





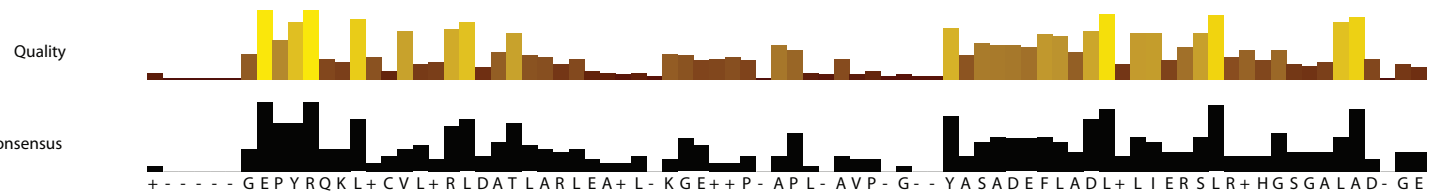
Methanothermobacter thermautotrophicus (Gl:15678963)	87	- - - M W D C E G K E V D N Y V V K K L L T K Y Q A F F R D H V L - - -	116
Methylibium petroleiphilum (Gl:124268439)	245	G F G S W I G G D R D G N P F V T S T V T R H T L W Q M R L A S L R R Y R S R L A D L A R N L S I S E R A A A L P E D F R A A V A A A L A A L P D G A G V A A R N P	326
Burkholderia phymatum (Gl:186470717)	267	Q F G S W I G G D R D G N P F V D D S V T R A T L H E N R L A C L K R Y R L R L V E L A Q T L S I T S E A L P V P D S F H E A L A R A L M A S G E P A S I A S R N P	348
Methyloversatilis universalis (Gl:334129780)	238	E F G S W I G G D R D G N P F V T N A I T R G A L I E C R L A A L R R H R Q D I V L E L L G L S V T E A S L T L S G D F R D A L T L A L E E S G E G N V I A A R N P	319
Methylocella silvestris (Gl:217977880)	247	Q F G S W I G G D R D G N P F V T N K V T R R A L R E N A K A S L R F Y E Q R L F N L M K S L S I S E R A L P P P S G F R E A L N R L A S D S G D G A G I A L R N P	328
Methylobacterium extorquens (Gl:254560927)	248	Q F G S W I G G D R D G N P Y V T A S V T R E T L Q R N A L A S L R R Y R D G I T H L G R V L S I T E R S L P V P E T F R S E L A H M L A E S G D A R A I A N R N P	329
Methylosinus thrichosporium OB3b (METTOv1 400014, ppc1)	245	Q F G S W I G G D R D G N P F V T N A V T R E T M I V N A L A S L D Y Y R Q R A L D L V R V L S I S E R S V A I P A S F R A A L E A E L A Q V E D A D R I R T R N Q	326
Methylocystis sp. ATCC49242 (Gl:323136042)	246	Q F G S W I G G D R D G N P F V T N E I V T R R T M R D N A T A S L N Y Y R S R V V D L I R A L S I S E R A T T I P D A F R T E L A R R L E Q L P D G A A I A A R N H	327
Rhodothermus obamensis (UniProt:Q59757)	260	R Y R S W I G S D R D G N P Y V T P E I T R W T A L T Q R R L A L Q R Y M E E L R Q L R R R L S L S D R Y V A P P E L R R S L A R D A R E V S L P P H V L R Q F R	341
Zea mays (Gl:162461756)	284	R F S S W M G G D R D G N P R V T P E V T R D V C L L A R M M A A N L Y I D Q I E E L M F E L S M W R - - - C N D E L R V R A E E L H S S S G S K V T K Y Y I E F	361
Azotobacter vinelandii (Gl:226945972)	246	R F S S W M G G D R D G N P N V T A A V T R E V L L L A R W A A A D L H L R D V E Q L A A E L S M Q E - - - A S S E L R A R T G E V - - - - - - - - - - - - - - -	308
Escherichia coli str. K-12 (Gl:16131794)	244	R F T S W M G G D R D G N P N V T A D I T R H V L L L S R W K A T D L F L K D I Q V L V S E L S M V E - - - A T P E L L A L V G E E G A - - - - - - - - - - - - - - -	308
Methylomonas LW13 (MaGE:MmLW13v1 270562, ppc2)	295	R F G S W I G G D R D G N P N V K P E T T E L A L R M Q A Q T I M Q E Y L A R L D Q R G Q L S H S Y G L C D L T P E F I D S L H A D R A L L G A A V T D L E K P Y	376
Methylomonas methanica (Gl:333984919)	256	N F G S W I G G D R D G N P N V K P H T T A L A L R L Q A R T I T R E Y L R R I D I L L E Q L A Y S H G M C Q P T E A F L Q S L Q N D R D L L G D T A I T L E R N Y	337
Methylophaga sp. JAM1 (Gl:387128746)	268	R F G S W I G G D R D G N P F V T A Q T T E M A I A L Q K R T V I R R Y L E D V T K L S F I L T Q S Q P L C E I N T L A T D I E Q S E Q R F A G F S T N P Q R F	349
Nitrosococcus halophilus (Gl:292492252)	281	H F G S W I G G D R D G N P N V K P E I T A M A V R L Q M R M A L R H Y L E R I G E M R I L T H S I P L I Q P S T A L M D S I N Q D L N D C P E A L L G N P T R F	362
Thermosynechococcus vulcanus (UniProt:P0A3X6)	318	R F G S W V G G D R D G N P Y V K P E V T W Q T A C Y Q R N L V L E E Y I K S V E R L I N L L S L S L H W C D V L P D L L D S L E Q D Q R Q L P S I Y E Q Y A V R Y	399
Synechococcus elongatus (Gl:81301061)	312	Q F G S W V G S D R D G N P S V T S A V T W Q T A C Y Q R S L V L D R Y I T A V E H R N V L S L M H W S E V L P E L L S L E Q E S M L F P E T Y E Q L A V R Y	393
Nitrosomonas europaea (Gl:30248603)	264	R I G S W I G G D R D G N P F V T H Q I M L H A A E R S A L I L D F Y I S E V E R I G Q T M S L S E R L I K V S S D L E G L A S T A P G L P A S R I - - - - - - - - - - -	338
Ralstonia eutropha (Gl:113868876)	330	Q M G S W I G G D R D G N P N V T A E T L E H A A S Q Q G Q M I I D W Y L D E V H A L G A E L S M S T L M V D A S P E L L A L A E R S P D H S E H R A - - - - - - - - -	404
Methylosinus thrichosporium OB3b (METTOv1 130002, ppc2)	247	R M G T W V G G D R D G N P N V R A E S L A T A L R L Q S E T A L R F Y L T E V H E L G A E L S I S R R Y A G C S E A L G E L A A R S G D D N P H R D - - - - - - - - -	321

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## PEP binding



Methanothermobacter thermautotrophicus (Gl:15678963)	117	- - - - - G E D L R L T L R V - - - - - P - N P - - - T V E - - - - R A E A K I L L E T L E S I P R S Y D T A S - - - - -	154
Methylibium petroleiphilum (Gl:124268439)	327	- - - - - G E L F R O F I A G M L A R L D A T I A R N G E Q P - E P A D A A - R D - - - A A P - - - - Y E H A D Q L I G D I E L M H R A L V E T G A Q P L A K - T F	393
Burkholderia phymatum (Gl:186470717)	349	- - - - - G E L F R Q Y L T C I L R R L D A S L A N A S R P G - D G A P V Q - G G - - - - - Y T S A D E L A A D L L V I E Q T L L A T E S G Q L A R - M L	412
Methyloversatilis universalis (Gl:334129780)	320	- - - - - G E P F R Q F L V C V L N K L D D T I A C T - - - - - E A E E G A - A C - - - R R G - - - - Y E S A D R L V T D L R T L E A G L R D S K L G R L A D - T E	382
Methylocella silvestris (Gl:217977880)	329	- - - - - G E P Y R Q F L C A H A K V K A T L A L Y - - - - - E G E R T P - G P - H - - - - Y I S A D D L I S D L A V T E Q A L A E S G S V G L A Q - D L	389
Methylobacterium extorquens (Gl:254560927)	330	- - - - - G E A Y R Q F L S C V L R K L E A T I A R N - - - - - K G A R S V - G P - D - - - - Y P S A D G L I N D L R T L E K G L A D A K C G A L A T - D I	390
Methylosinus thrichosporium OB3b (METTOv1 400014, ppc1)	327	- - - - - G E A F R O Y L T C V L R K L D E T I L A T - - - - - R G E A S G - K P - R - - - - Y A N A D Q L I H D L R V L E Q G L A D S R S E T L A A - D L	387
Methylocystis sp. ATCC49242 (Gl:323136042)	328	- - - - - N E P Y R Q Y V T T V L R K I D Q T L L A T - - - - - K D E P T A - G P - R - - - - Y G S A D E L I G D L L L L E A A L K E I K S D A L A N - D L	388
Rhodothermus obamensis (UniProt:Q59757)	342	- - - - - H E S F R L K I S Y I M G R L H G L L Q A L - - - - - D D P T Q P - A P - D - - - - Y D - A D A F V D L R L L Q R C L E A C G L E R I A R H D Q	402
Zea mays (Gl:162461756)	362	W K Q I P P N E P Y R V I L G H V R D K L Y N T R E R A R H L L A S G V S E I - S A - - - E S S - - - - F T S I E E F L E P L E L C Y K S L C D C G D K A I A D - G S	435
Azotobacter vinelandii (Gl:226945972)	309	- - - - - D E P Y R V L L K Q L R E R L F A T R D W A A A A L - H G E A V R - S P - A V - - - - L Q N N R E L L Q P L E L C Y R S L H A C G M G L I A D - G P	374
Escherichia coli str. K-12 (Gl:16131794)	309	- - - - - A E P Y R Y L M K N L R S R L M A T Q A W L E A R L - K G E E L P - K P - E G L - - - - L T Q N E L W E P L Y A C Y S L Q A C G M G I A N - G D	375
Methylomonas LW13 (MaGE:MmLW13v1 270562, ppc2)	377	L - - - - - Q E P Y R H K L I L M K Y R M Q S T L Q R V Q Q L - Q G A E Q - A N - - - R L A - - - - Y A S V A E F L D L R L I D A S L R S H G D A N I A E - L E	444
Methylomonas methanica (Gl:333984919)	338	L - - - - - Q E P Y R H K L A L M K F R M H R R M E L L E Q R I - A G D S S Q - S D - - - D Q A - - - - Y N N I Q T F H A D L C L I R E S L S S H G D Q A I A D - R D	405
Methylophaga sp. JAM1 (Gl:387128746)	350	I - - - - - N E P Y R K L Y M M R Y R L K D N L A V L E E F F - R P D L Q I - E S L - G V A - - - - Y H N E D F L A D L Y L I H K S L V D N G D I A I A A - A E	418
Nitrosococcus halophilus (Gl:292492252)	363	S - - - - - H E P Y R R K L Y L M R Y R L L D N L R A V E L H L - K P E S G L - S P S G V G - - - - Y P S E D F L Q D L Y L I R D S L I N H G D G N I A A - G E	432
Thermosynechococcus vulcanus (UniProt:P0A3X6)	400	R - - - - - Q E P Y R L K L A Y V L K R L Q N T R D R N R A L Q - T Y C I R R - N E A E E L N N G Q F Y R H G E E F L A E L L I Q R N L K E T G - - - - L A C - R E	470
Synechococcus elongatus (Gl:81301061)	394	R - - - - - Q E P Y R L K S Y I L E R L H N T R D R N R L Q Q Q E K D P T T P L P E Y R D G T L Y Q A G T A F L E D L K L I Q H N L K Q T G - - - - L S C - Y E	466
Nitrosomonas europaea (Gl:30248603)	339	- - - - - D E P Y R V F L G I H A R L I A T S R H L G S S I - R G C C Q E - N N - - - A E P - - - - Y A D S A E F V H D L D I V I R S L R Q H R S D R L A Q - G A	405
Ralstonia eutropha (Gl:113868876)	405	- - - - - D E P Y R R A L I G I Y A R L A A T S K A L T G H A - V P R R P V - A P - - - A E P - - - - Y D S A E A F A A D V Q V V V D S L R A N H G Q A L A N - G R	471
Methylosinus thrichosporium OB3b (METTOv1 130002, ppc2)	322	- - - - - D E P Y R R A L I G V Y S R L A A T L E E L T G Q Q - A Q R H A V - A P - - - A N P - - - - Y A D A R A F L A D L E I I D D S L R C H H S E V I A S - Q R	388











Methanothermobacter thermautotrophicus (Gl:15678963)	485	- - - - - D E G H M K T T E E I R A L R I N R T A N L Q E L - I L E A A S Q R K F L - - - - -	521
Methylbium petroleiphilum (Gl:124268439)	852	V L K V S G G R Q V A E R F P Q L R R R L A R R L Q T M N Q V S R E Q V L L R A L R - - - - - D D D V R T A	904
Burkholderia phymatum (Gl:186470717)	874	V Q A V T G S P G P G T R F P K F S A R L Q R R L P A I D L I S R Q Q I E L L R L Y R - - - - - S A Q - - - - - T E R Q R R A	926
Methyloversatilis universalis (Gl:334129780)	842	I L R L S G T R G L A E R F P E Y R Q K L D H R L P V V N Q V S R Q Q V S L L R A F R - - - - - M T E - - - - - D A V R K E E	894
Methylocella silvestris (Gl:217977880)	847	I L K I T G E E E I A Q R F P A Y R S R L E T R L K T I N K V N R E Q V E L L R N F R - - - - - A S T - - - - - N E L S K E A	899
Methylobacterium extorquens (Gl:254560927)	850	V L R V S G D S E L A Q R F P Q F S E R L R G R L P T I N Q V S R E Q V E L L R R Y R - - - - - S E T - - - - - D E D K R E A	902
Methylosinus thrichosporium OB3b (METTOv1 400014, ppc1)	842	V L R I T G G G E I G E R F A D Y Q A R L A H R L A T I N E V N R E Q V E L L R L F R - - - - - T T E - - - - - E E A L K E E	894
Methylocystis sp. ATCC49242 (Gl:323136042)	845	V L R V T G S A E L C D R F K E Y Q A R L S H R L Q T I N E V N R E Q V E L L R R F R - - - - - S A Q - - - - - D E A A K E E	897
Rhodothermus obamensis (UniProt:Q59757)	865	I L R I T D Q E S L L D H D P I I R K S V Q L R N P Y T D V L N L V Q L E L M R R I R - - - - - S G A - - - - - E A D R E P	916
Zea mays (Gl:162461756)	871	L L Q I A G H K D I L E G D P F L K Q G L V L R N P Y I T T L N V F Q A Y T L K R I R - - - - - D P N F K V T P Q P P L S K E F A D E N K P A G L V K L N P A S E Y P	948
Azotobacter vinelandii (Gl:226945972)	807	V L E L T E Q D R L L G H N P E V R A A F S V R N Y L D P L H L L Q V E L L A R Y R - - - - - L H Q - - - - - E Q A C S P	858
Escherichia coli str. K-12 (Gl:16131794)	809	V L A I A N D S H L M A D L P W I A E S I Q L R N I Y T D P L N V L Q A E L L H R S R - - - - - Q A E - - - - - K E G Q E P D	861
Methylomonas LW13 (MaGE:MmLW13v1 270562, ppc2)	900	I L E I A N T D H L L A E N P A L A A S L H R R D A Y L G P L N Y I Q V F L I R R L R - - - - - E M N - - - - - T E N P A D S	952
Methylomonas methanica (Gl:333984919)	861	V L E I A E C D Q L L A E N P E L A A S L R R R N D Y L G P L N Y M Q A G L L R A L N - - - - - E D E - - - - - D A N G Q S R	913
Methylophaga sp. JAM1 (Gl:387128746)	874	L L Q L T G A E T L M A E N P Q L A L L R R R Q A Y L D P L N H I Q L L L K R Y R - - - - - H G D - - - - - Y S D A E T A	926
Nitrosococcus halophilus (Gl:292492252)	889	V L H I V G A H T L L E E N P S L A L S L R R R D P Y L D P L N H I Q L T L I Q R T R - - - - - D P L - - - - - L T P V E R Q	941
Thermosynechococcus vulcanus (UniProt:P0A3X6)	929	V L T I T G H E R L L D G D P A L Q R S V Q L R N R T I V P L G F L Q V S L K R L R Q H N S Q T T - - - - - S G A I L R S	985
Synechococcus elongatus (Gl:81301061)	925	V L T I T N H G R L L D G D P E L Q R S V Q L R N G T I V P L G F L Q V A L L K R L R Q Y R Q T E - - - - - T T G L M R S	981
Nitrosomonas europaea (Gl:30248603)	864	L F A I T G Y S E L L Q D N P T L A R S I R I R T P Y I D P L N H L Q I E L L R R Y R - - - - - S G D - - - - - D D D T	913
Ralstonia eutropha (Gl:113868876)	941	L T L V T G H Q E R L A D N P L L A R S I K N R F A Y L D P L N H L Q V E L L K R Y R - - - - - S G K - - - - - D G D D I R	992
Methylosinus thrichosporium OB3b (METTOv1 130002, ppc2)	849	L A D I T G S S Q R L A D N P S L A R S L H H R F P Y I A P L N Y L Q V E L I R R W R - - - - - G G Q - - - - - T G D D	898

### Catalytically essential/ ASP inhibitor binding



Methanothermobacter thermautotrophicus (Gl:15678963)	522	- - - - - F - - - - - L L S I N C A A A G L G A T G	920
Methylbium petroleiphilum (Gl:124268439)	905	- - - - - Y Q V P L L L S I N C I A S G F G A T G	946
Burkholderia phymatum (Gl:186470717)	927	- - - - - F R K T L L L S I N C V S A G F G A T G	914
Methyloversatilis universalis (Gl:334129780)	895	- - - - - F K S N L L L S I N C I S S G L G A T G	919
Methylocella silvestris (Gl:217977880)	900	- - - - - V K S A L L L S I N C I A V G F G A T G	922
Methylobacterium extorquens (Gl:254560927)	903	- - - - - Y K S A L L L S I S C I A A G L G A T G	914
Methylosinus thrichosporium OB3b (METTOv1 400014, ppc1)	895	- - - - - V K V P L L I S I S C I A A G L G A T G	917
Methylocystis sp. ATCC49242 (Gl:323136042)	898	- - - - - L R R A L F L S I N G I A A A M Q S T G	936
Rhodothermus obamensis (UniProt:Q59757)	917	- - - - - G L E D T L I L T M K G I A A G M Q N T G	970
Zea mays (Gl:162461756)	949	- - - - - L E Q A L L V S V A G I A A G L R N T G	878
Azotobacter vinelandii (Gl:226945972)	859	- - - - - R V E Q A L M V T I A G I A A G M R N T G	883
Escherichia coli str. K-12 (Gl:16131794)	862	- - - - - W M K P L L R S I N A I A A G M R N T G	973
Methylomonas LW13 (MaGE:MmLW13v1 270562, ppc2)	953	- - - - - W M N P L L R T I N A I A A G M R N T G	933
Methylomonas methanica (Gl:333984919)	914	- - - - - W R D P L L R S I S A I S Q G M R N T G	947
Methylophaga sp. JAM1 (Gl:387128746)	927	- - - - - W I D P L L R S I N A I A A G M R N T G	962
Nitrosococcus halophilus (Gl:292492252)	942	- - - - - R Y G R G E L L R G A L L T I N G I A A G M R N T G	1011
Thermosynechococcus vulcanus (UniProt:P0A3X6)	986	- - - - - R Y S K G E L L R G A L L T I N G I A A G M R N T G	1007
Synechococcus elongatus (Gl:81301061)	982	- - - - - V R R A I H L T I N G V A T G L R N S G	933
Nitrosomonas europaea (Gl:30248603)	914	- - - - - V R R G I H L T I N G V A A G L R N T G	1012
Ralstonia eutropha (Gl:113868876)	993	- - - - - I R Q G I L M S I N G V A A G L R N T G	918
Methylosinus thrichosporium OB3b (METTOv1 130002, ppc2)	899	- - - - -	

### ASP inhibitor binding

