

>gi|123967810|ref|YP_001008668.1| photosystem II reaction center protein H [Prochlorococcus marinus str. AS9601]

MGQKTALGSLKKAIGNSGQGKVVPGWGAVPVMTVIGLLLLVFLVILLQIYNQSLLLQGFSVDWNGN

>gi|123967811|ref|YP_001008669.1| photosystem II reaction center protein N [Prochlorococcus marinus str. AS9601]

MQTLSSAPDPAVSIIVTILALLLALTGFGLWTAFGPKAAKLTDPWDDHDD

>gi|123967812|ref|YP_001008670.1| photosystem II reaction center I protein I [Prochlorococcus marinus str. AS9601]

MLALKISVYTIVFFFVGFIFLGFGLASDPTRTPNRKDLESPQD

>gi|123967831|ref|YP_001008689.1| photosystem II reaction center protein K [Prochlorococcus marinus str. AS9601]

MLILFNTFAELPEAYKAFAPTVDVPLIPLIFFLLVFVWQAAVGFK

>gi|123967859|ref|YP_001008717.1| photosystem II reaction center L [Prochlorococcus marinus str. AS9601]

MQVNENPNKVPVELNRTSLYLGLLSVFLGILFSSYFFN

>gi|123967860|ref|YP_001008718.1| photosystem II reaction center protein J [Prochlorococcus marinus str. AS9601]

MSKLGPDGRIPDRLPDGRPAVAWERRWTEGTLPLWLVAATAGGIIVIFVLGIFFGSYQGCVGAGG

>gi|123967875|ref|YP_001008733.1| photosystem II reaction center protein T [Prochlorococcus marinus str. AS9601]

MEAFAYVLILTAVVTLFFAVAFRDPPKFDRK

>gi|123967878|ref|YP_001008736.1| photosystem II reaction center protein M [Prochlorococcus marinus str. AS9601]

METTNFGFVASLLFVGVPTIFLIGLFISTQDGEKSSFYSDSSKGRLGPKR

>gi|123968624|ref|YP_001009482.1| photosystem II reaction centre N protein [Prochlorococcus marinus str. AS9601]

MFAIALGMSPFKIVTVAISASIFIIAFTWVSIKGLRKLANELIEDNENNQDN

>gi|123968756|ref|YP_001009614.1| photosystem II protein Y [Prochlorococcus marinus str. AS9601]

MLRTIVVFAPIIAALAWVIFNIQKPAREQFNDRDFLGKD

>gi|123969385|ref|YP_001010243.1| putative photosystem II reaction center protein Z [Prochlorococcus marinus str. AS9601]

MQAVNFFFVNALLFASLIAVVGVPVLYVTQPSTEEGQRESRRKIYSIAAVWVVLVFTGIVSSLV

>gi|123967611|ref|YP_001008469.1| photosystem II protein X PsbX [Prochlorococcus marinus str. AS9601]

MFQISNLLIAADFSAEVANNSAVGMIGSFIAAALLIVVPATAFLIFVSQKDSLDRSTGRR

>gi|123967892|ref|YP_001008750.1| photosystem I reaction center subunit IV [Prochlorococcus marinus str. AS9601]

MAISRGDLVRVKRPESYWYNEIGKVASVDTSGIKYNCVVRFDKVNAGISGTDGGANTNNFAESELEKA

>gi|123968061|ref|YP_001008919.1| photosystem I PsfA protein (subunit III) [Prochlorococcus marinus str. AS9601]

MKFFFSIITSVFLFLGITPIALAANGPALNADRASTEYASALTKCSENPKFIERANSATTQKDIARFERYGKASCGDDGLP
HLIIGPPLEPWGALLNRGHEGDLLIPGVLFYIAGIIGWSGREYLIESKTKNPADLEIIIDLARKCLVKGAQWPLLANKQ
GRNGDLREKDNITLNGPR

>gi|123968131|ref|YP_001008989.1| photosystem I reaction center subunit XII [Prochlorococcus marinus str. AS9601]

MENIRNNFFTMEPTQTINLIALSLIVVIHAGVLALRLGISLGRN

>gi|123968488|ref|YP_001009346.1| photosystem I PsfK protein (subunit X) [Prochlorococcus marinus str. AS9601]

MFTTLFAAADPATFSWSPKCAVVMIAACNVFAYAIARATIRKPNEGFEIPNSKFYGGLSHASVVGANCLGHIFGIGAILGL
ASRGVL

>gi|123969255|ref|YP_001010113.1| photosystem I reaction center protein subunit XI [Prochlorococcus marinus str. AS9601]

MSDFQKSFSESTSSIKFDEKYIDNSVQPNDIGVAEQWAVKTVADPCVGNLATPVNSGYFTKAFINNLPFYREGISPNFRG
LETGAAFGYLLYGPFMTGPLRNSEFALTAGLLAIGAVHILTALLVLYNAPGKAPNVQPPDATVNNPPKDLFTRAGWA
DFTSGFWLGGCGGSVFAWLLVGTLLHLDTIMPIIKNIWTAG

>gi|123969256|ref|YP_001010114.1| photosystem I subunit VIII (PsaI) [Prochlorococcus marinus str. AS9601]

MPSDLPSLLPSIFVPLIGIAMPVAVFIVLIGRFITATE

>gi|123969349|ref|YP_001010207.1| photosystem I subunit VII [Prochlorococcus marinus str. AS9601]

MSHAVKIYDTCIGCTQCVRACPLDVLEMVPWDGCKAGQIASSPRTEDCVGCKRCETACPTDFLSIRVYLGEDETSRSMGL
AY

>gi|123967781|ref|YP_001008639.1| photosystem II PsbA protein (D1) [Prochlorococcus marinus str.
AS9601]

MTTIQQQRSSLLKGWPQFCEWVTSTNNRIYVGVWFGVLMIPCLLTAAACFIVAFIAAPPVDIDGIREPVAGSFLYGNNIIS
GAVVPSSNAIGLHFYPIWEAATVDEWLYNGGPYQLVIFHFLIGISAYMGRQWELSYRLGMRPWICVAYSAPVSAFAV
FLVYVFGQGSFSDGMPLGISGTFNFMFVQAEHNILMHPFHMAGVAGMFGGSLFSAMHGSLVTSSLIRETTETESQN
YGYKFGQEEETYNIVAAHGYFGRILFQYASFNNSRSLHFFLAVFPVVCVWLTSMGICTMAFNLNGFNFNQSVVDANGK
IVPTWGDVLRANLGMVEMHERNAHNFLDLAAAESTTVALSAPAIG

>gi|123967786|ref|YP_001008644.1| photosystem II manganese-stabilizing protein [Prochlorococcus
marinus str. AS9601]

MTFNLSSQNFTATLIMRIRSFLAFVISLCITFAFVPVKTFASFERGNAQFTDVVNTGKANDCPTLDSSLVGSISLGNNGDSLK
GICMHPTEVYVVKVPGTKRKAEEVSTKIISPRNNTTVTEVYGDIDSGTFTTEKGGIDFQLITVLTPGGLEVPFAFSAKDLTAD
LPSSIEPGTEVSGSTFTPNYRTGDFLDPKARAKNTGVEYAQGLVALGGDDEELAKENIKVDVNGTGVTLSINNVDSDTD
EFAGTFEAIQPSDTDMGSKDPLDVKIIGELYGRKA

>gi|123967876|ref|YP_001008734.1| photosystem II PsbB protein (CP47) [Prochlorococcus marinus str.
AS9601]

MGLPWYRVHTVVINDPGRLLAVHLMHTALLAGWAGSMALYELAI FDPSDAVLNPMWRQGMVMPF MARLGITSS
WNGWDITGATGVDPGFWSFEGVAAAHIVFSGLLMLASIWHTYWDLDLWEDSRTGEPALDLPRIFGIHLLLAGLTFC
GFGAFHCANVGIWVSDPYGLSGHVEPVAPSWGVEGFNPFNPGGIVANHIAAGLMGIIGGIFHITNRPGERLYRALKLG
SLEGLASALAAVLFVSVVSGTMWYGSATPIELFGPTRYQWDSGYFKTEINRRVQAAIDDGATKSEAYASIPEKLAFY
DYVGN SPAKGG LFRV GALVNGDGLPTGWQGHIAFQDKEGNELEVRRI PNFFENFPVILEDKEGNVRADIPFRRAEAKY
SFEQTGITATIYGGDL DGQTFTDPAVVKRLARKAQLGEAFKFDRETYKSDGVFRSSPRAWFTYAHLCFGLLFLFGHWW
HASRTL YRNSFAGIDAEIGDQVEFGLFKKLGD ETRRIPGRV

>gi|123968867|ref|YP_001009725.1| photosystem II PsbD protein (D2) [Prochlorococcus marinus str.
AS9601]

MTIAVGSAPQRGWFDVLDLWLRDRFVFIGWVSGLLLLPCAYLAIGGWVGTTFVTSWYTHGVASSYLEGCNFLTAAV
STPGDAMGHSLFLWGPEAQGSFVRWLQLGGLWNFVALHGVFGLIGFMLRQFEIAGLVGIRPYNALAFSAVIAVFTSIF
LIYPLGQHSWFFAPSGVAAIFRYILFIQGFHNITLNPFHMMGVAGILGGALLCAIHGATVQNTLYEDTSIYTDGKVQSST
FRAFDPTQEEETYSMITANRFWSQIFGIAFSNKRFLHFLMLFVPMGMWVTSSIGIVGLALNLRAYDFVQSIEIRAAEDPEF
ETFYTKNILLNEGMRAWMSSVDQPHENFVFPPEEVLPRGNAL

>gi|123968868|ref|YP_001009726.1| photosystem II PsbC protein (CP43) [Prochlorococcus marinus str.
AS9601]

METPFNNLLRAPNQSIEETGYAWYVGNARLINLSGRLLGAHIAHSGLIVFWAGAMMLFEVNHFTFDKPMWEQGLIC
MPHVAMFGYGIGPGGEVTDIMPFFQAGVVHLIASAVLGFGGIYHSLAGPEKLEEDFPFFSTDWRDKNQMTNILGYHLI

VLGVGALAWSVNWCFIGGAYDTWAPGGGEVRLVNPTLDP RVILGYLFRSPWGGAGSIIGVNSIEDIVGGHVYVGITAI
GGIFHIFTKPFGWARRAFIWN GEGLLSYALGGICVASFIAS TFIWFNNTAYPSEFYGPTNAEASQAQSFTFLVRDQRIGA
NVGSTMGP TGLGKYL MRSPTGEIIFGGETMRFWDFRGPWLEPLRGPNGLSLEKI QNDIQPWQVRRAAEYMT HAPNA
SINSVGGIITEPN AVNFVNL RQWLAAAQFFL GWFTFIGHLWHAGRARAAAAGFEKGIDRKSEPALEMPDL D

>gi|123968099|ref|YP_001008957.1| putative photosystem II reaction center Psb27 protein
[Prochlorococcus marinus str. AS9601]

MLLKWASKLFFKNLTKAISFAISLIVVFTLFSSPSIAAKTAMTGDYTKDTISVVKTLQTAVDTPK DSPNKDEVRSEAL TLTD
YISRYRNRGMVNKTQSFTTMQTALNAMAGHYKNFASRPLPKLKERLTKEFSLAEKMLVRES

>gi|123968467|ref|YP_001009325.1| photosystem II reaction center protein Psb28 [Prochlorococcus
marinus str. AS9601]

MTSNKTAKIQFYEGTDEPVVPEIRLRSKDGTTGQALFLFEKQALSSITDGEITGMRMIDTEGEILTREVKVKFVDGEP I F
LEAVYIWKNTPDFDRFMRFANSYAKSNGLGYSEKK

>gi|123968737|ref|YP_001009595.1| photosystem II oxygen evolving complex protein PsbP
[Prochlorococcus marinus str. AS9601]

MKNIKFNPFKYFLVFLCLT LSACSGGLNAGLEAYQSPDGRYAFLYPTGWTRVKVDGGPEI IYHDLINSNETLSLVISDVN
KEVQLEQLGSPSEVGQTLIDK VIAPEGSGR KVKLINANKREASN HIFYDLEYELNLNEQARHELATVVIDRGTLYTF AVGT
NEERWNVKVDGMFNNVIESFNLI

>gi|123967686|ref|YP_001008544.1| photosystem I assembly protein Ycf3 [Prochlorococcus marinus
str. AS9601]

MPSNQNRDNFIDKAFTVIAESIVKIMPIAEKEKKAYIYYRDGLAAQNNGDYSEALEYYKESL LLEENKIDRGETLKNMAI IY
MSGNEEDLSIETYEKALEENPKQPSCLKNIGLIYEKRGRYAEQNGDL DQRDIWFDKAAEVVSKAVR LYPGGYLDIENWL
KNSGRSSIDIYL

>gi|123968866|ref|YP_001009724.1| photosystem I assembly protein Ycf4 [Prochlorococcus marinus
str. AS9601]

MNSDLT SFDKIEQKIGGSRKISNYIIGGMLTIGGIGFLLASISSY TGRDLLPLGNPSTLLFIPQGIIMGAYGVIANLLNFY L WY
LVYINFGSGSNYFDKSSKSVEIKR KGLFKDVEVKLNFDEIKSVKLDISEGFNPRRRIALVLKGRKKPLPLSGAGELK PLLQVEE
EGARLAKFLDVNLEGLK

>gi|123969259|ref|YP_001010117.1| photosystem I P700 chlorophyll a apoprotein A2
[Prochlorococcus marinus str. AS9601]

MATKFP SFNQGLAQDPTTRRIWYGIATAHDFESH DGMTEEKLYQKLFSTHFGHLAIIALWVAGNLFHIAWQGNFEQ F
VLDPTHVRPIAHAIWDPHFGSGITEAMTQAGASGPVNIAYSGLYHWWY TIGMRTNEQLFQASIFMSILACWTLFAGW
LHLQPKFRPSLAWFKNAESRLNHHLAVLFGFSSIAWTGHLVHVAIPESRGQHVGW DWNWLTVLPHPAGLAPFFTLN WG
AYAQNPD SLDQVFGTAEGAGTAIFTFLGGLHPQSEALWLTDIAHHHIAIGTVFVIAGHMYRNTFGIGHSLKEITEAHNTR
HPNDPHKGSFGINHDGIYETVNNSLHFQLGLALASLGVATSLVAQHMGALPSYAFIARDYTTQSALYSHHQYIAMFLM

VGAFAHGAIFVVRDYDPELNKDNVLRVLGTKEALISHLSWVTMLLGFHTLGIYVHNDVVVAFGNPEKQILIEPVFAQFV
QAAQ GKMMYGFNALLSDPTSSASLAANSLPGNHYWMDLINRQDALS AFLPIGPADFLVHHAIALGLHTTALILIKGALD
ARGTKLIPDKKDLGYAFPCDGPGRGGTCDSSSWDAMYLAMFWALNLLAWVTFYWHWKHLAIWQGNVAQFNESGT
YLMGWFRDYLWLN SAQLINGYNPFGVNSLSPWAWMFLFGHLVWATGFMFLISWRGYWQELIETLVWAHQRTPIAN
LVGWRDKPVALSIVQARLVGLAHFTIGNILTFGAFVIAS TSGKFG

>gi|123969260|ref|YP_001010118.1| photosystem I P700 chlorophyll a apoprotein A1
[Prochlorococcus marinus str. AS9601]

MTISPPESGEKNKKVLEDPVKADPRPIDFAKLDKPGFWSSKLSKGPKTTTWIWNLHADAHDFDVHTGDAAEATRKFISA
HFGHLAVIFIWMSAAFFHGARFSNYSGLADPTHVKPGAQQVVAIVGQEMLNADLGANYNGIQISSGIFHMWRA
WGITNESELMALAIGAVVMAALMLHAGIFHYHKAAPKMEWFQDIESMLNHHIAGLVGLGSLAWAGHCIHIGAPTAA
LLDAIDAGSPLVINGKEIATIADMPMPHQLCDPQIIGQIFPGLASGTGNFFSLNWLAFSDFLTFKGGLNPNVTGSLWMTD
VSHHHLAFGVIAIIGGHMYRTNYGIGHSMKEILDSQQGDPILPAPKGHQGLFEFMAESRHAQLSVNLAMLGSISILVSH
HMYAMPPYPYIATDYMTVLGLFTHHMWIGGLFIVGAGAHAGIAMVRDYDPAKHIDNVLDRIKARDALISHLNWVC
MWLGFHSFGLYIHNDTMRALGRPQDMFSDSAIQLQPIFAQWVQSIQASAVGTFLLAGTSEALPHKALSEVFNGSLVEV
GGKVAIAPIPLGTADLMIHIIHAFQIHVTVLILLKGVLYARSSRLIPDKASLGRFPCDGPGRGGTCQVSSWDHVFLALF
WMYNCLSIVIFHFSWKMQSDVWGLTGGNFAQSSITINGWLRDFLWAQASQVLTSYGQSISMYGLMFLGAHFIWAFS
LMFLFSGRGYWQELFESIVWAHNKLVAPTIQPRALSITQGRAVGVTHFLVGGIATTWAFHARLFLGLG

>gi|123969317|ref|YP_001010175.1| photosystem I protein PsaD [Prochlorococcus marinus str.
AS9601]

MTETLVGQFPKHIGSTGGLLSAETEEKYAIWVWSSKEQAFELPTGGAALMHEGDNLMYFARKEQCLALGTQLRAFKP
RIEDFKIYRIFPGGDIEFLHPKDGVPFEKVNREGREKVGHNPRRIGENPNPAGLKFTTKNTFD

>gi|123969404|ref|YP_001010262.1| putative photosystem I assembly related protein Ycf37
[Prochlorococcus marinus str. AS9601]

MEISSFQSYLIILFVVLIIISIFVFRQFLKTRSEELNLVKFEQKGLDSL TQATELYEFGSIQIKKRLYPEATKTKFLKAIENYENEPD
EAKAIINNALGFSYAAQNEFKKAIKHYKSAIKSLPEYPIALNNLASAQQRLL EYDLAYETYQKVLVIDPKNKTAIKKSKELEK
RNNYEPYKGIKDKGF

>gi|123968896|ref|YP_001009754.1| chlorophyll a/b binding light harvesting protein PcbD
[Prochlorococcus marinus str. AS9601]

MLQTYGKSDVTYDWYAGNSGVVGRSGKFIAAHAHAHAGLMMFWAGAFGLFELARYDASIPMGAQKAIVLPFLAGIGI
GGIENGVITEPYGIVVICTLHLIFSAVLGAGLLHSNKFAGDLGDYPENSKPQKDFEWD DPKLTFILGHHLIFLGLGAIM
FVEWARIHGIYDPAIGSTRQVIYNLDIAAIWNHQDFDLKIDSLEDVMGGHAFLEIIGGVFHICTKQFGEYTEFKGKGL
LGAEAILSYSVVGVSYMAFVAAFWCASNTTIYPVDLYGEPLKQFEFAPYFTD TVDLGS GAYSSRAWLANTHFYLGFFFL
QGHLWHALRAMGDFDKKIGQAFDNIENTKITQN

>gi|33864850|ref|NP_896409.1| phycobilisome rod-core linker polypeptide CpcG [Synechococcus sp.
WH 8102]

MAIPLLEYAPITQNSRVAALRVQSDATARANSMDIAMDRDNLVTVIESAYRQIYFHAFKSDRDVNLESQKDGQITVRD
FIRGLVLSDTFKRSFYGMNSNYKVVRLHVEKLLGRKTNKSEEIAWSIVIATKGV EGLVDVLLDSQEYLDAFGYDTPVSQRN
RVLPGRELGDTPFNITSPRYDEYYRGILGFPQIVFMGGPAKQIPARAKIKRGGSPSDYMAWLKDLMPNPPGGSSSTDI
DYMSRVPYRSIGR

>gi|33865608|ref|NP_897167.1| phycobilisome core component-allophycocyanin beta-18 subunit
[Synechococcus sp. WH 8102]

MRDAIGGLIGRYDQLGRYLDRSAIDSIEKYLDESSLRIQAVELINREAAEIVREASQRLFRDEPELLPGGNAYTTRRLAACL
RDMDYFLRYASYALVAADSTILNERVLNGLDDTYKSLGVPTGPTVRSIILLGEVIVERLQAAGVESARLAVVAAPFDHMA
RGLAETNVRQR

>gi|33866521|ref|NP_898080.1| phycobilisome linker polypeptide [Synechococcus sp. WH 8102]

MIAIKPTRDFTNLGRISFSANNASKPKQNTAINRYRAEQTQGGLISRKGLAASSQNEYKENLCSAMGIGIPRVHSECPF
SSVNDQYAATGNEALEVAIEAAYRQVLGNLGPITISQKCIELSQLKNGEISVRDFVAGLAKSDLYRENYFSKVSPIRGIELN
YKHLGRPPINQAEVSAAISLIASKGFNAFIDQITRSGEYLEVFGTDTVPYLRAWTSEARAYCSTFANLARVTPGNASSDTI
VERRSQLVVEFSNARSLSEAGNKYEVSFGFSYSKATSDPTSA AFLRMYQSKTAKSWN

>gi|33866528|ref|NP_898087.1| phycobilisome polypeptide [Synechococcus sp. WH 8102]

MADIPDLAELIRSAQVQGLSSDHSLEEARQIIGAADQERRQLS QEELLSLCAASGQDASLPRLQNHADDLVNQARCH
LLEQQPQLVQPGGALFPGERADACWRDCWHFLRVIVYAVACQRSNFTNPTGMAALRELYQRMGVPT EGLNIALMQL
NVLAAQEFERFADQELINACFQHLEQLNKTA VKS

>gi|33866529|ref|NP_898088.1| phycobilisome rod-core linker polypeptide (L-RC 28.5) [Synechococcus
sp. WH 8102]

MALPLLGYPLSTQNCRVSNLAGDNSTVQSPLYGTSAAAGDESTRAEMDR LIEHAYLQVFFHAMRSDREPFLSQLRSGNI
TVRDFIRGLLLSERFQQGYQCNLNRYRMVDQVVGRVLRPVHSDAEQRAW SIVIGEKGFATFVDALLDSSEYMDSFGY
DLVPQQRSRLPGRALGETPIHQFPQRYGADWRDALQDRAPSNQAAQMQL ETSAAWVNGQPPAFALRIWGLGLAL
VGGFELGRVLTIALAMAKS

>gi|33866531|ref|NP_898090.1| phycobilisome linker polypeptide [Synechococcus sp. WH 8102]

MPFGPASLLGVERFSEESEAPFELIPGDDARKEQIIRAVYKQVLGNAYVMDSERQVVAESQFKLGEISVRDLVRRIAKS
DLYRSRFFESCARYRYIELAFRHLLGRAPADFEEMRGRHSERLDSSGYDADIDSFVDSDEYQNAFGEWTVPFQRGWKTES
CGTMQEFTWSFQLLRGNSSSSKGLAGISSKLGGSAYQNRAIPVPPSSTEALGWSFRPSPNLQDAPTRLGVGAGEQ
GLTYRVEVTAYSANNVRRISRYTRS NRVFYVPFDKLSEQFKRIHREGGKIASITPVT

>gi|33866532|ref|NP_898091.1| phycobilisome linker polypeptide [Synechococcus sp. WH 8102]

MASNQTS LGFGATTKWGNPVSFQRKGQAGQKPALTIGEFKKQSCDQMAIGVGP RSHADCPHRVTSECYSPEDNGSL
ETVIAASYRQVFGNAHV MNFERCTELEAQLRDGR LTVRDFIRGLAKSSFYKSRFFNSVAPQRGV ELNVKHLGRAPETQ
AEISAMITLQAEQGQ GALIDSIVDSA EYLEVFGSDVVPYARSWSSPADLSTAAFPMLAALEKSFAGSDSARGGSPALTRS
LASGIAPRISVPSQAVGVRPSASFTSGRFSSKAPGITS GND SAPLRGDAYVT FGLGQREQETFQRCPGDS PDQLNALIRS

AYKQVMGNPHLMEFERALSAESKFIDGYLSTREFVRAVGLSAEYKRRFFETNAPYRFIELNFKHFLGRAPQSQAIESEHTK
ILAEGGYEAEICSYVDSVEYQSIFGEDTIPYARILTENGRSQVAFNRHLSLAEGFAASDTVLSSSSLVSSVATGMVPSGWS
ATTRINRTGTQSGAPDPTKKRFRIVVATQAARSRQRTAGNTYLVSGKDMSSQMKYIHARGGKIVSITEVM

>gi|33866533|ref|NP_898092.1| phycobilisome linker polypeptide [Synechococcus sp. WH 8102]

MTEPTTLASQPNVDTSHAAVVVQQTyrQVFGNRHLMELDVNSSIEALFMNGDLTVQGFVMALAQSPTYKLLFFETNS
PYQFVELNFKHLLGRPPHDQVELMNHVRLQLQDEGFEEIASVYSEEYLSAFGVDQVPYNRASESVMGGRTLNYTRSR
VVDAGYAGYDSAERQSKLLQSLCSGNSPDVDRKSVGNANSLTINWTSRRQVGANRRRAVQKSVVNQTSMSATIRSILS
QGGKILSIKA

>gi|296283646|ref|ZP_06861644.1| photosynthetic reaction center subunit L [Citromicrobium
bathymarinum JL354]

MLSFERKYRVAGGTLVGGDLDFWVGPFFYVGGFVTTAFFALLGTSLIVYGAAIGGTWNIWQIDIAPPAIEYGLGLAPLR
EGGLWQIITVCAIGAFVSWALRQVEISRKLGMGFHIPIAFSFAIFAYLSLEVFRPIMLGAWGHAFYPYGFHLDWVSNVG
YQGLHFHYNPAHMLAVTFFFGTTLMLAMHGGVILSAVNPPEGEDVKHGQHENQYFRDIAYSIGPLGIHRLGWFAAI
NAGFWSAICILISGPFVWSGWPFYFDWYLQLPFWNDMGLGGLG

>gi|296283647|ref|ZP_06861645.1| photosynthetic reaction center subunit M [Citromicrobium
bathymarinum JL354]

MASFHSLYSQIQIHGPYDPGLPLKGGHEPPRIKPVLNRWIGKIGDPQIGPTYLGFCGIASLICGFIAIEIIGLNFVWASVHWN
PVAFIEGMAWHRLDPPEAKWGFTPFVPLTEGGWWIWAGFFLTASILLWCRMYLRKALGMSTHVAVAFASAIPLY
LSLGFIRPMLMGSWHEAPPFGIIPHLNWTASFVLYGNFYNNPFCFSIVFLYGSVLLFAMHGGTILAVSRFGERETEEI
VDRGTAAERGALFWRWTMGFNATFESVHRWAYWFAITTFSGAIGILLTGTVDNWWYLVGWKWLGAPEYPATYPD
MTLPPEIAEQVRAATGGTSASLDLSAAPAPAPSPEVSQ

>gi|296283648|ref|ZP_06861646.1| photosynthetic reaction center cytochrome c subunit-related
protein [Citromicrobium bathymarinum JL354]

MTPLEKRPRSSLLGIFALAAAFATLLFVVLVPTWDAPWDTIESREWGWIRGAMNTFTSERTRSDDLNLVPASIEPFEAR
VSAGEAYENVQVLGDLDAAQFDHMLSITEWVAPEEGCAYCHNPDAFASFAADDMYTKKVARRMMLTMVRDINANSR
VGDVGVTCYTCYHRGQGVPPRHWFKAVAPKPPMGGIVGKPPWNRATAKTRDFFPRAAFENYLLDDQQIMGAQAR
SVSGEVTDLADLENIYILMMQMSDGLGVNCFCHNSRAFADWSQSTPKRITAWYGIRMTRGINRDYLVQMHDLFPA
DRLGPLGDVAKVDCGTCHNGMSRPLGGAPMARGYEGLRGPVSGSAITRETAFTETRLPYEAEISEPAPTPAGLQQGGE

>gi|296283650|ref|ZP_06861648.1| photosynthetic complex assembly protein [Citromicrobium
bathymarinum JL354]

MATAMPLATATSGTRETSLSDDPNDLPIDIALGLPGPLPDGEHILWHGKPDRAALARYLFRWPWLTGYFALFALLPIA
ATARAGASVAQIAFSPLLLLPVALPIAGLVLLFAWLMSRTTTYVITDRRVVFQVGVAFTRTINIPLALVTDVSSRERKR
GIDI
ALTLLRRPNKIAWLALWPHARSTKLSAPVPMRLRALPPASPAAILADAVRRAAGAVHAPRIERSPVGISARPEHV

>gi|296283651|ref|ZP_06861649.1| photosynthetic reaction center subunit H [Citromicrobium bathyomarinum JL354]

MESNVVGNLDVAILCVIAFVTFVGLVVYLRREDKREGYPVEVSGLMGRTHSAEGFPAVPRPKLFFRPHGRGVAQAPR
VEEPETVRPGQTLPPMAFPLDPGPDPLEEGIGAAAYTTLREDEPDLDVEGEPKLISLNDHPEYIYPTGDPDPRGWVLVSA
DEKVVGVKVDLWFNRAEFFLRIFEVSIDGAEGRRLLIPSFFAEALPRDSAVRATTLIARDLRRAPIRADDSCITMREEDRLN
GFFAGGLRFSTGHGQIHDPA

>gi|9971913|gb|AAG10475.1|AF279106_37 proteorhodopsin [uncultured marine gamma proteobacterium EBAC31A08]

MKLLILGSVIALPTFAAGGGDLASDYTGVSFWLVTAALLASTVFFFVERDRVSAKWKTSLTVSGLVTGIAFWHYMYM
RGVWIETGDSPTVFRYIDWLLTVPLLICEFYLLAAATNVAGSLFKLLVGLVMLVFGYMGGEAGIMAAWPAFIIGCLAW
VYMIYELWAGEGKSACNTASPAVQSAYNTMMYIIIFGWAIYPVGYFTGYLMGDGGSALNLIYNLADFNKILFGLII
WNVAVKESSNA

>gi|149688782|gb|ABR27802.1| proteorhodopsin [Candidatus Pelagibacter ubique]

MGKCLKLFALTAVALMGVSGVANAETLLASDDFVGISFWLVSMALLASTAFFFIERASVPAGWRVSVITVAGLVTGIAFI
HYMYMRDVWVMTGESPTVYRYIDWLITVPLLMLEFYFVLAAVNKANSKIFWRLMIGTLVMLIGGYLGEAGYINTTLGF
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LNKIAFGLIIWAAAMSQPGRAK