gmallensis MP5ACTX8 AEU35097.1		TLED	FAK	174
Bthermo Tterrenum ATCC BAA798 ACZ42165.1		SLDE	Q	174
Ealveol Vbrassicaformis CCMP3155 CEL99851.1		SLEE	Q	174
Estrame Aanophagefferens XP 009033281.1		DMES	K	174
Eviridi Vcarteri F Nagariensis XP 002949072.1		SLER	Q	174
Bbacter Hsp DG25B AIZ65498.1		TLDD	E	174
NAbacter bL21SpiD4 AL014006.1		SVDD	E	174
Bproteo Dautotrophicum HRM2 ACN14859.1		GIDS	E	174
Bchloro Cthalassium ATCC 35110 ACF15037.1		GVDE	Q	174
Baquifi Aaeolicus VF5 AAC07332.1		EAEK	K	174
Bthermo Mprima MesG1Ag42 AFK05994.1		EPID	K	174
Bfusoba Lbuccalis C1013b ACV38698.1		GIDD	L	174
Barmati Fginsengisoli Gsoil 348 AIE88136.1		SLQG	R	171
Emetazo Bmori XP 004922821.1	D	SIDE	A	153
Emetazo Hsapiens NP 001231573.1		TLDD	I	108
Eviridi Athaliana NP 001332586.1		T.S		135
Aasgard CLokiarchaeota Archaeon CR 4 OLS16333.1		EIEE	E	159
Bcyanob Hsp PCC 7418 AFZ44603.1		SLDE	K	165
Eparaba Tvaginalis G3 XP 001308534.1		P.D	E	151
Euuglen Tbrucei Gambiense DAL972 XP 011780226.1		PLDA	Q	134
Eamoebo Einvadens IP1 XP 004256843.1		SLHE	K	122

- X external
- X ambivalent
- X internal