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Methanothermobacter thermautotrophicus (GI:15678963) 229 NAAKITGEYLDGKDIQ---------EQRVFLARSDPAMNYGMISATLLNRIALSDFRDLEEES-GVKLYPIIGMGSAPFRG 299
Methylibium petroleiphilum (GI:124268439) 546 RAPAILKELLAVPLVQRSLRLHGN--VQEVMIGYSDSNKDGGYFTANWELSKAQATMTRLGEDL-GVKIAFFHGRGGSVSRG 624
Burkholderia phymatum (GI:186470717) 568 RAPDILRELLAVPMVRRSIRAQGG--VQEIMIGYSDSNKDGGFFASNWELSKAQTKIRRLGDEL-GVAIAFFHGRGGSVSRG 646
Methyloversatilis universalis (GI:334129780) 536 RAPAIMRELLALPLVKRSVRALGG--VQEVMIGYSDSNKDGGFLSSNWELFKAQQKLTAVGTEA-GVKIAFFHGRGGSVSRG 614
Methylocella silvestris (GI:217977880) 542 AAPQIMRELLSLPLVRRSARMQGG--VQEVMIGYSDSNKDGGFLSSNWELAKAQDKLAKIGAEA-GIPISFFHGRGGSVSRG 620
Methylobacterium extorquens (GI:254560927) 545 AAPAIMKELLGIPVVRRSTRWQGG--VQEVMIGYSDSNKDGGFIASNWELYKAQVRLTTLGNHL-GVPIAFFHGRGGSVSRG 623
Methylosinus thrichosporium OB3b (METTOv1 400014, ppc1) 536 AAPVIMRELLRVPVVRRSTRWQGN--VQEVMIGYSDSNKDGGFMASNWELAKAQSKLTRLGEEL-GVAIAFFHGRGGSVSRG 614
Methylocystis sp. ATCC49242 (GI:323136042) 539 AAPAIMRDLLQIPVVRRSTQSQGD--LQEVMIGYSDSNKDGGFLSSNWELFKAQARLTEVGREM-DIAIAFFHGRGGSVSRG 617
Rhodothermus obamensis (UniProt:Q59757) 559 AAASRMEAILSHPVYRMQVAARGG--FQEIMLGYSDSTKDGGYWMANWALHRAQEQLAEVCLRH-GVDFRLFHGRGGTVGRG 637
Zea mays (GI:162461756) 573 SAPASVERLFSVDWYMDRIK---G--KQQVMVGYSDSGKDAGRLSAAWQLYRAQEEMAQVAKRY-GVKLTLFHGRGGTVGRG 648
Azotobacter vinelandii (GI:226945972) 512 NAAPTVERLLLLPGYRARLH---G--PQEVMIGYSDSAKDGGTTAAAWAQYRAQEGLVEVCRRQ-GVELLLFHGRGGTVGRG 587
Escherichia coli str. K-12 (GI:16131794) 513 NANDVMTQLLNIDWYRGLIQ---G--KQMVMIGYSDSAKDAGVMAASWAQYQAQDALIKTCEKA-GIELTLFHGRGGSIGRG 588
Methylomonas LW13 (MaGE:MmLW13v1 270562, ppc2) 594 RISEVLTQLFDTECYRELLRVSDD--RQEIMLGYSDSCKDGGILASAWGLSRAQRQIIAISERY-GLKCRLFHGRGGTVGRG 672
Methylomonas methanica (GI:333984919) 555 HIDGVLRSLLSQPAYRALLEASGL--RQEVMLGYSDSCKDGGILASAWGLYRAQQQVTAISDDV-GIPCRLFHGRGGTIGRG 633
Methylophaga sp. JAM1 (GI:387128746) 568 HIEPVMSALLENSQYRTLLSTSGN--MQEVMLGYSDSCKDGGILASAWNLYQAQKTVSRLSEQY-AIGCRMFHGRGGTIGRG 646
Nitrosococcus halophilus (GI:292492252) 583 HIEPVMTALLDDPSYQALLQASGN--QQEVMIGYSDSCKDGGILASSWKLYEAQKKVTALTGDR-GVDCRIFHGRGGTIGRG 661
Thermosynechococcus vulcanus (UniProt:P0A3X6) 620 HAPAVLTQLFSLPFCRSYLGSNSTPFLQEVMLGYSDSNKDSGFLSSNWEIYKAQQQLQKIAESF-GFQLRIFHGRGGSVGRG 700
Synechococcus elongatus (GI:81301061) 616 NAPRVMTALFELPFYTQLNPTQSEP-LQEVMLGYSDSNKDSGFLSSNWEIHKAQKALGTVARDH-RVKLRIFHGRGGSVGRG 695
Nitrosomonas europaea (GI:30248603) 556 GCASVMDELFSLPDYRKLLLSRDN--LQEVMLGYSDSNKDGGFVTSNWEIYKAEIELTRVFDRH-GVRLRLFHGRGGTVGRG 634
Ralstonia eutropha (GI:113868876) 626 NAAGIMQSLLDLPGFDSVIAHHGV--EQEVMLGYSDSNKDGGFLTSTWELYKAELELVQLFEQR-QVKLRLFHGRGGTVGRG 704
Methylosinus thrichosporium OB3b (METTOv1 130002, ppc2) 544 NAAGIMRDFYALPGIVKLVTNSGA--QQDIMLGYSDSNKDGGILASIWELYRASTALAEFFSQLPSIVMRLFHGRGGTVGRG 623
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* PEP binding * Mn2+binding * Catalytically essential ASP inhibitor binding

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Methanothermobacter thermautotrophicus (GI:15678963) 300 NLRPDN--VEDVTWEYRGAYTFTVQS---SFKYDHEPSDVIR----------GIKKLRSVKPGRAAEIERESVLEIISAYC 365
Methylibium petroleiphilum (GI:124268439) 625 GAPTGRAIAALPAGSIRGGFRSTEQGEVVSYKYANRGTAHYQVELLASSVLQHVLLSERESALVPKHEFD-EAMEAISGVSW 705
Burkholderia phymatum (GI:186470717) 647 GIAAGRAIAALPAGSVNGRFRVTEQGEVVSFKYANRGTAQYHVELLASSVLEHTLKSEREDALQPKGEFD-EAMEALSGASR 727
Methyloversatilis universalis (GI:334129780) 615 GVPAGRAIGAQPRGSIQGLFRLTEQGEVISSKYANKGTAAFNLELLAASVFDHALKSQAAAGSSSSPEFD-DALEALSGAAH 695
Methylocella silvestris (GI:217977880) 621 GAPTAQAIAAQPAGSIQGRLRVTEQGEVVSFKYANRGTAAFQMEMLGSSVFEHTLTLERA-APALRAEFE-EAMEALSGASH 700
Methylobacterium extorquens (GI:254560927) 624 GVPTHRGIAAQPPGSIQGRFRITEQGEVVSFKYANRGTAAYQMELLAASVFEHALLSEGN-GNGSRAEFD-DALEALSGASR 703
Methylosinus thrichosporium OB3b (METTOv1 400014, ppc1) 615 GAPTGHAIAAQPAGSIRGRFRVTEQGEVVSFKYANRGTAAYQMELLASSVFAHALKSEREDALAPRAEFE-DALEALSGASL 695
Methylocystis sp. ATCC49242 (GI:323136042) 618 GAPTGHAIAAQPAGSIRGRFRVTEQGEVVSFKYANRGTAAYQMELLASSVFAHALKSEREEALAPHAEFD-AALDEISAASF 698
Rhodothermus obamensis (UniProt:Q59757) 638 GGRANQAILAMPPVVHNGRIRFTEQGEVISFRYALPEIAHRHLEQIVNAMLRVVGLPAASGTDGTDPATRNRLMDELAARSM 719
Zea mays (GI:162461756) 649 GGPTHLAILSQPPDTINGSIRVTVQGEVIEFCFGEEHLCFQTLQRFTAATLEHGMHP----PVSPKPEWR-KLMDEMAVVAT 725
Azotobacter vinelandii (GI:226945972) 588 GGPAHAAILSQPPGSVPGRFRTTEQGEMIRFKFGLPDTAVQSLNLYLSAVLEATLLP----PPAPEPAWR-ELMDRLAAEGL 664
Escherichia coli str. K-12 (GI:16131794) 589 GAPAHAALLSQPPGSLKGGLRVTEQGEMIRFKYGLPEITVSSLSLYTGAILEANLLP----PPEPKESWR-RIMDELSVISC 665
Methylomonas LW13 (MaGE:MmLW13v1 270562, ppc2) 673 GGPTHEAILAQPPDTVRGQIKFTEQGEVLFYRYNNMETAVYELTMGVTGLLKASVSLVQAVPADHAEDL--AVMDELARIGE 752
Methylomonas methanica (GI:333984919) 634 GGPTHEAILAQPPATVRGQIKFTEQGEVLFYRYNNMETAIYELTMGITGLMKASVSLIQPVEP-DRPDNL-QLMGELAQLGE 713
Methylophaga sp. JAM1 (GI:387128746) 647 GGPTHDAILAQPVDTVHGQIKFTEQGEVLSFKYGNTETAAYELGMGVSALIKAS-RGLVTDSAQEKPEYL-SIMQQLAQLGE 726
Nitrosococcus halophilus (GI:292492252) 662 GGPTFDAILSQPRGTVHGQIKFTEQGEVLSSRYSNTETAIYELDMGISGLIKASACLVQP-PQEEKRDYL-GVMDFLAEAGE 741
Thermosynechococcus vulcanus (UniProt:P0A3X6) 701 GGPAYAAILAQPAQTIKGRIKITEQGEVLASKYSLPELALFNLETVATAVIQASLLRSSIDEIEP---WH-EIMEELATRSR 778
Synechococcus elongatus (GI:81301061) 696 GGPAYEAILAQPGRTTDGRIKITEQGEVLASKYALPELALYNLETITTAVIQSSLLGSGFDDIEP---WN-QIMEELAARSR 773
Nitrosomonas europaea (GI:30248603) 635 GGPSYQGILAQPPGSVSGQIRLTEQGEVIASKYTDPEIGRRNLETLVAATIESTLL-DRDAVHYHAPHYH-QIMEELSSSAC 714
Ralstonia eutropha (GI:113868876) 705 GGPTYQAILSQPPGTVNGQIRLTEQGEIINSKFANAEIGRRNLETVVAATLEASLLPQQN-APKDLDMFE-AVMQQLSDRAF 784
Methylosinus thrichosporium OB3b (METTOv1 130002, ppc2) 624 GGPSYDAILAQPPGTVNGQIRLTEQGEVIAAKYANPQIGRINLELLVAATLEATLLSHGKTPP---QEFL-DAAADLAQWGM 701
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