

Methanothermobacter thermautotrophicus (Gi:15678963)	36	-----	GV	L	N	M	K	V	P	R	C	M	S	T	-----	Q	H	P	D	N	V	-----	N	P	P	F	F	A	E	E	P	63																																																				
Methylibium petroleiphilum (Gi:124268439)	104	-----	GT	F	A	H	V	F	H	T	A	V	E	A	-----	G	L	D	A	K	Q	I	R	E	A	L	C	S	L	R	I	R	P	V	I	T	A	H	P	T	E	A	K	R	V	T	V	L	E	R	H	R	R	I	Y	L	R	L	F	D	L	E	-----	S	P	R	W	T	D	R	E	R	172											
Burkholderia phymatum (Gi:186470717)	126	-----	DS	F	A	R	V	I	A	E	V	A	Q	A	-----	GV	P	A	S	E	V	R	D	V	L	G	H	M	K	V	R	P	V	L	T	A	H	P	T	E	A	K	R	V	T	V	L	E	I	H	R	R	I	Y	R	R	L	M	E	L	E	-----	S	P	R	W	T	P	R	E	R	194												
Methyloversatilis universalis (Gi:334129780)	99	-----	GS	F	A	N	V	L	A	S	A	K	K	A	-----	GL	S	A	E	R	V	R	E	A	F	A	G	L	K	V	R	P	V	L	T	A	H	P	T	E	A	K	R	V	T	V	L	E	R	H	R	R	I	Y	R	M	L	I	E	L	E	-----	S	P	R	W	T	P	R	E	R	167												
Methylocella silvestris (Gi:217977880)	106	-----	GT	F	A	N	V	I	A	K	A	K	L	-----	GV	P	A	A	D	I	A	E	K	L	G	R	T	R	V	R	P	V	I	T	A	H	P	T	E	A	K	R	V	T	V	L	E	K	H	R	R	I	Y	R	L	L	V	E	L	E	-----	Q	P	R	W	T	G	R	E	R	174													
Methylobacterium extorquens (Gi:254560927)	107	-----	GS	F	A	K	V	L	A	E	A	S	A	R	-----	GI	G	P	Q	Q	I	H	A	L	K	D	L	R	I	R	P	T	I	T	A	H	P	T	E	G	K	R	V	T	V	L	E	K	L	R	R	I	Y	L	V	L	R	E	L	E	-----	L	P	R	W	T	E	R	175															
Methylosinus thrichosporium OB3b (METTOv1.400014, ppc1)	104	-----	GS	F	A	H	V	L	A	D	A	A	S	-----	GV	S	A	D	D	I	R	A	Q	L	R	S	L	R	I	R	P	V	I	T	A	H	P	T	E	A	K	R	V	T	V	L	E	K	N	K	I	Y	L	L	L	K	E	L	E	-----	S	S	R	W	T	D	R	E	R	172														
Methylocystis sp. ATCC49242 (Gi:323136042)	105	-----	GT	F	D	Y	V	L	S	A	A	A	A	-----	GV	T	P	E	E	L	H	A	Q	L	Q	T	L	R	I	R	P	V	I	T	A	H	P	T	E	A	K	R	V	S	I	L	E	K	Y	R	R	I	Y	L	L	L	R	E	L	E	-----	S	T	R	W	T	D	R	E	R	173													
Rhodothermus obamensis (UniProt:Q59757)	120	-----	ES	I	D	E	A	L	I	A	L	K	Q	-----	G	R	T	L	D	D	V	L	T	L	L	E	R	L	D	I	Q	P	T	V	T	A	H	P	T	E	A	R	R	S	I	L	Y	K	Q	H	I	A	Q	M	L	S	Q	R	-----	R	C	Q	L	T	P	E	E	Q	188															
Zea mays (Gi:162461756)	141	-----	S	D	I	E	E	T	L	K	R	L	V	S	E	V	-----	G	K	S	P	E	E	V	F	E	A	L	K	N	Q	T	V	D	L	V	F	T	A	H	P	T	Q	S	A	R	S	L	L	Q	K	N	A	R	I	R	N	C	L	T	Q	L	N	-----	A	K	D	I	T	D	D	K	210											
Azotobacter vinelandii (Gi:226945972)	105	-----	R	A	L	P	E	L	L	D	R	L	L	A	G	-----	G	H	A	A	D	A	L	A	R	Q	L	G	R	L	E	I	D	L	V	L	T	A	H	P	T	E	V	T	R	T	L	I	R	K	Y	E	A	I	A	E	L	A	V	L	D	-----	H	G	D	L	L	P	A	E	R	173												
Escherichia coli str. K-12 (Gi:16131794)	102	-----	E	V	I	A	R	T	L	R	K	L	K	N	Q	-----	P	E	L	S	E	D	T	I	K	K	A	V	E	S	L	E	L	V	L	T	A	H	P	T	E	I	T	R	T	L	I	H	K	M	V	E	N	A	C	L	K	Q	L	D	-----	N	K	D	I	A	D	Y	E	H	171													
Methylomonas LW13 (MaGE MmLW13v1.270562, ppc2)	151	-----	GS	F	H	D	T	L	I	K	L	R	D	S	-----	G	V	S	A	D	K	L	Q	V	L	L	D	E	M	L	Y	L	P	V	M	T	A	H	P	T	E	A	K	R	R	T	V	K	S	A	L	R	N	V	F	L	S	Q	E	A	L	D	-----	D	P	R	L	R	S	Q	R	219												
Methylomonas methanica (Gi:333984919)	112	-----	GS	F	H	D	T	L	L	A	F	K	N	A	-----	G	I	S	A	E	Q	L	P	L	L	D	D	L	H	Y	L	P	V	M	T	A	H	P	T	E	A	K	R	R	T	V	R	G	A	L	R	S	V	F	V	S	H	E	K	L	Q	-----	N	S	G	I	K	G	Y	F	R	180												
Methylophaga sp. JAM1 (Gi:387128746)	122	-----	GS	F	L	D	T	L	Q	F	K	N	E	-----	GV	L	K	Q	L	D	L	E	K	L	V	F	M	P	V	T	A	H	P	T	E	S	K	R	R	T	V	M	E	M	L	R	V	F	L	L	D	E	K	L	T	-----	E	G	L	I	T	P	F	D	Q	190																		
Nitrosococcus halophilus (Gi:292492252)	135	-----	GS	F	E	E	T	L	Q	E	V	R	N	G	-----	G	V	G	P	Q	L	I	L	D	S	L	A	Y	I	P	V	I	T	A	H	P	T	E	A	K	R	R	T	V	M	E	H	L	K	I	F	L	T	S	K	L	D	-----	E	A	R	L	S	Q	R	E	203																	
Thermosynechococcus vulcanus (UniProt:POA3X6)	166	P	A	T	Q	Q	Y	G	S	F	A	W	L	F	P	R	L	Q	M	L	-----	N	V	P	P	R	H	I	Q	K	L	L	D	Q	L	D	I	K	L	V	F	T	A	H	P	T	E	I	V	R	Q	T	I	R	D	K	Q	R	R	V	A	R	L	L	E	O	L	D	V	L	E	-----	G	A	S	P	H	L	T	D	W	N	A	245
Synechococcus elongatus (Gi:81301061)	159	P	L	N	Q	D	P	A	T	F	Q	T	L	F	P	R	L	R	Q	L	-----	N	V	P	P	Q	M	I	Q	E	L	T	D	R	L	D	I	R	L	V	F	T	A	H	P	T	E	I	V	R	H	T	I	R	D	K	Q	R	R	I	A	L	L	R	Q	L	D	E	L	E	T	G	K	N	R	G	F	R	E	L	A	239		
Nitrosomonas europaea (Gi:30248603)	123	-----	GS	V	T	L	A	L	Q	R	V	V	K	-----	G	I	D	A	E	Q	L	N	F	A	S	A	L	I	S	P	V	L	T	A	H	P	T	E	V	Q	R	R	S	I	L	D	Y	Q	L	I	O	R	L	L	K	E	R	D	-----	R	T	Q	L	T	P	N	E	M	191															
Ralstonia eutropha (Gi:113868876)	180	-----	GS	L	A	H	A	L	E	A	I	D	A	A	-----	G	V	T	G	K	Q	L	R	K	F	L	D	E	A	L	I	V	P	V	L	T	A	H	P	T	E	V	Q	R	K	S	I	L	D	A	E	R	E	I	A	R	L	L	A	E	R	D	-----	L	P	-	M	T	A	R	E	247												
Methylosinus thrichosporium OB3b (METTOv1.130002, ppc2)	114	-----	G	-	L	A	N	T	F	A	H	L	R	K	A	-----	S	I	G	A	G	R	V	A	K	V	L	S	N	G	W	V	S	P	V	L	T	A	H	P	T	E	V	R	R	K	S	L	L	D	A	E	H	A	I	S	A	L	L	L	A	R	Q	-----	H	A	K	-	T	K	S	E	L	180										

Quality

Consensus

P - - Q - - GSFAE+LARLKAA- GVS A+Q LQ ELLDSLRI RPVLTAHPTEAKRRTVLEKLRR IYLLL+ELD- LE- G- SPRWT+RER

Methanothermobacter thermautotrophicus (Gi:15678963)	64	E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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