

	1	11	21	31	41	51	X	61	71	81	
	+						+				
<i>Crenothrix polyspora</i> unusual PmoA	GDWDF	WLDWKDRQWW	PIVTPVTLIT	FCAAVQYYNW	VNYRQIFGAT	LCILALGAGK	WMAVYTSW	WSNYPPNF-V	MPATAIPGAL		85
<i>Methylomonas</i> sp.LW19	GDWDF	WTDWKDRRLW	VTVAPIVSIT	FPAAVQAQLW	WRYRPLVPGAT	LSVVALMIGE	WINRYMNFV	WTFYPVNI-C	FPSNLLPGAI		85
<i>Methylocaldum tepidum</i>	GDWDF	WSDWKDRRLW	VTVTPIVLVT	FPAAIQAWAW	ERFRNPWGAT	IAVLALLFGE	WVDRYFNFW	WTFYFPINF-V	FPAVLVPGAI		85
<i>Methylocaldum szegediense</i>	GDWDL	WADWKDRRLW	VTVTPIVLIT	FPAAIQAWAW	EKFRNPWGAT	IAVLALLFGE	WVNRYPNFV	WTFYFPINF-V	FPAALLVPGAI		85
<i>Methylococcus capsulatus</i>	GDWDF	WSDWKDRRLW	VTVTPIVLVT	FPAAVQSYLW	ERYRPLWGAT	VCVLGLLLGE	WINRYFNFW	WTFYFPINF-V	FPAASLVPGAI		85
<i>Methylocystis</i> sp.KS9-1	.....	..DWKDRRMW	PTVVPILGVT	FCAASQAFWW	VNFRLLPFGAV	FAALGLLIGE	WINRYVNFV	WTFYFPISL-V	FPSALIVPAI		78
<i>Methylocystis</i> sp.SC8-1	.....	.VDWKDRRMW	PTVIPILGVT	FAAAAQAFW	ENFKLPGFAT	FAVLGLLIGE	WINRYVNFV	WTFYFPISL-V	FPSALIVPAL		79
<i>Methylocystis</i> sp.KS9-2	.....	.....RMW	PTVTPIVAMC	FAAAAQSFFW	TRFRLPIGAT	TVLLALLIGE	WINRYDNFV	WTFYFPINL-V	FPSALIPMGF		73
<i>Methylocystis</i> sp.SC8-2	.....	.....RMW	PTVAPIVAMC	FAAAVQSFLW	QKFRLLPIGAT	VACLALLVGE	WINRYNNFV	WTFYFPINL-V	FPSALIPMGF		73
<i>Nitrosococcus oceani</i>	GDWDF	WVDWKDRRFW	VTVVPIVSVA	YPAAAQAXFW	EKFXLPGFAT	LVTGLVLAGE	WANRYFNFW	FTYFPINF-V	WPTILLPMAL		85
<i>Nitrosococcus</i> sp. C113	GDWDF	WVDWKDRRFW	VTVVPIVSVA	YPAAAQAFW	EKFRLLPGFAT	LVTGLLAGE	WANRYFNFW	FTYFPINF-V	WPTILLPMAL		85
<i>Nitrosomonas europaea</i>	GDWDF	WMDWKDRQWW	PVVTPIVGIT	YCSAIMYYLW	VNYRQPFGAT	LCVCLLIGE	WLTRYWGFY	WSHYPPINF-V	TPGIMLPGAL		85
<i>Nitrosomonas marina</i>	GDWDF	WLDWKDRQWW	PVVTPIVGM	YCAALMYYLW	VNYRPLPYGAT	LCIVCLLIGE	WLTRYWGFY	WSHYPPINF-V	LPSTMIPGAL		85
<i>Nitrospira briensis</i>	GDWDF	WLDWKDRQWW	PVVTPIVGIT	YCAAIMYYLW	VNYRPLPGFAT	LCVCLLIGE	WLTRYWGFY	WSHYPPINF-V	FPSTMIPGAL		85
<i>Nitrosolobus multiformis</i>	GDWDF	WLDWKDRQWW	PVVTPIVGIT	YCAAIMYYLW	VNYRPLPGFAT	LCIVCLLIGE	WLTRFWGFY	WSHYPPNF-V	FPSTMIPGAL		85
Uncultured Crenarchaeote DQ148623	GDYIF	YTDWANTSY-	-TVFSIGNIL	MVSVGATYY	LFTGVPGTAT	YYGLIMQVYT	WVAK--GAWF	ALGYPYDFIV	TP-MWIPSCM		85
Uncultured Crenarchaeote DQ148576	GDYIF	YTDWMTSF-	-VVFSISQST	MVAVGAIYV	LFTGVPGTAT	YYATIMTIYT	WVAK--GAWF	ALGYPYDFIV	VP-IWIPSAM		85

	91	111	121	131	141	151	161	171	181	
			X	X		X	*X	* *		
<i>Crenothrix polyspora</i> unusual PmoA	VLDITLLLTR	-NWTLTAVIG	AWMFAALFYF	SNWPIFAYSH	TPLVVDGALL	SWADYMGFMY	VRTGTPEYIR	MIEVGLSLRTF	GGHSTMISAF	FSAF 188
<i>Methylomonas</i> sp.LW19	VLDVILMLGN	-SMTLTAVLG	GLAYGLLFYP	GNWPVIAPLH	VPVEYNGMM	TLADLQGYHY	VRTGTPEYIR	MVEKGTLRFT	GKDVAPX...	.....181
<i>Methylocaldum tepidum</i>	LLDTFLMLSG	-SYLFTAIVG	XMAWGLVFYP	GNWPVIAPLH	VPVEYNGMLM	SIADIQGYNY	VRTGTPEYIR	MVEKGTLRFT	GKDVXPVS..	.....182
<i>Methylocaldum szegediense</i>	LLDTFLMLSG	-SYLFTAIVG	GLAWGLIFYP	SNWPMIAPLH	VPVEYNGMLM	SIADIQGYHY	VRTGTPEYIR	MVEKGTLRFT	GKDVAPVS..	.....182
<i>Methylococcus capsulatus</i>	ILDTVLMLSG	-SYLFTAIVG	AMGWGLIFYP	GNWPIIAPLH	VPVEYNGMLM	SIADIQGYNY	VRTGTPEYIR	MVEKGTLRFT	GKDVAPVS..	.....182
<i>Methylocystis</i> sp.KS9-1	WLDVILLLSG	-SYVITAVVG	SLGWGLLFYP	NNWPAIAAFH	QATEQHGQLM	TLADLIGLHY	VRTSMPEYIR	MVERGTLRFT	GKDVVPVA..	.....182
<i>Methylocystis</i> sp.SC8-1	WLDIILLXSG	-SYVITAVVG	ALGWGLLFYP	NNWPAIAAFH	QATEQHGQLM	SLADLIGLHF	VRTSMPEYIR	MVERGTLRFT	GKDVVPVA..	.....182
<i>Methylocystis</i> sp.KS9-2	WLDIVLMISG	-SWLVTALLG	GLGWGLLFYP	INWPVLAQYH	QATEIDGVLL	TLADLIGFNY	VRTGTPEYIR	MIERGTLRFT	.....	.....174
<i>Methylocystis</i> sp.SC8-2	WLDVVLMMSG	-SWLVTALVG	SMGWGLLFYP	INWPVLAQYH	QSTEIDGVLL	TLADLIGFNY	VRTGTPEYIR	MVKRGTLRFT	.....	.....174
<i>Nitrosococcus oceani</i>	FLDAMLAISK	-SYGLTAVVG	GLMYGLXMYF	XNWPLLSAFH	VPAEYNGVVM	SLADIMGYQY	VRTGTPEYIR	MIEKGTLRFT	GKDVVPVSAX	FSAX 188
<i>Nitrosococcus</i> sp. C113	FLDAMLAISK	-SYGLTAVVG	GLMYGLLMYP	ANWPLLSAFH	VPAEYNGVVM	SLADVAGYQY	VRTGTPEYIR	MVEKGTLRFT	GKDVVPVS..	.....182
<i>Nitrosomonas europaea</i>	MLDFTLYLTR	-NWLVTALVG	GGFGLLFYP	GNWPIFGPTH	LPVVVEGTL	SMADYMGHLY	VRTGTPEYVR	HIEQGLSLRTF	GGHTTVIAAF	FSAF 188
<i>Nitrosomonas marina</i>	MLDTIMLLTG	-NWLITALLG	GGFWGLLFYP	GNWPIFGPTH	LPVVVEGVLL	SVADYTGFLY	VRTGTPEYVR	LIEQGLSLRTF	GGHTTVIAAF	FSAF 188
<i>Nitrospira briensis</i>	VMDTVMLLTR	-NWMITALVG	GGAFGLLFYP	GNWPIFGPTH	LPLAAEGVLL	SVADYTGFLY	VRTGTPEYVR	NIEQGLSLRTF	GGHTTVIA..	.....182
<i>Nitrosolobus multiformis</i>	VMDTVLLLTR	-NWMITALVG	GGAFGLLFYP	GNWPIFGPTH	LPLVAEGVLL	SVADYTGFLY	VRTGTPEYVR	LIEQGLSLRTF	GGHTTVIASF	FSAF 188
Uncultured Crenarchaeote DQ148623	LLDLAYWATK	RNKHSILFG	GVLVGMSEF	PLFMVN	LLTVADE	ETA	FKY	PRPTLPPYMW	PIEPVGVKFY	NSPVALGAGA GSVL 188
Uncultured Crenarchaeote DQ148576	LLDLTYWATR	RNKHAILIG	GSLIGLSL	PLFMVN	LLLIRDE	EVA	FKY	PRPTLPPYMW	PIEPVGVKFY	NSPVALGAGA GAVL 188