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Supplementary Files

Supplementary File 1 : List of all hypothetical proteins from *Aliarcobacter butzleri* BNI-3166

>WP_004509091.1 hypothetical protein [*Aliarcobacter butzleri*]
MQVSNSTSQALNAFKQNSNSGVNSSTTTKQPETKEKSLEEIVNDSATKVTISMNAQYIL
FEMNASNVTKTNSLAQFGLTGLTDQQNDVLSFLNGGTSDGLTSLDLGYQGKPIQLSQ
DEATQLVSEDGFFGVTQTSDRVAGFVLSFSGDNLDILQKGREGIVKGFEEAEKLFGGQ
LPEISYKTQERTLALIDEKIKSLKGEE

>WP_004509184.1 hypothetical protein [*Aliarcobacter butzleri*]
MIKNSLDNPIFLLTILILAVISNLIASVHFLVLFGGIIFTAFYRTLKKRYYYLFFLVIVAFLFIEI
NSGLKPFSLSLLSFFIYIFIIPRYESNSFSSLVYVIFFYLGLTIMWFLSFGLDERIIFALIINLFI
DLLFFGVFL

>WP_004509199.1 hypothetical protein [*Aliarcobacter butzleri*]
MNFFENWVEMDLNPILSFSSNAKILYSNSEAQFLLNRIKPKEIFDLALTYAPKTFGALTSY
IDLTMQNYTFYAITVMYENDEEIHVKLYKSAMVKKETNLNIKNINTTNIFTLVDLAISTSKIK
SNINFTKKYDPSIPEFKLDANSFIKTLNQVF EAFSNETKNVSCSILLKVGEHIKIDEKKYSL
ISVNISSYDKNSDFSINIKDSNSFIITCDRNQVVIDLPLVL

>WP_004509297.1 hypothetical protein [*Aliarcobacter butzleri*]
MVRVFFICSLFIMFLFAKDEKNIYETNCVKCHSRPVSIDKYFYRYLLEYSSERAVKKAM
FDFLKNPSEETTIMPESFIKRFGVKKKTKLSDEELNSALDKYWEEYKVSGKLG

>WP_004509394.1 hypothetical protein [*Aliarcobacter butzleri*]
MIVSIDKNYLFNIFGVNNFSSLETIIDSMAPSLVEYHLSSFCEDNSDTIYFNKRDVEKSFL
AGDYTLYLDYSENLYLELIESDIDEMTQSFV

>WP_004509513.1 hypothetical protein [*Aliarcobacter butzleri*]
MEELIVSKEELIYLFESKTLEDTGKGWLLGEFFVDIILHEVEPKFLSDISNAKFYKIVLK
KGK

>WP_004509575.1 hypothetical protein [*Aliarcobacter butzleri*]
MFLKDEWTQEELFRNKKILEKEGVKVVIDTILKPLETITITYNPYEMNNYPKNTVFVFY
CDTGKTTKERIGYKKKFPNYKCVSLKGGRAYFRPNFQLSDDE

>WP_004509610.1 hypothetical protein [*Aliarcobacter butzleri*]
MNKIKELEKILKTDVLIQAEIDALEKLIAKKTSTDLENELEYMLDIKKFYNEALALIEKGK
LTQEEATNILLDLEDMRADDEDEI

>WP_004509628.1 hypothetical protein [*Aliarcobacter butzleri*]
MTKKEVTFHINN MAYTLNIDEEVKGVLT KYLDLNNNNNDTKDLLKAYLELT YEYRQFQKEV
EDITNKLIGL

>WP_004509629.1 hypothetical protein [*Aliarcobacter butzleri*]
MEILEILNNRIDNLLYDYEKLKLENIALQQEIEKLKNENDQLIRNNQDMFLKIDSTLTLLKV
QK

>WP_004509630.1 hypothetical protein [*Aliarcobacter butzleri*]

MLLMKLQSKEKFSFLQLAHYLARIDNNFGKREEEIILEYCTEMGIENLDSFDMENFSLEN
ILKDFKSEASKRIVILELMILIHIDHNFNINEQILIEKISKSFIDIKDVNDYSQWGKSVAMLY
EVAKIFINEEKVS

>WP_004509788.1 hypothetical protein [Aliarcobacter butzleri]

MSKNKGEPTELEKIDDYNGNESKQKRNIVRLVIVLLLVFGLVLTYNQPTQNELKKVEEKT
AIPAK

>WP_004509886.1 hypothetical protein [Aliarcobacter butzleri]

MSSLMNCPECNHKILSRLGTICPNCGYTVGYFNGTSKRKEYGKFFALTVPFISFITILF
AQLNKYTMIVGIAVFFYLAIKSSPFLFKSIFFTKFEKIFFWIVWTVLNSLILITIINILRKGF

>WP_004510063.1 hypothetical protein [Aliarcobacter butzleri]

MPISRVKDFLENELENLDNFSYKIDNDDNHIYVIFSILGENSNKELTFKLLNNILYLHSITY
GWKPVEKGSANKYFWIEVLK

>WP_004510111.1 hypothetical protein [Aliarcobacter butzleri]

MKLLKLLVASSIALGLSTSLMADAAKGQKFYIKLLKEPCGMDGAKFAVKHTQDEWKSIA
ESGKFEQEVILCPNVKAGDIKPNAQKEIIDFLIEYASDSGNVPSC

>WP_004510113.1 hypothetical protein [Aliarcobacter butzleri]

MILNISKIKTESLLLFCSDLILSYKDKINLNESELDKDIVEEFNNIGNDMLKQILNVTFPQNY
YIQNAKHRYKAVLNGYNFINNEISKNLKENETFNPSMLYFSLALWFKELNKESTSKEYI
YFILYPYFQVYDKFLVNMKDPFEKFLNIKMIELAELKVIYNFDKYNLR

>WP_004510162.1 hypothetical protein [Aliarcobacter butzleri]

MKNKKLFIINLFLISTIYAQEIDSVLRKPEPKYEDILKYNQNVKYEDILEYKEKTEEEKESD
YSFGFNLDINRELMTIEGFKIDVGTKFKGIN

>WP_004510191.1 hypothetical protein [Aliarcobacter butzleri]

MKKIVLFIILSLFLILNFSACSSKTQEEIQNTQSNDISKLLKTIIEKEKEINELNKKLEICESKK
VIK

>WP_004510196.1 hypothetical protein [Aliarcobacter butzleri]

MIKKLILIALCVTSNASINDAVQNLLGASDYNTHRNLINHIFKNSSSFYKNGQIDYVKITQ
ELSNNNLLKLDLGGTKDIEVSFSFNTNAKSKMNINDILKAIGQQNFITQSEVVIEDQLK
WTIRLKTAAAINPLRLSQELQSTNSSIVDIKREGNLKWSYFIDSTNSTVYKTEDLINNKSL
SLKKPNKPYIIEISNTSAISSNINNSWYPSIVFYDKDFKIIEIVEKDSLHKNLVIDVPNNTR
YIKIDDLYSANLQKQGISITKE

>WP_004510253.1 hypothetical protein [Aliarcobacter butzleri]

MKEFFETYNQHQEDIEYFLQESLKNIGGLSNHKKNDFFKQLYKIFPSLELVYIIDKHTKIQT
SNNFYRYKIDENAKNKDRSHLISKHLHFTDSNMAFSKPYISSATRSTCVTVTIKEENEIFFL
DFRIDILLQKLNLIELNKPFSITKGFYIAGFSMIVLSILTIFFSLYDFMLYIFSNHDLSEMI
FKPIISLTLSIAIFDLAKTILEQEVFFKSYSKNSRVETKILTKFLTITIIALSIEALIVVFKIAINDY
VQMVNAFYLIAGIALILVSLTIFIYFSQKKYIQS

>WP_004510306.1 hypothetical protein [Aliarcobacter butzleri]

MSYEVVRKLPKKTVIIISLIVSIAIVIFLVQKTLKEQRF AEILGTLGHTNITELKIINKLNVEDVQ
TKLKS NVFKVKFFDKDLNQT CIGFLHKEKDDLYSKDFDCK

>WP_004510348.1 hypothetical protein [Aliarcobacter butzleri]

MKIEFKKVPQTAKELLTQFNSVEIEGIFCRISSSLVKVEAVLKGNTAIDCCRCGVSEIVEV
NEELRLLLS DGIYKGN EEEFLVIEIENSLIDFDEIIESELNSIKSDYYICKNCLQNSDNFEKE
F

>WP_004510486.1 hypothetical protein [Aliarcobacter butzleri]

MIIPQTKGGVGKSTVAMQVIAPYLYKKHGGKKITYIEIDDENNDSRSFTRTEIVDKRMLGT
NKITDLDELILMDDKHEVIVDVGGNKTSSLVLDEIKKVGSGFNVKWIPLGDGELDGKNAI
ATMKKIKKIEKNPEDNLIFALTRAISMDDEDYYNEQFINFFGHKYLDNSNSVICDFVKEPKYF
PVKNDKIITMSRYLGSTVWEMAYNNTDFAAKAMSAKEMGDIESARKYLFRRRIQTEAKD
YVLNTLNRIFCDLDKWIEIKK

>WP_004510585.1 hypothetical protein [Aliarcobacter butzleri]

MINEDRLLNEANSLFLQKRFEELFLYSQLSSNFPDNKEYPIYALFCDIASEDVSKALSLY
DYFTVIKDDSLDEAIRYVEDIVNAYDGDIDKMMEILKDLSTSTVESLDAIRYEDFKKLIEVR
GSFRIAFEDIMFSTKVAIENKDDFYDFVTKLIDNDFNSTAYSYLDGFNEYFTYDKEIEKLY
KKLEEKKLETNHR

>WP_004510782.1 hypothetical protein [Aliarcobacter butzleri]

MALPFLGLALGAGAVVAYNKSCLKDKTSKILEKTKDGLLEEVKEKINSTKETIKEKFEKK
EKAQTKAKRKYVRKPKAKETK

>WP_004510804.1 hypothetical protein [Aliarcobacter butzleri]

MTIQKELEKLIKDEVLEIEDYIDDLFEIASKKDDENVKEELKHMQMCKKDFEDMLEDLG
NNEIDDEECKEIIIEIKEMLKED

>WP_004510810.1 hypothetical protein [Aliarcobacter butzleri]

MKYEEELITQLCEVIKESENDAEQIFSNTEDIASIIEDLEIPLYKREKITTLISNIYGSLQHQL
YRQKIERVVNYVCEKNDIDKSQYNLAPSAKTIDKTEDSLSDDEELEALIKQMQD

>WP_004510865.1 hypothetical protein [Aliarcobacter butzleri]

MFGWFIKKKQKAKRKITYVCKHCKLSCETCVTMFCYACYSNSGNPCPRCGKTNQMQV
EEKILTKEYVTPIKS

>WP_004510901.1 hypothetical protein [Aliarcobacter butzleri]

MNLAIYELRANDVSEEHIELIMDRVKNRLTEENIDKELVKLGYPKIFTVDYDDYDNYDYD
NYSPTNKGNYEEID

>WP_004510950.1 hypothetical protein [Aliarcobacter butzleri]

MELMQDAIQTHVYTIYFFLCIMLFNLYSVLSQKNFISLAKRLKFMTPLYHLTNAIVIYGTI
VAFYAQHFSLTIALMIPASIFLLVIEIKRYKKMRVIKSEQIELQNDFYKYAKKIYIIEISVLIFVY
AISKVF

>WP_004510999.1 hypothetical protein [Aliarcobacter butzleri]

MKYILVSLLSVFLFTACSGKKYFEPEDTSSNIELNEKSIPATIKSFNKIGATLEDNKNVITKN
GISQNELPEGFEFLNLTEDGRIIATNYIDKILIGNQERKVSEVVVAASLRNEKLALIYSNNS
MELIDINTNKTLPKEYLPISLANDTRITNPFFMGNLILFPSLNGRVIIIVSSVNNEAVRNISVD
PDSQFNIIYIGVIESNQTLIVASPNRVVSISPRDVISKEYDLRDIIVNNNDIYIATIDGQIIKL
NATLDQVAKKKYKYAKIHALAFSDSLYAVESQGFLINIDENFDKDVYDFSFNEERMIAI
GNKIYFGSDYITLP

>WP_004511036.1 hypothetical protein [Aliarcobacter butzleri]

MKNÑKLKELIQSQYNVNVAFYIHLKEYNNKVREDLEKRISVFFFSKGVWDWKFDSEFGIE
KAGERKTDILGYFIFRSVEVEKLKKLFLEEFKSYENALKISCSIAKYEKTQEDFFELDV

>WP_004511078.1 hypothetical protein [Aliarcobacter butzleri]

MYKIVVQDRCSFCQKSDLKNNLEFDSKDDALLKAIEMKNIMNNKFKKKHIFEIQEMFNN
FIKFYKEEQKTYCCGNGCCM

>WP_004511228.1 hypothetical protein [Aliarcobacter butzleri]

MENIILSIITLGALFYLYKKIFKNNGCNCGKGSCKSNEK
>WP_004511311.1 hypothetical protein [Aliarcobacter butzleri]
MIEVIIENMNRNLINELKDSINLDIEDIKAQKEELLKRNDKKLSIENITNLKQDLNQELIKQL
QAGIDVNIYRSKVDFLETNLKELNELNKKLASIVLPVQQMYKELIADVAAKQGGQIFDIKA
>WP_004511314.1 hypothetical protein [Aliarcobacter butzleri]
MEIGRVAQIDNAKQNNIEKAQKVSTIEEKNKTIQDEEYKKNNSNILPDTELNEVIIDNVRFG
YNKESKDFVVKVTRGEAEYKYPTEDMMKVKAFLQLQELEKQNR
>WP_004511316.1 hypothetical protein [Aliarcobacter butzleri]
MDFLISSILGILLLYFISSANVYRSMYKKMNEEKSIIEDMVKLESRIERYEKQVKIGTNTL
KTNQENLQVARDDLQALRLLENINLKNKINDLQKRNEELFAQVNAIV
>WP_012012021.1 hypothetical protein [Aliarcobacter butzleri]
MTNSCQYCSKIPISKVFCSAECKESFFQKIAISVPKPFVKKLYFFCSEEQKEYEIKTFAQ
RHNWHEKLVTEKIKELFEEYYQCG
>WP_012012133.1 hypothetical protein [Aliarcobacter butzleri]
MNYKNSIEKFLEIFKRSNLSISKFASMINKDRRTVTSWIDSVTDIEPNKEVKDKICQIFRY
PDYIWEDGCGYGEFLKSITQIPQKEVRIIDEDYKGRLKYIIEHEKNRRFVIQAQFPGPMY
RDSAVQKVYKNGTSADIEELKQERIDQMLRYDYDTTEWYSIKSILSFCFASIGNFFTREE
KIKILELIYELFNNNNYKKLFLFDSFSRKIYGMETTYISINVKQKILFFKSPIESVFIEIRNKS
LVERMHKYYSSPIEAPSHVNFLESVKIIKILQDALKYNNNIKQAYETINRETNYGELFYNN
LSVDLQKEVSLPKSGQKRN
>WP_012012323.1 hypothetical protein [Aliarcobacter butzleri]
MSIFALQSIAGGFLDEDLQHFNNKKFDDWCIQFNTYEEAINIAKTLENPENIDVVEITPLSY
PKYFFPNLQGTIYVTRQIENKIICVVEPFIGSSFRIAICDLKTKDVRLTQTHYKNIPSIESAF
ANFKDIILS

>WP_012012330.1 hypothetical protein [Aliarcobacter butzleri]
MTIEEQEIFFNKKIKETILPLAINMQDEQIKKIIQTVEETNENLPTGFSAFLFEQIIHKYNRTI
K
>WP_012012479.1 hypothetical protein [Aliarcobacter butzleri]
MKDLTINTGTPRNVLGHVISGAIASAVVSSAINYKKVQSKQISRNDAIKDTVKRTSQGAIA
TGSAIATANYIGQNSWLKAVTALSIGAAGIYALEVLEEKIEQKYLTNENIEIEGE
>WP_012012483.1 hypothetical protein [Aliarcobacter butzleri]
MLNITVLTSVAKSALVGAVATKLVDTFVSTKINNKFEQNKWLRSTKLELFSKLTEEIIVVDL
ENFQAQIKEIKRTCAKIILLVNDNRNLENKIEDYLNRLNKFSSQNEKIDKNALNLVNKDMISYL
QKNIRL
>WP_012012715.1 hypothetical protein [Aliarcobacter butzleri]
MKSLKNIFAFLLPLLSMLITFTIYLLISNIVENYKSKISRDYSIIIVATNPIKNISELAGIKVEKI
QTLPNDKIIENIKSNLSNNSVELLKQKLPNFYQIYLEIFPTSTELEVIKNTLLANKDIKKVEV
FYKNHNQIYLLLLILNSVSFILFFIITLFAIIIAKQIKLWFHEYRVKISILRLHGASILYSASSIL
NYALLSSFLSFLIAGIFLVFISNNLDVLFPLELQEIVDVKINLVVELIKLFLLSFFISIFTIFGVL
LKYKISND
>WP_012012782.1 hypothetical protein [Aliarcobacter butzleri]
MKLSKIIDKIKKYLLKDSLKESKKDKVKEIEKLEEKKEKIKKEIKESEKEKEKEKLQKELD
AIIKLIEKSKILI
>WP_012012784.1 hypothetical protein [Aliarcobacter butzleri]

MFARYQKELNIVKVKLKAINFYLEEDKDYKATFGNGTIWKIDVVGKWYDEYCYITIRNES
FDESKTGKTGFPLWILMKIFGVNPANRTIDEKLNFLIEYKDKIFDEKFQYKKIYEEIEESIK
NKKE

>WP_012012985.1 hypothetical protein [Aliarcobacter butzleri]

MIKLNSQSSIAIVFAILFFALCLYFPKIYLRNNIYYTSKDINKLYAHYISLQEENTFLSQQL
DMKFKNQILDSLLFNPLQQIDQSKDLQED

>WP_012147610.1 hypothetical protein [Aliarcobacter butzleri]

MLEVSAEVILSQLGYSQNEASLKQAQKMIEVTQGFDKFAKHILSLNDHLKKNMAYVAL
SNTTNYLKVKCEESESKEILEEFHDTVSHWASKYNVNLERLPNKPIYYILGTQN

>WP_012147905.1 hypothetical protein [Aliarcobacter butzleri]

MSASFINEPENFVPFLDLLKQLIRVPSVTGAEHSFLLYLKRELEEIGIKTQYYDGLLVAQG
NNPTKGILSAHIDRHGVICTGPNEFQFAAFLAKNRSDLRGNSLSEQTYQLIAKRYINQQV
LAYEPWSGSYLGIGQIKDAFMCEEINNLIFEIEGLSHLQPGTPIAFSDKLKRKDDLISAQL
DNVISAIIYLYQNGFQGTAFFTAQEEAGKSWRYVYEWFKKNNLSTNELLVLDTSFYDT
RDEADKQLVVLNRNKDVNAKFKSPILKQLKEFCHKNDIDFSCKDTFIEEKNKIREENGLPIL
SLGSTELGRIVMESNGTIQGTTLQIPTTGYHTVEETASIKSVKAILHILSSLYIDKCLKK

>WP_012147952.1 hypothetical protein [Aliarcobacter butzleri]

MKKVKFFKVGIVFSLLLFFCTNLNAENYILNDDKLIDRAKEKINQIGDEVKSKLGVNIYY
AKSTLGLDDNIKTKEKIEIVKSNENQILQNLKAPYILMTIYVEENMVNLIFTEDFKNIIDKNE
ILDGYVVPLLASKDKNSLYAKVSAATLNGYAAIADTLADSKNIKLENSIGNSGKVSGETIWR
VFMVTLVVALLVYTYAVLRKRK

>WP_014469277.1 hypothetical protein [Aliarcobacter butzleri]

MVIERFSQNLINSGIFKIYIATGFFATLIFFVNSELSPIEMILGSILITIILKGLSNMLFSM
VSSFLENKKAEFDFKYNEEKINILLNQLVAKEADEKLNKDSVNNDFFSAQNNDKTAQV
EAS

>WP_014469291.1 hypothetical protein [Aliarcobacter butzleri]

MNLDELKKRREQNFLSHKKKKREYYLKNKMKKEIDYEKELNDDNFFLLKMKSIAQQKQ
YIDNRKESIVAKINDYKESKKAYYEQNKAKRLEYDKEYRERKKEELKEYRKKYYELMKE
NKLKKE

>WP_014469416.1 hypothetical protein [Aliarcobacter butzleri]

MKKMVIFALPILGAIMFSGCATILGGGNQQTISINSDKPMKGKLVYEDGKGEQYFTTPAT
VNVDRRSKDILSSDNDEFSTKTQKSNVNGWFWGNILIGLLGSTTDMAGGAAWKYDE
TVNLSSK

>WP_020847189.1 hypothetical protein [Aliarcobacter butzleri]

MFKEKNVQSKVLEYIYTTSKQPILLKDMLVANRQFNNGMQVDPGKLGFRRLRSRAYFLY
IGIVLVILVPISLLTHKALAKVDSHISILGAMVITAIIFIGFNFFRDKMRDIMTKELIKKSWKLH
FPFFSYEDYSIKIDSIFEKAMKEEISKKDLERYILDKLTAN

>WP_020847250.1 hypothetical protein [Aliarcobacter butzleri]

MIEKLYKLKKNQTDQKLIQKATLEQEVDKIDSEVVFTQHKIDTATVDRFGAISDFLILAMH
KDTMRLHIQKLLNRKNSLLSQIANLVNEIVELQKESEQFKYILDEEKKEKFKKILAAEEEA
ASEYVQSKYIRG

>WP_020847373.1 hypothetical protein [Aliarcobacter butzleri]

MKSSKVLLGIVVLLLAILTTIIFKIIDSNKKVEEEIVENKEPQQSSIQDRRNALKEVFK

>WP_020847597.1 hypothetical protein [Aliarcobacter butzleri]

MKEFEKYFIIDEFEDGWGMENVESEEQLFDYCTEVLFIIPDDKIEELNMKDDELEIILADL
ESEDINDDWYVYNLLKNAKESS

>WP_020847879.1 hypothetical protein [Aliarcobacter butzleri]

MKKYMPIITVVIVVAIIVIFLSMSSSSKQMVVLKEDNMSQVPLEIVLGKYQDSDCGMIINSL
DYASQVVAPDGKTWFFHHDHGGMVNWLKNKPFKDTAKIWVMSKDTKRYIDGRNAWYS
RTDETPMRSGFGAYEELKDGLISFEEVQLRVLRNETLANPAYRKELITK

>WP_020847880.1 hypothetical protein [Aliarcobacter butzleri]

MKRKKYFSFFGILSATTNRKLLSIGCRISSILSKMPEIIKQLLEKQLKPIKLYSTNNIK

>WP_020848019.1 hypothetical protein [Aliarcobacter butzleri]

MQNRRIICQKCIYYFVTWEPSKPHGCKSYGFKSRMIPSMVVKNSSGEDCKFFSPKNQAN
RS

>WP_020848321.1 hypothetical protein [Aliarcobacter butzleri]

MIKFLIPFLCTTIVFAESSADNNKKIEDTIQKSYNPNVDCLILEDENSIICKFEVIKDSQNE
QKIVINWVNPNGEISRTREMLIPAGDSSAYDFRYLDGRESKWDFKIYNEKEYSTSFEL
K

>WP_020848383.1 hypothetical protein [Aliarcobacter butzleri]

MIKKTVFLAILASSAFAHSAIMNCFDNGDGTITCEGGFSDGSSASGVYFIIQNGKEIFE
TKMNENSEVTFKKPNGDFRILDAGEGHEVYIKSKDITQ

>WP_020848489.1 hypothetical protein [Aliarcobacter butzleri]

MIEILVITISNPLLIIGIYENKKLIKEYKLDGKTSDVLPTLFQKLLNHYNIKKIIVNTPGSFMAI
KVAYIFLKTVCCLKNIELNSVSGFEFNNNSPIKALGQKYFINETNNLKVDLFLEKDCIICDFK
LPLCIEKYNFNKETLPIYNLPAV

>WP_020848726.1 hypothetical protein [Aliarcobacter butzleri]

MIKKLLLTIFLGVVAFANPLAVDSTVSELKIKDQFEKEHTLNANIKTILFASDKATSDMLRD
YLLPLSEKENILEKNNAVYIADISGMPSLISKYIALPKMKKYPFSILLDDTNKDNFTKEDG
KIIVYTLNCLKVTNITKISTPQELANIIK

>WP_041644687.1 hypothetical protein [Aliarcobacter butzleri]

MDNÑSSLRLIDANLNRLREGIRVVEDIFRYVYNNKEVATKLKNLRHLARTQNYEELLETR
DVKNVDLRESIKSEQNRDNLNSILIANFKRAQESARVLEEFTKLTSIKDSENFKYIRYELY
NLEIVLTKITSNSK

>WP_041644892.1 hypothetical protein [Aliarcobacter butzleri]

MKFDLEMQKEVAKIGMTATLGATVVTSMFMKNSLAKKTHVIAGVALCGFALWHHMLYQ
PKTSKCLKNSKEENLQAN

>WP_046991750.1 hypothetical protein [Aliarcobacter butzleri]

MILKLSFLSLILNCSLFAVTVLVSKTAIKYEEKIDSSNVIVKEVESINKACTPLTLQQLESNQ
FVTTHYINKNMIICDKDKVKSSENEGCVFNFGGVKIEKKGRIIFENNEFIRIKNLDGTIEQIY
KDGRLLK

>WP_046991778.1 hypothetical protein [Aliarcobacter butzleri]

MKNŞFSLLIITLISSIVIIYSTLFTKELSLENRYNQELEIDKINFLATKVFIEKNKYNISNLQ
FSNGNLYFENNLLLKDVKEFNITKTSKQITIYINFKDKIIQTWEFSL

>WP_046991942.1 hypothetical protein [Aliarcobacter butzleri]

MQVIISIAIFIVVTVIYKINDRFEKREFIIFLLIIFTTIGFIYYENSVDNFFPKMFKEKYEKEK
NTQIESLEAQLLNKVVSSKDKFIYKFTYLVKKDNKEFLCTMNNVEINKIQKEFIFKDFAN
LQEECIEK

>WP_046992870.1 hypothetical protein [Aliarcobacter butzleri]
MEIVLFRGTGEKIEVNTPKELKEILKYNPLMMNFYKKQLPMLKGFGESEINKIGITR

>WP_046992878.1 hypothetical protein [Aliarcobacter butzleri]
MPKTIGELYDSILIKIEKAEESQSYQTGSGEQLVRGQLSTLYAERSRLLLEKIERYGRNYIE
GQNTAPTGDTAYASFV

>WP_046994187.1 hypothetical protein [Aliarcobacter butzleri]
MKLFDKYSVNGNFTNYSLESMLKDLNIDSKLINEIIIRNSISSLTKEFIEKLKKTDESDNHIN
LLEFFLLADRMKPISCDKKTLTKLGLSERQIDEKRRARQLPFIQLSGGNETGRKIIVYD
PVEVTNYIHKDKVKVIA

>WP_046994194.1 hypothetical protein [Aliarcobacter butzleri]
MSDKSKLSIEIQLENDINVTSPVDFILNPKDKILLIALHQLKEKIENNKLDIEVLKC

>WP_046994252.1 hypothetical protein [Aliarcobacter butzleri]
MKKELIIFIVILIVLTMTMHYKEFINYPLTHLKNFPNSSAYGFGIFHPLVFASIIYVLSIPRLVI
KLFKRKNHEKSN

>WP_046994438.1 hypothetical protein [Aliarcobacter butzleri]
MKKSLVFATSIFTMSLLLTGCNNDDKEKFELSENTIDKTYLLNKQNGELFYIDNKTMYKVV
TETETKNKIGEILNLEDTLEYSKISIKTKVYNDSVYYRFNLQYLPLIVEINDEANPSQKIKK
DLSKVNFDDEWRKTILSLDKNYSLTLVFVDQDNFTVATKTIPLRNLTVNFKDGITYEGSFAI
DKSIATKINTLQYYYYFPEFNNIKQ

>WP_046994440.1 hypothetical protein [Aliarcobacter butzleri]
MDKIKLKRKIFKLSNFITFKRKIYFLILCMILEPISLIFFGALYFNNLNLNETFLKLATYSNDVI
DAYVVIALGFGGFKFVFIDYWNK

>WP_046995285.1 hypothetical protein [Aliarcobacter butzleri]
MKKTIFILIFFISNIFAIDSDIQKAFVGFHENETGENIQHVTSTTQDYNGTCYSKIVILGNY
NKNTNVEVRIGDSIGIYQSYIPISNKITKKIFAYELTFKHQNVQTQGYFEVKVNNKLYDSKVF
VK

>WP_046995322.1 hypothetical protein [Aliarcobacter butzleri]
MNYELLSKIAMKESDALKKEVAILQKRDELLNLEITNLKSMIEIEKEKTELREERNHLKNE
KNTLNAEKLLLEERNNSLEKEIISLKRDLDFLRKTTNMEDIKEIQKEKKEEIQKQTSFEFY
S

>WP_046996571.1 hypothetical protein [Aliarcobacter butzleri]
MIIIEIKDEFFTRLVNFMENENLALYNELKEIKPLDVNSLERARKIRTQRVKDLIKKAIQELEI
QNISPTKYQIHKKTKIAYITINKYFDEILEELKKR

>WP_046997080.1 hypothetical protein [Aliarcobacter butzleri]
MLKKFFNYLAPEASGKKIGLFRTLAAIFGGLIAYLGMTLVAFLLPMKVSQSGIISIMFNTF
AWACTATWIALSYTKLSALLKVLPTVIFSISLYILY

>WP_046997115.1 hypothetical protein [Aliarcobacter butzleri]
MKRNYWPLFFIGIFCFVFSMIWTITKAVSVPTVEDRSFMKKYQDVDEHFNVMMESNQK
FLSKYNFEMYLNDKEFDLTTEDIKYSQRVIEKYSENKNLLKIGQNNIKIVITDKITKEKKDV
KIDLIVSKTMTNDSDISISNDNFTNTNTFFSSNFDIKEANNWIITGSFNVDETIGYIYIKTNA
I

>WP_046997452.1 hypothetical protein [Aliarcobacter butzleri]
MNEÑEILIGVCGAHMSGLPLNWQLTDLEATFVKKCKTKKGYRLFLENKTPIRPGMIYD
SNVNSQLELEVWSMKVENFGKFMKQIASPLGIGTVFLEDESSVYGFLCEVDYVKNSKE
ITSLGSWRNFLCQQQQ

>WP_046997912.1 hypothetical protein [Aliarcobacter butzleri]
MFKILIFLFISLFLVSCSTSKNNAFRYFDKAELEAKGIKATKKADIVKDKEVNVIFMATYLNQ
VDNMKDDTKTEDFLVFTYFSSLDSQNIEDNGYLFFLNENEPVSIEKIEKGNEKYKDLML
KNYWGNYYLVKFNNIEIDDDKKSFVLNLILQDQASNKVTLGFAK

>WP_046997949.1 hypothetical protein [Aliarcobacter butzleri]
MPFLKEEKEELLKVKYVGETVIKRFEQIGIDSLEKLSNSSVEEITDIVSDILGSSCWKNSP
QAKKAVFNAIEFARENQNAK

>WP_046998309.1 hypothetical protein [Aliarcobacter butzleri]
MIKDIIENPNYKELIEKQIQDIIVFLLDNNQEFSITANITPITFNPVLP EEIKSQLHKFSLFVLS
NYTYTTIEINEEFSLFEAGFGNENFGSVVKIPLHAIFQIIVEDSILYLNSIATVEKFNRNLEK
NSFNIFKNNPNKRFN

>WP_050070995.1 hypothetical protein [Aliarcobacter butzleri]
MSLDLLIPFGILLILVIYLIYTRTKFEKNIVALYEDKFDNWKKNSFVNIEKKSHKELVGLIFRK
DDKINIELLDENVQYLIRKKGKFEIKNIRDEKDE

>WP_050071141.1 hypothetical protein [Aliarcobacter butzleri]
MQIGNTTTILGTTSQNSSINIDENSSSSNEFGVLLNKTKEQKKTEEEESLRKQLLDELNF
VAKTGFTKEELEEEIKKILEELAKQRAESGQTAQTPEEYIKNLKADLQYAVEKV TGKRMDF
NEDMLNNFVNSQNSSSQVLATTSTDEELRLIGDLKQKK

>WP_050071160.1 hypothetical protein [Aliarcobacter butzleri]
MKLE YAGFRPIISQHGISFKRGKDDKFIYLPFAYEILNALNNDYDSTKNHSHSIKIEELNIE
KILKISSIYSKIDTELDEKVKSYIKHLDEEEKEVENRTTSLDIEKNIYLENLKLMRTYKIQR
AKNKIFYYYCVWAIVEIHKKNKIRKIDLPFNEKFWHILKSIQSKLQSQNISSTIKVDELEGLK
IKFTVNIF

>WP_050071245.1 hypothetical protein [Aliarcobacter butzleri]
MKIIIFFLVPIFLFSSTLVKKYETGETFQFAEKDMLEEIKNHIENNRTQIENKLEEYKKVAKE
KVNNYKPADLKKLTPAIKNNTFYPDMTYTNPNNVYDNNGNIIYPKGFQFNPLDYQTLPY
KMIVIDGNSKAQLDWLVENNYIDNMKYMILLSDGNYQEVGEK LKQPVFYAMPKITEKFN
LEHTPSVITQIGNKMEVKEICLSCKEEVKK

>WP_050071256.1 hypothetical protein [Aliarcobacter butzleri]
MSKNEGTGTYEQTPLKLTFFDFIFNIEHSIKKYDNDLKH TINGKQEYVFKEDKFVGESKI
KFSSKAKEVIEKNQEAYKQFVISLNIKFPNISIIESSNTLLHYKFRGINNV

>WP_050071373.1 hypothetical protein [Aliarcobacter butzleri]
MTYE EWFLNQGKEHQKIITKLKDYNINEIIDYFKFENMVINEPNFCLLYKENKKCHNIENL
NCYLCACPYFRFNDKGLKKQENKILYSYCSIDSKNGSKFESENFIHHDCSNCTIPHKEK
FIKKNFNKNWFEIMKDCRI

>WP_050071665.1 hypothetical protein [Aliarcobacter butzleri]
MGIKDKLKENS NKLISIASENATKAFDYPKIKSQQLKDAINLKIREKAILSTKARLIENHKT
DDFSDLEDLEIIADEERKIVDDLKTKSLVVALAALGLNFFV

>WP_050071839.1 hypothetical protein [Aliarcobacter butzleri]
MQR LILIFFIASEL CYLLIAQTGIVEYFSSNLFLIAPLP IGGVIGSLLVSYIKIKNKVSLFLVA
QLILSFMYPHYNLLTLFILGFVVGSMAPLIINEVKKTTFLELGLALSLSYVTGTMLFNYESV
QREIIAVTLTMITLFCSLFLNYMKEGEKLN TTS HLLMMILWVFLDSALFESLSRDLAVSI
WRGGFTFEIALFHVIGVFSALFFKIEKNQKELLITL FALS YLFYFLREGFILSLIYPFVISYY
NVVILQSIKKLDFRTISFYMIFIGWMASGAGLSIALANLIFFVPITLLFAIFRVM SKEYLPNN
KEIKYV

>WP_050071893.1 hypothetical protein [Aliarcobacter butzleri]
MKEEYIYIHKHIKNVFMIGNYELEEVSIILLISVVVVYIFQEQLKLGFMGLIYLGYLGMWL
HELKATSVKSFKYHLAYKFGFRNSSKFPKSYIREFTGN

>WP_050071895.1 hypothetical protein [Aliarcobacter butzleri]
MKKFIIIFLILLANSICLNANCIVPNIILKTVQITENETSNPYLIRTNEDVNTFYNIVNRFTYKK
QEDKNVIDCLNKENCTYITNSLIENNITNIDLGLHQINYKSYKYPAYAYFDKVQSSINACSI
EDKIKMNKNKWSWEVLASYHSITPHLNRKYKEKLIKNIYIKLISQIQN

>WP_050071896.1 hypothetical protein [Aliarcobacter butzleri]
MIKDTKELIKKNLGINLKTFCIQNGFDLDTLNNLLSGKTKGNREGTNAYKIKQFLIEHGLF
TQENEKETVQIDTDNIKNPLLKNFFIVTFNKKFSTKTMKEFIKFTHKKVPAILDLYFDTTVQ
DYIKDKYFIEKNINAKDFSQFCFGTSDGSTKGSKAYFIKQKLIENGILPIISK

>WP_050071898.1 hypothetical protein [Aliarcobacter butzleri]
MAGIDFDELDDIEFNTFNDQDKKANFLNKRKKVIKGTSEEKTERIGLKFTP KYKQELEEY
KKS LGVRTFNALLYKLIELGKETHIQELQKLIKDD

>WP_050072122.1 hypothetical protein [Aliarcobacter butzleri]
MKELIKSLSVPEASGKKIGLFR TLCAIFGGLIVAYLGMTLLIYMIPGKPGESIVPLL FNTM
AWAIVALWISLGYSKLSAILRVIPTLIFSILIAILYNI

>WP_080950644.1 hypothetical protein [Aliarcobacter butzleri]
MIQTEDIKIASFFSIIAHTPGR LRVVRVNPKITQASGNITLSDIEDLPNKIDGIENIKINKIIASV
TIHYNPDIFEPKLWEDLVKNENIEELSILINKLAKEVI

>WP_123378119.1 hypothetical protein [Aliarcobacter butzleri]
MKKLFKISLILFTPIYLF AHSVLVSLYDNNDGTISVVG EFNTGESAAGALVKLVAIHSGEILF
QQR LTDD EMVIAIPKIPYKVILDGGEGHTQEKMGIAPQNGFEKVEEKELKTETKKEEK
PSRSLMQISSSPA VTISIVLAFVLLFATIFISIKNTNKLLKEIQK

>WP_151943039.1 hypothetical protein [Aliarcobacter butzleri]
MEYGMVSKLSQFTDNKALEVQKVQTSSQSAEIKNRQNLESIQEKSIEKSKESSNASQV
QNQKSATSQKYEVLLTNTNFGYNVNSRDFFVKVERGKVENQYPTEQMMKMKAYIQNL
QQS

>WP_151944557.1 hypothetical protein [Aliarcobacter butzleri]
MKQLLTLLFVAFVFLGCNQKQVVQLKMPNQNKSVPTKV KEDKTTVV EEFISNDSIIKEEV
IDNSNNGSMNTVQPQADEETVAQQSININIDETRANVKLAFVYPSTLVSKYAKSSLSTIS
GYLSYKQANYNLIVVDSKNESYENINNAFSKLKEEGVTKVIALFTP NALNNLNKIVTDDF
KVYLPLIEKKDSLENNDNLIFGSISYDDQLKKLSYYSNGKNSTFYQETYLGTKLKNSYDF
VIGNSNLRKEISNDEKNFKNIVNDSRLRNSSLFLNTDLVKSSLILSQMTVYEINPNTILAT
QILFDPMLMVL TQERDRQNLIIANSIGDVDSKLKDEIATVGGNITFEWVDYSTLVGTNYLF
SNGNSSLISTKIENNQAVYTPRLFKSTDIGFLEIK

>WP_151945168.1 hypothetical protein [Aliarcobacter butzleri]
MLKNIFLLATIFILSGCIPKTTPSIIERFSNLKEISTFD SCTNFSYISQIDDIKYGKLFVEHIN
LNSDCKWNG LARGYFISLFMDTIKAKSYKLVERLDFS NIEVNTYLVDDMYINIVNQYKV
FEDIFIIDYKGFYTTNLVKKYDSNYTNIYLQKPRLDTNYSNSLVRMNFINSYFSKERESFA
N

>WP_151945571.1 hypothetical protein [Aliarcobacter butzleri]

MTKINPEIIFAKVFIFLDLCIFIYALVFQNKWLNTQIAFISSLLITIASFVSYKKNIQNRLS
NFDYSKISKGEDRDKIDEIDDPYDLYTEYEEIPENELTAEKIKEIINDEKSKVKRNSVKNTI
FSASGFLSIYRIFGYIILIFGFFVLNNNKIFMPIAFIIGLGIVPFGVLISKLIKK

>WP_151949059.1 hypothetical protein [Aliarcobacter butzleri]

MRKFLLISIIPIFLFAHKINLFLDYENGNIINSYFANAKGCINCKFEIKDKDGNLIFSDILNE
NGEYNYKTNIEELTVVVDAGAGHIVSKEVKETIKDEKVEVNSNDEINKLQEENRQLKNHI
KVL EEQLNYFEIFKVIFGLILIALIFIFLKRVKH

>WP_151950314.1 hypothetical protein [Aliarcobacter butzleri]

MQYFGEIQTKYEEIFLTQSYMYFNEEGEEISVKEFKNLIKTTKDRKQNIIGTVFLYNPVVT
PMGFDSNKYLLEQDFEDFDKLIELKAENYITVFKQAMRESCKGKIVEIKNLFNLIERNIDA
STLLIKFNEDLERYNSAQNTEFDRDIMYLDAAFIPTGKFVFFCWGDKIKEKEFPYINEY
AKTLYENAIKLGKKVAYVYKKEKTEQGSIEFLQFSNPSQNNQKYKASISSAIKKSFEQFPPI
PTPYE

>WP_151950332.1 hypothetical protein [Aliarcobacter butzleri]

MGIEFSSKFCKTCNAQKKVERKTPNHILHLLLTIFLGSFTLGIGGIWILVWIGISMNASGR
WVCSTCGGKDFE

>WP_152017617.1 hypothetical protein [Aliarcobacter butzleri]

MSLLQYTSKEMFSSTELVRKSKNIFDKLNKKEIEKAILRDGKPNITILLDFEYEEKIMTDYL
KLKGKDTVEIPSIESEKNETVKSDKNISKKENIEDEDFQAALNKIDDLEFFTDSSELKKDK
DETLKEFWDKD

>WP_152018419.1 hypothetical protein [Aliarcobacter butzleri]

MGLKRYIVSTVILAILLFGFLYSLELDYEISLFGYSQILPVS VWIILPFLFLAIATYLHLFFY
AACDFFKKWAVSKDHETMIEFINAQLLGKDSATKFRTKKFRELYAVLSQLNISVKSETFT
SLNEDLNKTVAAVQDINKGKFVKS VKLNENSDLAQNLNKKIEEQVDFAVDVIKKPENYS
FDVVKKAFLKVLSEKTMTTIKKLYKNIKLDKELAQKLFEKDALNNEFGFTQEEILALVKEL
NFDKKDYLNLAKTYEKILNPDEIISIFEKLSSSENDEATTAYLHVLCEFEMIDKLREVLANTQ
ENEFLPFKALLDLKDAGKKYNVETLSYK

>WP_152019012.1 hypothetical protein [Aliarcobacter butzleri]

MKKIFLGLAIVIIIGAICLGLRSTVNSKIQSKVEELNKNGLVLSHEHSFDHYQTIGKGKIEII
YDPKVASYLFSKIEDEDTKKSLEKQYNLLDRATKDRVFEGITFDYNFVMNNISSKLDLDL
YLTNLSQRTMYKLEQTYSYAPQTNWLKPLLENKKIHLNIDENKNFKLDDINITIPNDSFITI
RGVHGTQNNIKVALFKIADVYDDSYTKGSLIDNLAFDYSSQKEKKSSKLDIENLEFIDYT
NVVSIKNLILDSQSLQDKDNISGNSKISFDELNIVKDNKLYLTSSSKNIGLNKTSLDIAFDKI
PYKKYEEMLSISDKDFLQKYDDFMKAVSQNGFQMTINGASNNFKIDENKYFNTLKFN
STFKMNQNFDSMNKIKSIKDIFEVVKATLDIDADSVKSLSSLLKDEEFKAIDIENNQKRFEI
ELKDDGLYFNSKKFLDQKDLEFSSLNTLGTSVLAENGKVVSSYELVDKNLLRVTFKYTT
NLENTAGGLAVSFPQLKDASKIKAHNTKSFDKIDYYKGGQEIYSGMLGKNVKAEYLMV
EGWDKNWTDTKQEKEFSLDIDISELKKDYSYLEINLRGGSLNENVATTSPKYSEIVPNE
SQSFTTDQQSYPVNIADIYLLDLKLDKK

>WP_152055841.1 hypothetical protein [Aliarcobacter butzleri]

MIKFVLILMFIIFQINLLCAEEKIDYIELDVMDKQHIIIEKISKNNFKIYTEENDDKMHQSFLKI
KTPIKNTGLIFFEDMEKDVGFDFLPILIPTEQKNKFQKVELPPIKQEGGSPFVSSVFYANI
DNDIEEELLIIIRWPQRHYDYS GTFYKVYVYDFIKNKDNSFTVQFKEDISKKLECS DIVLR
DGNKINDCNFEDAKGVKRYLRKLG Y

>WP_152057377.1 hypothetical protein [Aliarcobacter butzleri]

MKKIVFFLLVIGLGVAFAAGTGDAYGAKPVFDKVDAAALGDTYIGALLAMGFLWKGIGIYKE
TGDTNKALPQAGIGLAIGSITALASGIAGAILI

>WP_152058769.1 hypothetical protein [Aliarcobacter butzleri]

MKKVLLGTAVLMALLTGCTEEKKPAATTETKTETPAAEVKAPATEVKAEVKEEVKAEATE
EKAKTEEATPATEEKAATTTTENK

>WP_152059044.1 hypothetical protein [Aliarcobacter butzleri]

MTNAETISKLNALTTLIKAYEELQEENSGLKGVSELEEKVLELELSNEDLEKDINQLK
GHTEEDKSNLSSILGKIENILNRKVETTSTNVSTNSFDFDSKEDEIKEEVVEEKKEEENIL
NLDSNSFANVLQQKEEKKEESNKLDLSRMSSLLNGFNH

>WP_152059081.1 hypothetical protein [Aliarcobacter butzleri]

MNCPNCQNNTFYLLANDYIKCKKCAKKLSLKKLEKDKLIEKFCEDKNALETAKELDLNY
KTVKDRFDLLRRKIAIFLEEEYQNSIKDYSEYEEFYIKEREKNKKKSLSEAINIIGFYSN
GKVYTLLMPKIGNRAFDIEDGFIQYLNWYKIHSQNSHQTKLNEFWKYIELNLKKYKGIEE
NNFFYYLKEYEFKFNYKKCNQITILNNIFLS

>WP_152060572.1 hypothetical protein [Aliarcobacter butzleri]

MLSVSDIENWLREHGINNYHISEDYVSVQGNVNLSEKLNGEKLPVKFDRIDGYFDMS
NNGLETLEGAPKTVLKDFNCSKNKLTSLFDCPTEVGEFDCSYNQLKNLSYGPKEVKGS
FNCSYNELTSIKASPRTVKGHFKNCDNKLVSLEGGPKNIDTYFDCSHNLLERLNGGPIA
VKQDYICNGNRLADLEGVADEIGGDLVTDIKLNIPSRDYDEEGQFYRYKGQEATHIYKPIV
ALTNVEDIQAWLEKFDIKNATILSDNSVDVHGDVKLSNRLPNLSKLPINFNIVEGDFDISE
NELVSLEGSPVKVGGSFHAHKNELNSLRGGPKEVKGSFVILHNNITSLQNSPTIVKDDYI
CSHNPLRTLEGINTVQGYVFTGVYIPRLKCQKYNKYGITTYYKPGDAVMKYLDDEEYISLT
DEEKAFESTKKNLEKVIKKMLNANTLTKEMITDTLLKNLTKYQLDQLKTKVLWIKNPPNE
DGSDYISEDIMKLAFEKEL

>WP_152633009.1 hypothetical protein [Aliarcobacter butzleri]

MKKAYTLLITIVLISTFSYLGILILETKALKNQNLNQNLYIQAKNHLNFFEDFVKDYDLKDI
THLQIEDELFDIYATKLIDSNVIDIFVKAKYYDISIHKQIIKE

>WP_155400713.1 hypothetical protein [Aliarcobacter butzleri]

MNLKLDENNAKIFICNGREHVIINAEIIGNYIDVKFEDDTPLTIYNNE

>WP_157351287.1 hypothetical protein [Aliarcobacter butzleri]

MKKIAILLLLSFNIFLFTGCSQNEPNIVFEPKLVCVEMSKSEQTQEVDIRVHKDDLVLVFA
RKQEELEEKINFYESQVDRYSALCKEQENKNFPRENETGDKI

>WP_157351546.1 hypothetical protein [Aliarcobacter butzleri]

MKEKRRILWPKSKCCLKFLDLEFLAKYGSIAIIIGSIAVQSLNIVENKNFELSFFSIIINLFF
LVVVLTKLEIKIDSLEKYLDNLLKIMIFIFLLNFVAYLFANDLIQNYVYAPLSFLGAYFFFLLL
YKKS

>WP_164758870.1 hypothetical protein [Aliarcobacter butzleri]

MIKFMLLTILIVFFQGCATWSGIKQDSNRAWKATKDTSSDVYHSVKKSIHEATE

>WP_175406305.1 hypothetical protein [Aliarcobacter butzleri]

MIFIGLFFGIITIVISLNVYNHINSKIEDYLKTINCKDFIYSKGSYKAFCEDKLLEVKNNSFIL
DLENNQILEVDYKNIKKLEENENLHILTTNEDFKIQFKEKSDLEKFKEKLNSKIIGE

>WP_175531109.1 hypothetical protein [Aliarcobacter butzleri]

MNNIYNLLIISIKNIEKECDKHKNKDEYFLKKRVLDVMAHLHEIRRKIQDNLDKKIK

>WP_175531407.1 hypothetical protein [Aliarcobacter butzleri]

MAEPTTEEDLLKQAKKIQDDANKKAKELKEKAKEIKQKNLATLGELTIKFLQNEISLEELRT
FATNHNFLKN

>WP_175531414.1 hypothetical protein [Aliarcobacter butzleri]
MYLDILAKKLEQKKLNDEKKAKLEKMKNEKNEVTRKDEKAKFSEKFGYFYNFIDKMKE
QKTNVFSFLLKNYKNGNLYVNNNEYILASFMGITIAVKPTDIEIIEPLSSSNKIYLAICFTPH
ESVNYIEETTWSINNVELCSYISQNNQKPTVDEDFYIPQKVYFDYYAKKSFRVQKEVASL
NSDKYYHGIEIEFNDYSDEYTIKTLRDRVITPIKYELSSTNNKYSFLNMTTSQFMYDSVL
DIKIKRDEFLKNEEIIFFDILLRIFIAESKKMEKTKENELLKFENKDKLKLFLKPFDLNEKHW
NKPYNFFIDDVITNYPRFIANQLQQSKNICNLSKEFFKYNF

>WP_193220824.1 hypothetical protein [Aliarcobacter butzleri]
MSQEDIEALMSGLDIASDGNSEQTEETIEPAKVNTKEIEELLSQTEEIKDKDDTTKVQESI
ETSVANIPNEDNANKNNKINEIENLLNDIEINSPKELVSSSENVKKIQDDDKSDRSEDEIV
KDWTSSKINEGVFPFPAESDTKVVTQLSQVANDSEEKVSQIFDVLSLGLDNNNELRKAF
KEYDSFITAETNLLVSLNNKFPNIKIFDEHLKNIHTVKDSLEKLKALLNDEDMHIFQGMEL
MQFNDINRQKIERVMSVIRKLSIYLNLFEDDGKTTNLPMAKHIHGDDETLVGDDLDKL
IAEFSQKD

>WP_195679434.1 hypothetical protein [Aliarcobacter butzleri]
MINSNYEIAIAKAYNQSSNQEVDFLNTLVVNNENKSSKTADLSYENIKGITLEEIEKL
FQNDNDKNMAKNLRLATLFSKDNLKALFNVLGQPFVGFYLTDRYSDKNSYFKSK
YGNSSLFNLLHQSITKNVNQNTSNTDVISQDMLDNILLEINSFDFMSSFSKTSKDGYNK
YKNKDDRYSLYEDYSLKYEELLTKYKELDNYNNTNLIKQF

>WP_198319633.1 hypothetical protein [Aliarcobacter butzleri]
MEIVVILMYVVLFLIALFLSFSSVKYFITMWKFKNRKKDGSEDDDDFKRFD

>WP_202880001.1 hypothetical protein [Aliarcobacter butzleri]
MRISNIYDFVILIKKLENECIKYKEKSEDISKVILKSELSDLHELRRRIIEEFENSNNKQNK

>WP_204368097.1 hypothetical protein [Aliarcobacter butzleri]
MKKVIIYKITYPNGKIYIGKDLTNALTYFGSVKSEYVENDFSEEEKILQYKKK

>WP_226800214.1 hypothetical protein [Aliarcobacter butzleri]
MLNGFGKKYFSLSSIQAYSAITLHNIASCKNHLQIKLQLSSSEDEEETVSKGLEQSL
SCFAIKTKPCHCDCLFKRKTALAVRLFRYIPRCPFYCTFFAFRRTGVHPPLHSL

>WP_226805608.1 hypothetical protein [Aliarcobacter butzleri]
MNSIFLSNEIIIFLVQTLFILLFVAFYFSFFIKNWDFSKTSNKQYKLEKTSYLVILIITFTLI
VKIFLFPYFAYTLDNLSNVVPGAMCAAGIVGANKYGGINLFLKIVILFFIGIWLINSFDI
KETYPYTKKKYFLYIFIFILSIFELILDFLFSNIPTKEPVLCCSVIFGVNSIGSKIPFDLSINTLLI
LFYMIYLLIIFLNQKKAFLNLLTNFLFLYIAYYATTYFFSTYIYELPTHQCPFCMLQKEYFF
VGYFIWGSFLGTFFGVASFVLKLILKKDFDFIYRYSIIFNTLVFVSNSFYVIRYFIVNGVFL

>WP_226807056.1 hypothetical protein [Aliarcobacter butzleri]
MLFTNTKKEEYTKYVKDSIYDATWRWKWRKDDIVDLQCYCPKCDSILYDDSSCNITYT
DLAKTDFICEKCDSQIITSIHGGNKKYAANTIKREIQRRIQTQYKI

>WP_237909997.1 hypothetical protein [Aliarcobacter butzleri]
MGKIVLDEKEVNELMDTFDFSKSVYLQKLEKISKVIEKLDEIQTAKKEISDDLQFKPILLK
LQDKDEREVSLNYAAYLSFLGKKIDELSKSSSLKKLEFIVDNSNKIVKFATLKLGLIVAIGVI
VILILNIYKT

>WP_237909998.1 hypothetical protein [Aliarcobacter butzleri]
MKKENKSNHILTGQTKGGVGKSTVSGIVATLLYLQNQNQKINLFEIDDNNNSKVNSNYIN
HQSLKLDSEVVIDDIQFSSLSNVLNIVDAGGGNDTKLVLQKLKEIDLGLNYYIPLND

DMEQVDNVKDTIALIRDFDKSANINLILNRCFSLEKDEIQKQFINIFGSDELDPNQLDNLK
VDNIFFVPNSNIFSILKSHYKVSLLDSYLSSIDLQVQIDTYRQEWVKEGQDVFKANNKRY
RFAKMVVELIEQLKPIQKAL

>WP_237910002.1 hypothetical protein [Aliarcobacter butzleri]

MSDDIQKINTISGGQNAQNVYGNQVKTNIYIENQNNQISQNLKIELQYKEGMLNNEKEV
LTKLFSLSNYNFDFIITGLNHIFENKMIIDISLELKMKYIEKSKLTKDWNINIREFIQSIFEIK
NFFYIYENYYINTKFINLLTNFILKEKIAINSMPNLDDFQLTSKFYKENNDFDFIEIFGYEFS
KSHNLSKLIETFKIKFDDLSLEHYIEEIRNHNNILLDIFLSNFENSKECTLKNLFIWLHESNI
KSNLTQAQAKTIDDLLNLGLKGYFKDEDVKLWQILEKRYKSPNAMILKSFFNNHKCSDW
TIYELDCWLEKNKPDSDLRQIYANSIDEIFDLVFGDGYFMNEDATLWNDLQNLRY

>WP_237921743.1 hypothetical protein [Aliarcobacter butzleri]

MKKHKLYIFLTIIFTFILFALGIGIRYIIDPVGLNNKFDLGLKKDIALAYRTQKYVELTNFKPN
TLMIGGSRVQYLNTEDVKKYTNDKVYNLGLQFSTLEEYQYFLKYSLENFPIKNVIGLNL
YPFSQRLEDNKSDFDKDLIAGFSVFNQIKHYLEVPLFKYLQHSYENQDKEADYKNGSI
TLHHQNRVIQNNDKELLWKITLEGYKNKYFDYLEWGEDSLYYYKEMVELCKEYNINLKI
FTTAIHSSMFKLLEETEKMDIFYLWKEELSKIAPYWDFMTQNSISDNEDNYIDPSHLKQE
LGYLYFARIFDDKSIEVPKDFGIFVEKK

>WP_237927866.1 hypothetical protein [Aliarcobacter butzleri]

MTKYIFLLFPIFLFANSYIAKIEPKDEFISIYANASGEITYLDKNKEMNIINGVIVKIDNVLDKE
NLSLYQAQLKLLNEKLSILQDYNNKFKTIKGKSDFEKDEKYMELIELKNSIKDLEISIANTK
NTLSKKEITLDNLYLKEFVVKYDYVNVGTKIATAYDISKAKLVIYLNSEDYKDIKSKEIYLD
GKKSDVKIKKLDITPDKTFISAYKLELEIDSKEFGKSITVEFK

>WP_237928713.1 hypothetical protein [Aliarcobacter butzleri]

MINSSFFIVKNQFTDIGDTTYVNQVREDDYTIKLASYLTKNCKNDKLCCEVQNLLDFVTTIP
YKINESIAKSPKQVVEQNFGDCDDKSNLLISLLKVLGYEVYFVLVPEHIFVIINLDSINLSK
KALYINDKKFYILETTATFSKIGFPLKYKLSDIEAVIDPFFKNKKILINNLEYK

>WP_237932924.1 hypothetical protein [Aliarcobacter butzleri]

MINLTFKEKTPPIDRFPNDDIFRVVWAYGSVQKGLTVTGVPPEIHILLVDLFFNTLKNFEL
SNKTRVVKISIAQLDIVRYMTIWKGQKRINGCWENFSDYKSNVRFDLDTTNSSESLNYSK
QNQNKTYSYLFPFNKYKIENIDKQYFVKFTNSTFTKISHDNIDVIIPSMELFTSTYAPHEQ
QIRYKLIQKSLSDTLDDYVKSSIEDSGKYIELVEDKVDSNIVFLAYASLNQITRQRLSKTR
ASLENGMVDKYPVILPYHPTSLSIQGDGFWINENTFFMLRINKYSLPDDYEIVLIKEELDI
EESKKENDKNKSYGQIPRNLDYQLPATNEHNPHRRNGYLSLISEVDLLDDVKYKISKK
VNIKTIKAAEKNREIQNTDDIENVSSGEADSTKDSEKTGKLCIKEENKKLHQSKALDSFL
NDILQMRDTKTDISEGNKIYISTIHFLNEEANFETITYFIQFKDILIARGEKNSFARMINRIK
EKDKSGKTKSKNLFFGYRRCFLLKICLSNGEWFYLLEIERKDDTEGFSGVLLKPDNEFD
KAILEENIMTVITAKGILKNATFKIKNVIFKHAVDKKSGSLIDCYSKNFRKILK

>WP_237935283.1 hypothetical protein [Aliarcobacter butzleri]

MKKIELNAENLGGRFALFCPFTNEKLDNDDNSFEIYEGAGNYLFSMCEDCMFFDAGNN
AEIEKYWKNEAINAIEKFVENHKEDNIIIEVLYKDEKYFFGFLDENNANLSDIEIEKRFIKK
L

>WP_237935410.1 hypothetical protein [Aliarcobacter butzleri]

MKILLIVTTLFANILFANYNYMIQDNGKIDMHGGKGENLIDEKNSLSNKDFKNIGINKPITP
KAPQNLIKEDKKEDKKENSK

>WP_237953648.1 hypothetical protein [Aliarcobacter butzleri]

MRFNQSKFAKEVGCSSQQNISKLIKKGILEVGQDKKLDLEYSLQRLRDFNLLDEKNKLLK
SRTSKEDSIQEVESSLPFDSDTTGYKTLADLTPEEKEQLEKEELESFKELEEKKKEAATK
NINVGDNIDLKDFNYASAKAHREYYMGQIAELDYQIKLGDYVSKAEVEKTTFFEASRKVR
DMLLSYPNKMASRIIGKKDIKEIETILLEEIRYILGNLSS

>WP_237953654.1 hypothetical protein [Aliarcobacter butzleri]

MKRDELKKILSKYYSKFTIESILSGRRKPSIKIRIALNNEFDIPILSWENIKSYLGENISTSII
EDEVQKTNQKYEYV

>WP_237953668.1 hypothetical protein [Aliarcobacter butzleri]

MRLGKFVFNSEKFEQRLHNLAIANGVGTVEEFKFLQSHCNIIKKI

>WP_237953669.1 hypothetical protein [Aliarcobacter butzleri]

MSAVDFSSLDLIPKMLEKMEEMQTELTRELQQLPKYDLTKRADVKIYLNISDCTLDRYI
RMGVLKKGYYHYHRELKNKTSRIIFVSSAIEEFKAIKEKR

>WP_237961270.1 hypothetical protein [Aliarcobacter butzleri]

MLENNFIGFSRDKEYLPKDFDEFNSKNRLRQLFLNLSNNILESYCYFSKYEQKMLSNLS
LEQAFSYKIKSMLPISFIKNKNINTRFKFCINSTKIINNYLYSNNKNEIFISNNKLLPVAKLI
SVCFIENSLQLLIDKHLLFHEFVLKKIKKLHGDKIVIDLGDSICIKSKDFVGVKIYTSWKDIE
VKKPNIQNELEDAIKSIKKEGFYQIYLAYPKNNQFTKQIPVYVKELKNKEYQIKAIPYSFR
SIIKN

>WP_237965636.1 hypothetical protein [Aliarcobacter butzleri]

MSSILILKFFDISIKLSLMKGLSKNKEMEDVVPYNIKMFPIIRYFNVITYPLFLLATTL

>WP_237965640.1 hypothetical protein [Aliarcobacter butzleri]

MKLKLKEICEYFSRDFTASETSKILNLSRPTVNYYYKIFRESIINDLFILKGNTFQVEYIKFR
NEYFFYIINKNSIHLEEHKLLTNLKIFIKNEIKKSLINNSKSNAIRILYNKHTQNFTVVGFY
TSTLGLQEFINNRLKKFRGIKKENIYSHIKESIFRFNFSNNEINEKILKSLSIKQGL

>WP_258271611.1 hypothetical protein [Aliarcobacter butzleri]

MKQKLFNLILFLAIYFLISDISIVNQIELFILLKVKDNESYK

>WP_260873189.1 hypothetical protein [Aliarcobacter butzleri]

MDINAINNNVISGLNSNSSLQLNKTQTNKIDNFQNESLNLSISNYNIQRSEFSQNIQSLN
DGIAISNISMNSIEKQQNYLNTIQEKLQNSLENKNNDIRKSINEDLVAFNQLAYDTKYKN
ENLLVTQKEDNNSITIDTNSQTFSMEKTNTAEFANTIFDVVNNKDLNIDTNLENKNTVS
SSMEKLENTFNQFDNFSNQLKNSAKEDISKQFELYNQKSTENINFGKEANDFSKTNINA
NVGYLAAAQANIVQEQSVRLLS

>WP_260875794.1 hypothetical protein [Aliarcobacter butzleri]

MMEIISNLSNKSIVIGALIVLFVFAGMGAYIKYLQYQVETKSTALTQKIEDNKKLREDFLKA
KEEYAKELELEKNKAAYQATTLKEIEQVIKTTSKVKQEEIKRGVIKDEKDSNFIITKF

>WP_260875834.1 hypothetical protein [Aliarcobacter butzleri]

MKITLEYFSHNGTGLGIKENIDFIPRMYEFIQNLLEKDHSCSGSFIVFDVSYHKIDGVFEC
DVYCQEVNPNNIEEERARIKGTI

>WP_260875927.1 hypothetical protein [Aliarcobacter butzleri]

MEIDTLEDLAKELKSGKTTNAMKLFEDYAKANNIDEELEQILSKKHDCFKCESCESFY
CYDEYSFFDEECIYCCDTEAEDEEEY

>WP_260877056.1 hypothetical protein [Aliarcobacter butzleri]

MIFFRVSQNNIKITDGTLVNLYLKFKAPVSLENETVYMTTREDFNDLKDIFQKVDKDKYLV
KPLNEENIRTNPNFPIELGILNEFEYERDNENFFELKATDIYKQLKNIDKEEVSIAIIGGVG
KSIISQIISSCAALRILYKLLKEIYKNIKFDIFINASNNSYYSRDKDIYKTQDYINNIFPLSINSK

KLCEYDYFIDNSLNITNLLSELNNVDAWLYKFGINYKKIDELEKYNSLDISNYKIQNDLKT
KIEQARKKGKLLLLFHPYSANINKSIPQVIAIDLLKELLEEEYVIVTTLQIDSKFKHNNFIDL
TNESKSINDFIYIISNMDKIITADTSTYHISDAFMIPTVTIFTDKNYAQKIKYKYIKPIFIKDK
SKNFSNFIYENENLTLYKLEAWKKLKIDKIMKILDNF

>WP_260877616.1 hypothetical protein [Aliarcobacter butzleri]

MPNKESENKNPNVEEKKTTDTVDEAIEENSENKDGLKSNNFLRKILIYVIAFLISILVIISIF
YIFDFFVSNKEEKNTQVVIETPTQTTTTPEEPQAVTKQEEPAAKHEEYNFDFNSLDPDKL
NEQLSLLTNKNIEQSRLEKLKAENEKLLLEKKINEPVLKDNATAQNNETTKTENSKTQNE
TLKNNNPVLNQSPTNNEKVTTKTSSEQTIKKEDTSTQQTTETSTPTFIKLINVAKIKGELK
KNFLDKVISINPNVHLCRDEENIIELYFGPFSDDETRKELYNKLVSKGFKAEYELEMTQE
AFDKSCNY

>WP_260878740.1 hypothetical protein [Aliarcobacter butzleri]

MLKTVHIKTASLEDNGARASSLSNNKANIKTIVDGEALAKEIEKQGNLLIKDGYQILSILPI
TSQKIESHSLSATFTSGVIITAAKIN

>WP_260895190.1 hypothetical protein [Aliarcobacter butzleri]

MSEYIVRTKEIEPIIKPEEESYFEKVNEIENVFENVIRKFGSKSLMMILKNLN

>WP_260897277.1 hypothetical protein [Aliarcobacter butzleri]

MRKINFVFLFLLFGFVELFAGNRYDMKSGIVEYEIVGDNGKANGSINGTSKLVFKDFGAI
ELVDEKTTQIIAGEQETERTVSKIVKDTLYTADFDDIVYSQKLVLEDESSIQNIKNRESFT
QMGAKYLGTTETILGYKCDVWQLGEDKIWVYNSVPLKQISKSLGVVQMQIAKTATFNIDI
KDDKFKLPNFPVKKIEAIIGGGEDEAEYANPVKR

>WP_260898251.1 hypothetical protein [Aliarcobacter butzleri]

MQKNLSSKLFEILEKYPSKELMANVDTKVIKYCVDNQEVISTIVDEIKPNCYVVSANSMLI
EYSKDELKKLDSKILRTFSYILIKLFENILKIAKIDKLQTLNNYMLSTNFFSNIFENIDLKKLR
DIALKNYSNHTLVIRSINKTQNPFLFQELKKDGWIALISRQVYIFDDFKRCEKHQNYRWD
KKLLSDKRYIFKELDLDDFSLFEKSENLYNQLYLEKYSIHNVQFKAIYLQELVKKELLHLR
LLYDNQKNKYVAVVGIIGEDEIITAPIVGYDLSYDVKEALYRRVIAYILEYAKTNNNYVLNLSS
GASSFKLNRGAKANLEYMFVYTKHLPLFRKFIWKILSFISNNFYAVLLQRLKL

>WP_260898294.1 hypothetical protein [Aliarcobacter butzleri]

MTVSSYSSVYSSLMSPSTSNISKDIISQNDKDSDSLFSDELDMEEEQFSAIDTDSGGLLS
QNEIATAIDNQLSSYSSSGEMPSKEDFESLLSSLGLDMPKPPSSPQADDFSSMIMSNY
DSDGDSLLSSSEVSLLSKEEFSALDTNSDGSISTDELSSAYDEVASNIQSSSSSRPAGG
GGGAVASSSDEDEEYDDLDTNKDGVVSQAEKDAALGTSSETTTSTSSMQDTLKMFLF
DTIKTNSSTSNSEDLKLSSFKNLMQMMNNQTNNTNLNSYVNNLTTKSSSVFNYA

>WP_260898401.1 hypothetical protein [Aliarcobacter butzleri]

MNSKIKSEYFPIFEILISSNNSKKLSDILKIFHKIVEKKYIDKDIFNYFLKSEIFRKYVNKYLK
LEQIDIINI

>WP_260898665.1 hypothetical protein [Aliarcobacter butzleri]

MDLVIITFVVTIVFFIIYKYDIFKSLATRGVIEKDFSQCYILSYPKRAELHNKGEIYQIKDLDE
FFELNPCLKGKIPVEKREGFDASDPDALKRELEERKRLKEKYSKKKKKK

>WP_260898942.1 hypothetical protein [Aliarcobacter butzleri]

MNIKKLKEEESFFEYYPNGFKDDKLLPIIKRFKSSKFHEETKELFKKENFSQPEIICDNF
SKIISKSPILSLFEKPKVRDAIKSMSIYEKDMFCIALDELLYGNFKDGFEDIVDILTQKDLAK
WSIITLIPYYFSPTKEFFIKPTTTKNVLKYLEIENLVYKPKPTFEFYNNAYKKVLNEMKKQVS
KKLTSDNSGFTGFLRMGIEP

>WP_260899451.1 hypothetical protein [Aliarcobacter butzleri]

MVIRLFALVVIIFVAIYQLDKFMNSDKYKYLDEYAKVSAKLQSGDIIFRKKDDDVLDNSFSI
DNLGYSQVGIVVTGGENAVVFYLKSDENHSFLQAQKVEDFVKSSKIAVYKYFTDVK
NLILSILEFYKNNHDKLYNTEFINEVFFKLHGENLYTDLQNI DNKEIITVDSIVKNNKLKKR
YEIDF

>WP_260899463.1 hypothetical protein [Aliarcobacter butzleri]

MKLEITDKIKQLEIEDIKENLFHYSYDNKSLKALVKNNISKDDISYITAYSSFIGEIYENIYEL
LLKYVLTQDEITRFVLKGPYQAKENHFIKSGLLIDSSSQIVYKSAYKDISEFDALFFTKDSL
YFVEMSTSKKTASLNKRLVKKYALLKMIFPTLNIALIVVTQGSVGLKNFPPYATIWVTKD
LEDKELIEKIIFAKKVKNDVQTLEVPKNDKYIEAYKIKYKKFPYFPTLEWILNTRSQRNPRFV
VDLRFSSAKMSLYFDIYTKLYIGYTTSEEFKVL YEEFDLEARSNRIIVTLEKVNQTQIDIV
YYVKETNDKLKRVRLQENEVS IKDKELDGFTNAEVRFFMKILEEKHHLTVDNIKHILKHIS
LIK

>WP_260899476.1 hypothetical protein [Aliarcobacter butzleri]

MKTFILNNINKLILLFFTLIVLFLASSFTIDESAKKMVDESFKQAVIVFGSAKALNGVISLAQ
GTEINLPFVVVAIGQILDPIINDLVEQFSLIMLASLVSLGIQKILLNFVTNEIFNYILFAFIIFNI
WLFKRFTNDDKLRTLFFKITFIFIFLRFSIPIISYVNDFTYNYFVKPQYNIEVLNDN ILKVD
DVSKINQNTIEQKEDTSFFGKITEKFDLSFYEEKVDEYKNAVDNSSEY MIDLIIVFIFQTILL
PIVFLYILYVFIKRIVL

>WP_260899623.1 hypothetical protein [Aliarcobacter butzleri]

MQENELKAFIKENSPLICEYINSEILKDIGVMSSDFFVRLIDEFFKKEKRVYDKNITADTLG
YYLICEVLGEAKQAFPFFRKDTLCLDEIFKEAKVYFNHVKFSIKDDIFTISLVQTKAGVSTL
DEEIIKFSKDFPMKISGLQEFIKKQTL

>WP_260899632.1 hypothetical protein [Aliarcobacter butzleri]

MKISYHRRRIKTRRIAIRDLIRGIENPIDLAKKLKVTVQTIKKDLEAIKTMDEEDFKFQT
RQTSQEILEKKDLILKMLDDENYYNENGELNISKITNELKTSRATVMSVLNGE

>WP_260899690.1 hypothetical protein [Aliarcobacter butzleri]

MDKLPQRDDLIYKEIEEFEDYELTNCVTYEMAIRNNKNFEKIDNVIRFYEENKDFIFYWIS
EKKEYDEKLFLTGSEKYQIIEMLLNIEILPFFEYGDIISFIDYRIKNEIYEI IKILNNQYKSDEII
IKFDNANIYNDLLSSIILSRIIEKEGYKITTELYVEDEHAFIPINKNDENS DYKQIETIEDFND
FYQLEDRENIEVISKIEPTFKRPKLKINKFKINSIIGEIDFSLPKEELISYISKIKDDFDKDNSI
IKTPLELLGETLEKSDNKRTPKPKAFVYADWFYIYDYWKYEKTQGKTDKDIFVALEVE
NNVRYKEDMLRKIRDKMKYFIDDLGYKELITGVKNS

>WP_260899716.1 hypothetical protein [Aliarcobacter butzleri]

MRTKTKNFFEDLFVLLIVGFIIFFVYIFFFSDDSKTLLTNNIVQEKIEETTKPIINEIKGQI
ENRVEKIVSVTKQQEQKVEEPSQNVEENPIHKHEVINNEIKEEEKKSEETSLNHTNHQE
NMAQTIAPIEKIEETKTEVIAQTSNPIEISKNNEIVISEEAGKIETKTPDSQIQDIQTNENEN
RDTNDKTNVDQFFKNFERKVYDNINKNVDKSALRSGQFVNIRVTFLKDG GYEQLTYVS
GNMGYFNLIKSSIEESFPVVEDSIKGHFPRYYRMKIEF

>WP_260899742.1 hypothetical protein [Aliarcobacter butzleri]

MSNNNFNQIDLKEAKNIIIDSLKYIFVVASICAIVPLILRFDIKFFGNFNQENSLIEYFQLIFL
FSTIVIFVRLSKKRPDLKYASMLIAAFYLVLFIREND DIFDLVYHGFWAPWAGFVALIAIYA
FKDWKKGVLELATY LKIPDMKLMIFSVMFLVVSRLFGMG SFWKHVMKDNVYVEVKAM
IEEGTELLAYGLILYSAYLIYKYLVEKI

>WP_260899744.1 hypothetical protein [Aliarcobacter butzleri]

MKLTILGAGWLGFELAKSLKNEYRIVVSSRDEEKLKIYEDEGFSSYILNEQNFDYIEELLN
TDFLFINFPSPSKFENYLSFLEKIYSSKNISNIKKIIFISSTSIYPNINGIFTEISEINNPSSQIVF
EAENLIKERSDIIFRVSGLVGDNRYFGKRSANKEVEFPLTPINFVHREDVIRVTKFVLENN
ISGIFNLCSNEHPTKKDIYSFNAKKYGFKMPIFNSNQTFNLRIIDGSKIEKLGFIYKYKSPY
F

>WP_260899922.1 hypothetical protein [Aliarcobacter butzleri]

MKKLTYYANKNILFKEIKQIFPKEIDSRKKIDIYSATTIDSKFYAIFIVDSKSRFIRKNAQDL
MELCEKLASYLGHNFKKKELLISSPLCSKAKEYLKQNDWSVRVDFM

>WP_260900444.1 hypothetical protein [Aliarcobacter butzleri]

MIKQLILSAVFANFMFASSLKIDDKIGNFSLTDQFDKIHTISSNVLTIIIVTFQKETLMMVNEY
LSSKSENFLEDHHAVALINNISCTPSIITKMFTLPKLRDYKYTILLIYDESNTKFEKQNNKITT
YSENGFIKNINFVSSVDELERVVK

>WP_260901056.1 hypothetical protein [Aliarcobacter butzleri]

MFEIVPFIVTNLVIALVIGIFIGYLIGKKRNEIKTIKTDNEESMENKKVRYRINPIFNKTSSLD
YKPMVLSSSSKIDNFKKIKGINSQIEKNLYSLGIFHYEQIANWTNKNVWIEGFLELPFHV
RNNQWVEQARILKNGNETTYSQQVENGEIEVD

>WP_260901228.1 hypothetical protein [Aliarcobacter butzleri]

MQKINISQNTIDNFYKQISEKFKKNLSKNEKNIKWSISLIELNSLISKKLKGFRENLDLEKLI
KMEYSDLCCLVEYIKSNQSKTKLTIKEKDIFLTLYSRLNNALFIKDLVDKVCPCYCNRYILN
FQKERKKNATAQLDHFFDKKKYPYLAISIYNLVPSCGTCNQRKSTIEETIFYPYNESFNN
SVKFSKLGKISRDELIKENLDFDEKRIELDYKILSDKDKVEKHIGVFNIKNLYNEHKDIVS
ELLQKRVIYSDDYLESLLDEYEGTLFKNREDLLRLITGGYIDDTDINKRPLSKLIKDISEEL
DLI

>WP_260901348.1 hypothetical protein [Aliarcobacter butzleri]

MLVIGDKLIPFENIFFISSIQDIKNTKANSTLIFNYDEVLLKYVSQNSISSAVIVTSIKEAIYAN
CLSAKYIISNQDLAKEIQKIADNYMFDSKNLAIKSNDEFKQIAKNEIDGAIYEYLLLELSDS

>WP_260901477.1 hypothetical protein [Aliarcobacter butzleri]

MYLFGFGSLINLASAQKSFKRVLTQKDLIPVKIKGFKRVWNALENIKFENNMEVNGVFL
NIQEKKDAILYGVMIKITQEELEILKLREKNYSCIKIKKDDVLSQNSQEDLIAFMTTKEEKI
GKIGDVNTFIPKKYIQIVNEALKNYDEEFKDNFKETLNNFPFPLKGDYSFTDPIQNKAA
REAKNHNESN

>WP_260901653.1 hypothetical protein [Aliarcobacter butzleri]

MFKLSVNKNLFSKILSKKLYVIEKESSNYWKKELLEPIIIENKLTYYIKQINKLLITNGLGED
KPQIVIECLKIDFLQQKSIFEFYLGKILEQKNIAEIEVEDEKDILIKQLLNEKKELLNILNDIKK
SKILDN

>WP_260901761.1 hypothetical protein [Aliarcobacter butzleri]

MKNTLKVIFLGVGFGFLVYLTPEKKVNKNENLTINSIPQYFDIVGNKSYSKIDTLFKLGE
EKYIVVLNHDLSLVFKDLYKKVDKNNIVLVANISEAPWLVKKIAVNDELEKMYKDSKIPLIN
DSNGSFINSFGLNDNKQNRVYFYKLLANGTIEKISQGDVKENAMQNGISDAEIEKYLDEI
IKVFK

>WP_260901855.1 hypothetical protein [Aliarcobacter butzleri]

MPITTKHKYISKYPIKQSDESLILGTIHPHDIGIFKLEFFYGNKNSLWNILGQAQSLKLDNL
ENILIFLRNHKIAISDMILQCDRENPKITSDKDLYNIVLNENLKDILNSQIKTIYFTSGFSK

NNCAKLFFDLFLKIPKNWKDNYEINIDFFGKNIKCVILLSPSGASNIGIVKSEIYLKNKEK
YKSSKTPIKDFKIDFYKQKFTS

>WP_260901988.1 hypothetical protein [Aliarcobacter butzleri]

MASNLAKYARTNKS LIVFSNAFNHVEAFKKFYNI RVKPKEFGYIKIDKDKINLIEESLYCDL
VNGKKNELIRDSLLH SCTNHARYILTSSRFVIFPTKFSFKRVANRLFN GFIIQGAGEVLFK
NENGRINITCYGEAKDLNIKARKIDEEI IKEDLEANF

>WP_260901994.1 hypothetical protein [Aliarcobacter butzleri]

MVLKFKFTYKSGDKTLVKFLDFASKQFDCSYKIYQELDFVFLFIQADEKTLEEFSSKLSF
YVPMSIFYYGVEVDVIENLPKEDSTSTYDDKMISFCPTCLKEVEDENSLDFYNAFKSCE
VCKSFENATFIFENEEIKSHKKLFEKLSQLINEDKKIKIKT LSGTFVFSKIKDIENHKELLVT
NLENINTLIVENATSIVALASIEKPQIEFKINEIYKLKHSIKKEKIDLRFANDLTLHLLSIELKK
LKIDFLNIEDENAKFDYFLDVKSSNNIFLDIPKIVCFDNKKLILNSISYPKKLDTVFSKFKQK
DKAQFMTVLAENELLDKSIINFYISSLNDDKISYYSSKNGLVDILEDLYLPTTIKEVFESIKKD
TKGEKLLKNYQEKFKDDYEIALNTKIDFSKKSFFTYWQIAKIVLNFKEDIVLNASNSLLEK
GPRIDYKIFDNKKVFNRKFDYLPLIKTAMSFKLAGVDEETISLGFIESFAHFIANEIDILHNT
YELEGVSLCGDMFANIRFNQLVEKSITKNFKIYYNKEFVIQK

>WP_260902015.1 hypothetical protein [Aliarcobacter butzleri]

MQLIYKIEFN TTNLYFKYI IETLINEAQINASCKQYKDFIL IIFNDEEKNIENFFLLLEKKLPM
SIFISNSYV VDSYDETLEEIENFN IKNQLTLLTND SIVKIIRENQIDFFNDIEKIKNGGVS RF
ETHNGLKRLFLPNKIKREEFENKGYEVKLLITDVT KLDELFDLNM RDFQLLCSIERPLIKL
KFKPLKNANKEFSSTKFIYAKIPDDKETVLF AKALKENG FNLYLVNDDVYQDGLKV TYN
KEQNIISGNKGLFPKYDFVSRKKFNSSKEYFNEFGGVYKATLAQSAKRLEPSVGVYFS
STTKSSSISLNIPTKGQKEVIVIPNIRNSITNCFDEISAIDEHCSRLITNFIRKYPEVVS AIVP
TNAKGFESIVNICAKVLGLNNAKEFEDLALDTNLKSGIQIDMKLIKVNKLNVLDYRKTVQ
SMMSYKMANVDNQTLAYSFYESLSEFICNYSDEIAKEIKAKDIVLCGNMFANSILLSKTL
KTLSKNYNIILPIEYPLDY

>WP_260902335.1 hypothetical protein [Aliarcobacter butzleri]

MKKNLFLIILINIFLSNLNLYAAKNLYLSYKQIPDSVYKNQRFEVTVKALITTDNFTNLTTTFS
NYSNIELLNENNPWKKISNDTYENS YFFKVKNGNFKLPNIEVNLWNQNLLVDSSQLSPS
LIRYSEIGKS DERFSNIIADNIILKAYKTKQYNNNSALTIIDIDAINSNLEDFKLKNVEEQGL
SNLKEWEDIQNLVYYFVTP IYQKNLTFTYYNTKTNSFKDVKVPLVLQNELVSTQTDLNPN
DSTFEKYKKIAAIVVFVIFLLIFIWKRYKIVLFLT IISLITAVLYNLPNSTGIVKPDSFVYILPTK
NSTIFFKVDKEEKVEVLQTKNGFIKVLGVDNGFIGWIK EESFETN

>WP_260902343.1 hypothetical protein [Aliarcobacter butzleri]

METNNQKEDSNFSILKLIAIVVALIMLIWIIGWCGVWSMGHVSADDFYTKI IKQPAADIFG
SVNALFAGFAFGGVII TIYLQLNEIKATRKELEKTAKSNEKTASANLEISETNKLI AKRADE
KFILDLFQIYCSDYFQTVKNNSQKILFSCVGDKEYCDFVISRLFAAVPLNFPKNSYIKLKE
QISYESEKELLEKEQQYRYKLDELINFFTILTGS DLNKQIISRCDFNYSFWRPLFWMI AKK
QDNRYNENEIVKKYSTKPYFLNVVKELDKIYGFIEFENDLEVW TYFFNHHPKIEPFMDERF
KDEINKKIS

>WP_260902347.1 hypothetical protein [Aliarcobacter butzleri]

MNNYNPKQAYFDRRNKI QKNNDRKRDNHQYSSSIGGCSCNYIVNSTTETKKTRKEK

>WP_260902349.1 hypothetical protein [Aliarcobacter butzleri]

MKKFQELEESLQNQIIDICKDDPYNLNPEFLYVNIYNSNGHTQTLSKVFEVPEILI INIKEQ
GKK

>WP_260902355.1 hypothetical protein [Aliarcobacter butzleri]

MVFYNMNSFKFWLLYPYWYNYPYEKEYTFEQAEKEYLKYLKSHKNYVPSDKPISFLEN
FKAKKQEGDKLYLRSPIRHWYKRAGVEQFILVRDNKIIDSFVIMRN

>WP_260902364.1 hypothetical protein [Aliarcobacter butzleri]

MKRILLLEDDLSLGETIKELLLENDYEVYVTKGNDVIEITFDKEYDLIYFMCFN

>WP_260902397.1 hypothetical protein [Aliarcobacter butzleri]

MICKIIEDDYTFEQIESIKDIEELEKKYNLKISIEDKTYPELYPEIGLNTSYKVYKNDKLIASF
GFQFYYSISDLTSFDIVKICKFKIKNFPKQYESNLDLLKFGDIGSIWYLTEIKWRSSLTIG
NKCHYLKEEKFKEIFLSQDFNKKSYKDLIKLLKYSQKIRTPIAECMYQYIQHHNFPISSYE
RCEKLLSKYADYFEELFILFVTKDACISLSKKEQNYKIIDTLTTLGLNGYWEQKKEDNYET
YYLYEKELKISKENFLILCSLTEKCTLTIEIKYKIITINSFKHYSLTIKNL

>WP_260902399.1 hypothetical protein [Aliarcobacter butzleri]

MNNVCYSILILFLLIIFFTVKKYYKEKNQKIKIIGIGGGGGSNIVEYLLTTYSDNYDALIINSDK
KALKSKKVDKILLQKDNNYGCSSNIVCGYTLITSDVISIKYFIERNKEIYIFVTLGCGCG
TGSLKAIAQEFKNTNYQLNFILTPFKWEGTKKNERANEVVKVLKNDFKNVYIYSNDDL
TYGNLGINECFKIQNENFNKLILESEERNYDL

>WP_260902403.1 hypothetical protein [Aliarcobacter butzleri]

MATTISFQTFPKLFLPEFQKRNSWIVTVYSNENEEKAEFYNAYFIYKHYYCSNCGTVEIT
KKRAKRRDNFYSGHTCKVCKNSDFLNLLSNNEFFKAKNISFELFENQDFYHIQPYIHIPS
INYENKVVDKRIELRGYKCDKKIYNPNFFKNDFKKEENIKYRFTDISINEINNFFLENLNS
MYINENISQKIKFINN

>WP_260902405.1 hypothetical protein [Aliarcobacter butzleri]

MLINILEDACTGLKKEEKSHKVIDTLKILGLDGYWFENIEEKFEVYCLFENELNLSNEDFE
TLCLLTKDCALEIGIRNGIINVG

>WP_260902497.1 hypothetical protein [Aliarcobacter butzleri]

MTINNYMTQPEMIESYLQLLENGKMNFNHTLNTLLPYCVKKVTTNEVLFFNKNGEVII
DFLNDLFYIEGFNKINDIDFYRKPENFDYLFISKYKMEESIVFYEKRITKRSVTKYLQTVR
AFLALLSK

>WP_260902503.1 hypothetical protein [Aliarcobacter butzleri]

MKIQFSKVTNTAGLLNKSFSLSNSDGQVIKESNAFLSSGIAEVIEVNNLSEFNQLDSLQS
NEAVTSGIADEILVNIVKKGEEYPPFYISRTPIYFKHPKLCGILLGDYDPDEAMPEHMILKT
LEEFYDCLCKILPPQFVKVECLIGSGSSNGIKNSNGELVYHSGSEHAYWPINLSDENIN
KLIEHIKRASVSHNLYLKIFKDGSAGMRFAIDLSVLKSASSRLIFEAKPTCKDGLYQDRT
QSLIWNKDSKETLDLSKISYDHLDPWKPVYERLKIENRELIEQTKEAYKASKIEELVQKG
FDITVATDIVVEYITASTLSVKTLVEF

>WP_260902621.1 hypothetical protein [Aliarcobacter butzleri]

MKEGSANLCFIVEQDLEDIVLYLQKEGIKIEEGIVERTGANGKIKSIYLRDPDLNLIELSNYI

>WP_260902679.1 hypothetical protein [Aliarcobacter butzleri]

MYKRINFLIFLVFYIIFEELIWDKFAKPIISYISNFSLFKNLTPKILALNSYIILIFIIPFFLVE
LLGVYAGFVFISGHIILGTFLYLLKIPAAALIFWFFNITKERLLEFIWFKYIYEKLVLFINKIKNS
KAYLLIKEKASIIKKEIKENFFISKSRLKEKIVRIYKLLKSKFVK

>WP_260902790.1 hypothetical protein [Aliarcobacter butzleri]

MLKFLNDKFINSQTKTKIELYLLPLLLLLLISFYTFEEKQEEMISTKNSFDEISNKKFEGSY
LEVLSLENLANKNHITILTNEKDKEISFLKGKSKIIVLENFLKQIENLNNFSKVQSLVLYKK

DENGYFFDLKISFEKFYFKQLKNENELELKVEDDALNKISKEKEIVENKKKFEINAIIDKYA
LINGNWIEQDEEINGYKLVELQMYFVILENETEKIKLEVDHGEYFKNFN

>WP_260902834.1 hypothetical protein [Aliarcobacter butzleri]

MKKIIVLSFLLFGFSNVLADQWDGFFKETGFPRKVIDDGSIVKGKIYQAKVTYQIKNNDG
IKGNFENSDSAQVTVTNTKGAVLSTNKFMTATELRTWARANFTEIFSIIIGDAKLDKKT
MELTNLASVLLDKNLD

>WP_260902949.1 hypothetical protein [Aliarcobacter butzleri]

MVGAIFEGGLKMIFKTITKLSRPYVSLEENDLKFKIDSDNTFKYTLSSIDTKTRHDPYIIDAY
TLSANEIYLEYIHTDIDVSWNGQALSFFISLLKDNIKAKNFDLVEKEEFSHYEFLTYKVDN
SYFLNVIYIYEVSKVFIVDKKAELYEKLLKNFKKDYVYRFEKDSNNIPKIENTLSLVKNA
MNSYFAISSN

>WP_260902993.1 hypothetical protein [Aliarcobacter butzleri]

MLQTKIVNRLQFITQNALAYFSYPSITTKRFIHLGTMHLSSFMFKNALLNADKKTKNNF
LSISKKAILKIIKEENLNINIEELEYFDNKALYQFTIPTKSKSQRAYTLLLTQIRIVALLHDV
GHLPSHSHQVEYALKKVYNKIKTKEENQEVLLKEFTFKENYEEITKNCKDVLHEAIGENL
LKLLFDYELDELLFKTQEKDYCLKIKKLSLLILEEITYEDFDFKVLHEFINSTVDADRLDYIN
RDMLASGYITGPNDHIRITKQAVLVQKEDKFYLSFFDMSLIDIEHMLEMRFNLYKKVIFNH
GIAKTDSLLENNVQYLATKYFEDEKDEEKLNSISMLWNFKNENKQKELDTISMLDENW
LISLFKNRYFDIKNKEILTKEDMKYLYCFEEVLFQKQFRSPWKNLNEFYKVLDFSTVER
YKFRESFGYITQNRNLKLQNALDDFIKKYEDDLFFAYQIVSFSLGISKDFYLYDGDDELINI
DEISTLRKRLKHSMRNTVPFYIYSNKKVLSAKMKMDLKLMLFNIFED

>WP_260903000.1 hypothetical protein [Aliarcobacter butzleri]

MILRALFFIFILNINLFCGYWIDPYEKEFIFLDNRNSPLANYSNLDEAAVYNTIIYEYERK
NKEANLKEWKEELKNRYSIENIEDFIYKRKNLNLRLDSEISEYIKFVEKQESCPTYDYK
PVPTGCEGYIDEALNNIDKTTSQYLKLRYFYLAFLAHFKQQEPLKIYEKYKYLQNDTK
TIVKDWIQGIYAGALIKNGQTVNGVYEFKLLDESKITSHLSYNNFFHIKTNEQWNELLA
KAQNNEEKTKFYALRSLKPESNILEELENIKKVDVNSKWLDVLFRELLNYQLFFNQNE
ETVVELPKKYIEFLKTIKRDDMYLVNLSLAYFSIFQKNYAEASKYSKELLEKYPDSHEAQT
LAYIYLEKLEKIDIKTENEIYTKMTELTCKDHTSQSIHDYTFVILEKLYKKQNDKFNAFLSK
YINYLDMSAFDLELMERFEVFIKSTPDSKLKEYMQTNFSKQVNNHSYATKTRLLINNLKF
QEALETNTSFLNEKIEFNPFTFIKGNNRTGKQDVLTIKEFLTMMIVIKAELEKNPKSVMD
NYLFANALYNLSYFGNSDRITTVYRSNYSIGSPLLQKEKLEKAIKHYNIALENSKDKFEQ
AKLTYMISKAYLALADLSNEKDRWKYYGESKYNYGTIYETFLQKNGAKYFDTLKQDFGD
TKYYQELIQCGDFKIYQKGKQ

>WP_260903001.1 hypothetical protein [Aliarcobacter butzleri]

MKKIVILISLILVFALIVFSYNKTQKKDIQISFYSWENSFGEQNINEKLYIKVLDVNFSTKLEL
LKTNIKETPKNFIPVIYITNETMKNVYYSLLSKAILETLKNYKFDEIQIDCDWSLSTRSNYF
NLLEDLKEKLNKTISATIRLHQIKYYTKTGIPPVDYGVLMYYNMSNIGDFNTKNSILDNEIA
KKYHYNFDVYPLKLKLALPLYSQAIQFREEKAISLFEGVEEKDFNNDFEKLENNRYKVLN
SHYFKGRYIYKDDIFRFENSNEQDIKIALKDFLDLSKNRYDEVIFYTLKYKNKYDLNNLIK
GNL

>WP_260903199.1 hypothetical protein [Aliarcobacter butzleri]

MIILSHRGYWKETQEKNLPIAFERSFSLGFGTETDIRDYKGELVISHDIADENCISVKEMF
EVYNKYDNTLSLALNIKADGLQLKLKLLLEEYKIENYFVFDMSIPDGLGYLKQNIKAFT
ESEYEKVPsfyDEACGTWLDEFQEHWITKEVIEKHIKNNKKICIVSPDLHKREYKNEWQ
HYKEIEKELGIDNLMICTDYPEIAREFFR

>WP_260903205.1 hypothetical protein [Aliarcobacter butzleri]

MNNNEKILTITYFYGTKGCCPAEWADDKIDTMCKLEKNTILITSIFSCKNTSNKVIHYRVP
SLSIQDFRHELGEIKNENMQIPYIKLLFFIPFIVTVGLILDLLQKVFTSGNGGGKWSWFFP
ASIIALYLAI RYNCKKIFTTGGPASAHLAGVFVKKLTGKELICELQDPLTGKDIGRTANS AK
MLNVVEKIIMNNSDKVVFVTKNAAEYAKSKYYGFKAQIVAIYPGSKYFTSSDKNKSEENL
QKLRLIHLGTLYSTRNMNTLIQAIDELIEEGKIKENQIEVLNLGEIYGEIKEHHLSRNYIKQE
SIKPREEAINIASSFDISLLVQHTDSRSEATIPYKTYDYINIGNPILALTNSDELSGLLRENG
HISVDVNDVNIIKETLVNLISNYQNIKKEINPLAIDI IKQTKKILGI

>WP_260903213.1 hypothetical protein [Aliarcobacter butzleri]

MNKPTLIIPAAGKSTRFPNMKPKWMLTHPSGKLMIEMVLLGILKDNVFSRIITITKEHA EK
YEAELILQQMLTYNNIKA EILVINHFTKSASETINITLLEKNINGSFVIKDS DNYIECKLPKG
NFIIGSSLNNKKIEISNIPGKS FIVLDQNSKIVNDIIEKRIVSDIVSLGVY GIECSEKFKKSSD
KLEKNSHGQEHT EYISHVISYLGVNDEIFYYGEVDKYEDWGTLD DWWKKIQYRNRTFFI
DIDGVIFKNSGKYGT VNWSNNDVVLEQNIKVIKNLADNGAQIFFVTARSKNDIKIVEKILK
KENVNYESIITNCHHSSRILINDFANTNPYPSCSAINIPRNGNLEEYIKGN

>WP_260903229.1 hypothetical protein [Aliarcobacter butzleri]

MSNLLVPNSHEHLDNF KSFLETKTPFSFIRFSDGEIEILRNRYLEIGGGKTVFRGREFKN
SFPDFDAKKFDPRIHQ NIRKDLLSSALFRDKKFYKGIPTLHNDAIKDREFLLRLNGGFEL
NMTFSDLFLNSNYLR YRKEIVPLFEKFEDIFVIAN YRAKPIDILQKAHHIHIPDNFFTKYDS
VINEVYEQIENIPDAS LVLSSASSLSNILGHRLFLKNSSITFLDIGTSINDLLSLSHNTRAYH
NEEKSFQKIFYRNKKGYEI IW

>WP_260903233.1 hypothetical protein [Aliarcobacter butzleri]

MNKLVLVISGQIVRENS ANLMNFWRGFINIQRAIH NINELKIVAHSWNPEFDELVRNVYN
VDILESEVQKS FVKEYMPLLDPIDKFENGFKRAGTTWHKVNP NMMLGQITSKTKSIKLL
RKLDLNNENN VVISTRWDIGCSGGKEVNQLVFDYSLD TDYLYFAYFPYVDEGYADMWY
WGKYKYIKRFEAYKEY FINVISGQNSFFDDFTKHGWKM SLPINLKRIKVELYKKLVLIKIL
KLFPFELLKRIFPFLS NKLTLGLKIRLVNFIEFPFITGENS LLLDTNLKTTY SIPESLNIHGILK
SFIFDYNLRKQTRFL DIKDFENSPKGQMINPIYFCYIIYSHSSFDDCWEMAINQAKENLP
SNCKKIYLVSEDSDDT KEKFNEYNFEDVELVTYNSDSQYTDRLIEIFAKITDKFNL CYFVH
EDMPLISSVDEIYLN TLLHFMNNSNEYIKLVDTSYVDQKESHDSFPGLVK NMGGYSIS
VQASLMKLDH MISFLT NFHTDIYGYELLCTRSNFTFS AVQGTKKIGKYLLFNESFPHISTA
ISKGKWCTSEWKNEIEELS KKYNIDLSLRGEC

>WP_260903239.1 hypothetical protein [Aliarcobacter butzleri]

MFA SSEYDKGDIISQKSFEINYP I KISEAIDKIEPLYFELVGEIFTKIKSCEQLNSKKQDESK
ASYSLWLDNEDYFIDWSWSADKIKRFVDAVGYPYDNA KAYLNSEVVKFIDVEIVEDVMV
EHRERHIGKVIFIKNGIPVVVCS DGYIGLIDIRDENNNEMFINFRSRFK

>WP_260903241.1 hypothetical protein [Aliarcobacter butzleri]

MNTIAFYIMNSKGY YVLKNFINKFGSDSVSYVVSSEDKN I KK DFFDEIKELATKEKIRFFN
RFENIASTEKEFSGYKFAIGWRWL IKDERNLIVFHDSILPKYRGFSPLVNCLVNSENRGG
NSFVC

>WP_260903291.1 hypothetical protein [Aliarcobacter butzleri]

MDLNLDISNFQKFLKDEEEI IDEFLRKYIINFRKIEDEESQKIENFFT LIKSICSGDIKVPLQ
FIKI

>WP_260903331.1 hypothetical protein [Aliarcobacter butzleri]

MFTKESLYINVIKYNQLKLEYKKLRNDEVIKSDNSTFLVDNDILPQNIVQKINTLQKEDD
FSYISTLLLSDTTKLIPKSLSSKIKDCEIVEFNKDYDIVVLKTTLFETQNYFGKTGIDYIYSA
FHIMNQHIERNKSKNELLFFIYNNKAFVLIVDKLGNIVYNETIDLLTFDSVKRTHFYEDDLE
GQKLFDELYFLELTQTIQKILDDLYSKRKDEVFVQKVSILHVLKILTKEQLSQLSQELLLKV
DDYSVNVDEEIFKLAKQKDSKNSFIKHKKKRKRDPRIYIFLIILLTLLSLGFYKIYSTIDFNP
ILEKFNIKIGHQKVLES�PNHVILNDKIKKRVKAIFDSVPNNVAVKEVNIDENNLELKVFSI
QEENLNLLNLALNSLYVNNESKIITPNAKTNFDVAVVSKNEIEINTEYDNSIKDYLIDEQFN
IESVTEQLKILMPETAIVKYIETIDAKKVEVFSYKVAILITEPNEFFELINKLNEELYSINLKY
PISFKRTDNGIEVEFNLEFNQLK

>WP_260903347.1 hypothetical protein [Aliarcobacter butzleri]

MDKEELFQARTNPDLKYLNEIRVNSIAKDIALMYETLDSMLVLDLDEEQINELYQEILK
LAFENVEKIIKNKKLKLEDEHLFYARALYEAIEKWSNENFDGAKELLFVMVNLIEDELL
QKALNVLIIFLSSKMELDEFYDSKVDLEKASDEKYGYFIVNFNFDSQKYLKENKKVLEQE
YENLKHLLIVEHK

>WP_260903407.1 hypothetical protein [Aliarcobacter butzleri]

MERRNRSLKALNELIYIDSLDSFEKGNALVNWYNDYLSSENSIEEFDLELRDLKTLEELFF
RNINFLKEIKEETRQELIRIRKVKNFLKN

>WP_260903426.1 hypothetical protein [Aliarcobacter butzleri]

MIVAVKRNKSQKILKIIIVLLVSCGAYYYNDYVETARINAEKQKLEEEQKRVLKAKEEEQ
EKIKQEAQREILAEVEKAVNLIGQEYVRDVKLIKKNKVVVFCEPDTNIDALVVRYGAMALIK
KTFDEIVIVVDIDFILKNKL

>WP_260903428.1 hypothetical protein [Aliarcobacter butzleri]

MNIYIYGNQRFKKEIYKILDSSQIKKIDNNVIEISNLNDLKETIKAQPKDIYLIDDEKIIKDD
SLKSKFFAPKDGVDQFLVESGVNDLTINSLNEIPEYIIRKYELEKNLEDIKKENKVELDD
ELSKLLANETQIEKKTTESTPEIKDDEIVSGVNLNELENLIETTEETENIDLHKLDNNDKITN
EFEDFNNDFGLNNISFDYDDDNILNDNSLSDVDLSQILNSASIDEDNYEFLGETFEDVN
FLEELFPDKAEFLATFEKPEKQVEDDKTEMTDEFVEFDDEEVHLPDEEIQEVADLEED
NFENEKKEVIIIPMNLEEDEESEKFEDLEGENMNDNEFSELDLNEKDLMEALNYKAD
EIVQVPKNQENTQIISNTNNKETVILNSSNVDEISQLISKLLSNKLEITIKLKD

>WP_260903464.1 hypothetical protein [Aliarcobacter butzleri]

MTINNNLNAMVASELQFQDMATNLATVANTVAEPEFQEVTSDLIDSIAGQIPQIISYSANV
QNIELQGEMLNTLLNIKA

>WP_260903481.1 hypothetical protein [Aliarcobacter butzleri]

MNLLLVCETPIIEHIFTLVCKKMKIDLTIQKNNKNVKNYDLIVIDQNFVDSKFNKIKNFCKRI
GAISSEELPMERLRDFIIPRPFLPTKLEALLIEQITYIKEDLTQKEPYKEGVFEYSPEDDIDI
LPVIDYLEEGLTESISKAPEKVVQNEYEEDDESIVSLSKLNAGGVLDSSSELNKNINDILHED
EIYNGITLEKRDWKDISSIIDDALEEVEKEYEFDLKNPEMKTYNLVLSKYGIDELRPILLEKF
DQTIIDKIASGQTIDLRVSLRDINR

>WP_260903614.1 hypothetical protein [Aliarcobacter butzleri]

MIVVHAKGNSQIGIGNLSRSFELIKYLSKSKEDVIGIFECDNELFKRYQYKNIFHSNNLNE
SINIIRKNQCSIYISDLVNPDKGWSNILKGMGIKYLHFNGLEFGFEPDILFVTDNFDYEIT
NNKFKIYRGFEYYIVGSDILKYRRNILIPKTSIKNVLICFGGADPAFFSEYFAKRINDSKYN
YNIVLGPAMENSRKENIKNIKNNINIDSPMDMIELLLKSDILVTLGGMTTYEAMCLGVP
ASAVRWSYLEYNVKSFGKKNMITDLGSIEEAYENLLNLNMDKVNLCQNAYQIINGNSLK
NIKNVIDSLEE

>WP_260903696.1 hypothetical protein [Aliarcobacter butzleri]
MQNIIPEDILKIQKKLATFEKDSRNYKKYTKILAKHIKSHNMQKRVNSHIKTIESMEKIEKD
NI

>WP_260903722.1 hypothetical protein [Aliarcobacter butzleri]
MNKFENIKTSDFIISFGTFFENNLELKDGVLKSIEKNQTKFVYMFIDNANLKPFTYQFIK
YEVGSEEGICALLLDTFAKNYDEKTKEFINNLDLGYISAESSAGEEEEFEEAFEDYENSNS
KILIGEDIKNHERVDNIIKLLATIKKYSDFDLILDEDLENKINSCEDFDLEEIEELKSFNGT
LVYSLVGVDLPVLQASQTFANIAKVKGGENIQIISKNEKINKILKIDEKLTGTVAILNVKNSP
NEYKYKQVKIEKE

>WP_260903966.1 hypothetical protein [Aliarcobacter butzleri]
MNKIYDLLIKSIKYIETESNKYKKKEEDISSKRLLKDILFDLHEIRRAIENSKKHK

>WP_260903969.1 hypothetical protein [Aliarcobacter butzleri]
MPAKEIEKKATKSVKQSETKTEKTAKNAPIKSKESANDDWENF

>WP_260903979.1 hypothetical protein [Aliarcobacter butzleri]
MNLEEFAPKEALLNKNEIFSFNFEDKKYWLKRARETKPNRIQKFFYRIFPFELLIPALAKD
SKEALLFETTKIEKFELGINVPNIVYKSEDDFFVLEDCGRTINSFLKRDIEDKFYYFVEKL
LVQLSEIHNLKQFHGGSQIRNFTYKDGKIFVIDFEESFEFNTTFETLQFRDFLLFLLSFTK
LKKLNFEVNYNYIIHKYIELTNNKNVIYKLKNIGKRLKFFIYLSQNSFLKKFLGSDVINFFKL
LKILNSLEK

>WP_260904011.1 hypothetical protein [Aliarcobacter butzleri]
MNKNFFVWDNYSDQPQVIKDKNYKKAMRKKHLKDFIKLFISSFFILPIAMLFMKFFKGKV
KFSNDDFYGLGVNLDKGNCQVQLVEELQVKNLIIRLPLCDIKNIDSYVDFAQSFNKTSKK
NILLNIMQDRENIENHKLLKENLELIFIKFGSFVSEFQIATTINRAKWGFFSVKEYVDFYKV
AQLSKDEKFSNIKLLGPSVIDFEYYYNVAMFNFDIKYDIVSSLLYVDRRGSANKQYL
FFDFKNKIDLLFSLVKLSSKCKSNEIYITEVNWPIKNTAPYAPTSEKECVSNEEYTKYMLE
YFEIAKESKKIKRVYWHQLIAPGYGLVDNRGGEIIKYPQFYAFKEMIKKND

>WP_260904139.1 hypothetical protein [Aliarcobacter butzleri]
MFKQVKSASFVWYYLYKFRKRVTLIFLLLIILFANVIYADIVEYLLKLEKLEYLEIALISKWLI
IFNIGISYILITLTKKEESGNGKKEKIVEKETIKKEKFTQREKEFLNKKNIRSKADILLE

>WP_260904213.1 hypothetical protein [Aliarcobacter butzleri]
MKKIIISTTFLITLIVVSIYGILFTKKGNFISSYLENRVNEEQKDLNFKINNFTLTTKDVFDE
ATLNENSYINISGALSFLKKNVDLKYDIKIEDLSIFKNLISEDLKGTFFTNGIFKGSESESIQ
GFSNIASSQTKYYMNLVDFKLKDIYLDLDAKIDELLAIFNKPLYANGNLNLNANIKNIDKN
SLDGLLIANISKGLINNDIFNKEFNQKINTKISFNGDINASLLGNIEVKSDMTSSVADIFFD
KTLIDIEKNTIQSDYKIDVKNLAKLEGLIGKKLQGEFLTGNILKDNKNISVDGNSDIFDGF
FTYKFELKDYEIQNLNLNIEKAKLEKIFFMLNEPIYAVGNLELHSDIKNSNIENLDGSSSIKI
SDAKIINEVVNTVFKKNLKDILTFKSEIKTSYVPNQAISQIDVNSNIVQLNMNKAIYDFSKN
IFNSDYNLNVFELEALESFTKVVMRGADVGTMTENSENYFKINGNSNLASGQMNFNLI
NHDLVLNLNNANLKDITHMMFQPEIFDSKTNLDLKYNLLDEKGTNLNALLGGRFSENNF
TNIVNQLAKYDLTKDVYETAVLSSKIDSKKFITDLTMKNKNNQIEIKDSLVDFDKNIIDAKID
TKIKNNSFFVLVKGDMNKPTISLDVKNFLKNKIDKKIEDNKKIEEKLNVKLDKDSEKTK
ELIKNIKSLF

>WP_260904318.1 hypothetical protein [Aliarcobacter butzleri]
MKKLVSLSLHKYWITADAIKHVVITKIEEDTSNLPNKIAEVAEIHSSFIKLSVLYGLIYVVIEGY
KELKYTNEQIDTLLVQDSFVDALRLFRNSVFHYQKEPISEKALKFLELKESEIWIWREIHVA
FKLFFEKELAIKEVLEEINTNFDV

>WP_260904417.1 hypothetical protein [Aliarcobacter butzleri]
MCENFLNLVYHDVELELKVSIDNQIVWLSADEIAYIFNLNRLAIKHIGNIYKDEELE

>WP_310982223.1 hypothetical protein [Aliarcobacter butzleri]
MAVNHLVNKNWWNKRDNLKNKPSLSYRTLEVINQIMSDEEIALGTAIEKLMTTPNLYKE
TLEKLKSDYPDIEEE

>WP_390880872.1 hypothetical protein [Aliarcobacter butzleri]
MGETYTYILDEKYRWQNWAVLKVNAKKDIINSKSGDDLDFANKELFPYLKCFKSITEN
Q

>WP_390880874.1 hypothetical protein [Aliarcobacter butzleri]
MKETSSFVAITKGTLKIVLVSFSSFSILGVLITKDEKSHFLSFIKSSASR

>WP_390880881.1 hypothetical protein [Aliarcobacter butzleri]
MMKKIFVFMFLSVSLFAHNLIMNVIDNKDNTITVIGEFSTGEDAAGALVRVESLISGDVLY
KERLPESSEVTITIPKEPYQVVLDDGGPGHTIVKEGIAPLEGFKEELKSKNDSTKKLSVAQ
NANNEWDLITIVFFVLCLILFTMAIYFSNKNTNKILQQLKEN

>WP_419244159.1 hypothetical protein [Aliarcobacter butzleri]
MKIPSDLFENKQLKLSPLLIKSYIDKLNVLGKFEESKVNQLQGSIGGNEEDEAINHFVGRF
PNGAVRSQYVVINPDGDLNHASQLATVFSDKTLKILYPCGSGAGLVGLTTFFTLRQH
KYYPSPPLNIEIIGADYSSDALSIITEMMNSISKEFLKVGINISYSTQQWDATSNTEMKL
MHQFFATQADEHFVFFSNFSGATGTNNNFDDSFRTVLDYVATIGKNSTILWIEPGNFKK
AERLFVKIGMLIDSIKKLWAQFTDSNSDTCEISTREFKFIHPTSLNELRGNISGLRLIIDGQ
DR

>WP_419287173.1 hypothetical protein [Aliarcobacter butzleri]
MSLIIFEDVEIEIVEDNKFIFTQTTSEVAKAYFGEPQNSKQAELFSKQIRQTRLNNKQEFIE
NKHFFYTYDNKNRKTIVWTKNGIVRLGFFIKSERAKKFRDWAEDYIVNQKSLVETNIQIE
LSELRQEIKDLKKQLILKEEDENPFKGFYTPNWAFRKRENEYAYS SRKDWMLLLNECERT
LVTERQNRKYKQLLISGASK

>WP_419299238.1 hypothetical protein [Aliarcobacter butzleri]
MAEYLTEQEAEKIKAIIPGSIKGGCIEVIKREPISRLEHNAVFAVIFKHSKENSLLMVEAA
KKLSIEEPKLLFSGSEVDEKFDMQNSAVFITAIVK

>WP_419316602.1 hypothetical protein [Aliarcobacter butzleri]
MNEIKTNKNHMIAYPIISWVNKDSIKISQGRHRIRAIIDSGAETIQLAIKEKSLIIKQFLEVEII
DKFIFLIK

>WP_419316604.1 hypothetical protein [Aliarcobacter butzleri]
MSKKEIDDALTRVNEQIQQINNLYQKLEKSYSINKAFIDSNSEESLKTLDSELNDFRAKT
DEINVMLLKLKEGFDFLTTLQNNGKNRIQYVQDMLSDKILEDIKDKSEAFYESYNQIFNT
ENGDLTEDFIKKYERINNLYKKLYESTNNKKSMSEEELEEKIDNFFEQYSILIKNDDGTSM
YDEFINKNNDFN SKKIKLDTFYTRIFGNEAEDTKSLNNELEERLNLKLDIEKEAKKILSLS
SDAGLAGGFNQKVDEVKKNKYVSLGVFVVLIIMGIFNFNTIDFKNLKDIDLISIITRFMINI
PFLWIATVANINLNKYTKLEQEYSHKESLAKSFERYKTEIEKLDRIDSEKSNLMMNLME
LNLEAFKVNPNANSIDKIKKDSTLLDIFQRKNE

>WP_419970274.1 hypothetical protein [Aliarcobacter butzleri]
MSSADNIINDFNIGFLKTADSLRSRINFQENSESSSYEETLNQVSSSPIDPSNNYLQVNN
FALDRQNMVIEKVIDTASVQETNVNTQEEEQLSYKNDFLKNMGVDLQNKAEMLKAL
LSSAE

>WP_419970277.1 hypothetical protein [Aliarcobacter butzleri]

MLEENINKIACIHNICGTLKKKEFFNDIPYDFDIFFIEDCKINECKKIEILFRKVKNQGSLIF
QNEKAKASIKRITSYSINMK

>WP_419970278.1 hypothetical protein [Aliarcobacter butzleri]

MNHFVAKAIPNGYSWTLASRCGQILSDIEDKFGKRDRNFTLLGIEFSADGPQIWYPNNC
KNIIIQLGLECLTNNSQACYQLAHECVHLLSPNEMRKANFLEEGLATYYSKYYMKNFMS
ETWTTNDSKYLKASSLVEKLLSSKPQIIKELREIECNITNINKELLMLKTSIDILNEEEINILV
SPFY

>WP_419970279.1 hypothetical protein [Aliarcobacter butzleri]

MLNIVTDTNVWYDAIGNDYVLNKKIKSKGGMCLVTPINILEIVSKIDINNFEIRKKAQSIIDN
ADRYLMSNEIYLARYWGFKVNDEVYWKNGVLTLSRAPSYNDLVNGYIDHIDKVTRKQN
LKLLKDWREYHYKDYNKGVIINGIQSIHSGYLERQSNGNLKKHKKIKTLFNINDKDIKESF
FACYERAKMVLQEHKINPPESPKNIMLTNAIPKIKNYVFAYMEYLRFLATTPAKPDKNDL
GDLDLFLYLQNRNWLLATSDKRWIAIAKKVCPNNLLDLINER

>WP_419970280.1 hypothetical protein [Aliarcobacter butzleri]

MWDFWLICFVAVGLFVIIKYGEGRHQIISIMILIFLGIFVTIKIKGFDEISQTKYREVIDLKE
TCIKYQSCADVLSIDEDNKIKKYEDEFSTVLEKELEKDKKIKELEEKWRKEDLNKEILE
QIKKELKDKK

>WP_419970281.1 hypothetical protein [Aliarcobacter butzleri]

MFKTAIKEFLVFSEA EYKAISNCIIPLILTLTKNLLVGLCWVLFITIIYKFIHKNKTENAKAF
FNLLKVLSLILIGTIVLFLLTITLI

>WP_419970282.1 hypothetical protein [Aliarcobacter butzleri]

MKKTALIINSKGSVGKTPTSFNLAYDLGMNIITNDKSVLIACYKDKTILTNQFELIENSVYD
CGGFSAPGILNIVQQVNIVIVPVFNDPSSLIQTRDTLKQILPIAKKVIVTTKTENKDADTIK
NNLDKKYPGLE YFNPLTKAFNHTLETGKSIKHLVETDKVYENWFGNFVQNNYIPFLNA
VKKELEL

>WP_419970283.1 hypothetical protein [Aliarcobacter butzleri]

MKKTVNLILLGIVIFGLSGCFLTPYDNEFKCQPSIIGRCTSSIVDTYNESIQEIDSNKDNK

>WP_419970284.1 hypothetical protein [Aliarcobacter butzleri]

MKNRFLSLAVIVVLTNLISGCSSKQEIKVEKGVCPMLNIKNTTKQFDEAKGLIEGLQGT
LPDIVTIYIDTLKHYNKVDNVDKYISKDGIREFSVTPIYGTLVALNYFATPTVNTTKESVKM
YQEAYKDVLTIDASNPNWCELESYKHITDKYTNTKAN

>WP_419970285.1 hypothetical protein [Aliarcobacter butzleri]

MLKKIFNLPKNYMKVQNENSRLNKEITDLKHYNKNLEEVIANIGYDLSGISNFILNKTVDE
FQDDIKDIQDLGTNLNGIFKFYDDTNFGLDRKAFNAEFIERALFQLLMNKPNSDYSLIK
AIRKTNTKSIEKI

>WP_419970286.1 hypothetical protein [Aliarcobacter butzleri]

MKKTVSLVLLGIVVFCFSGCVKENQVLNTPSTNSIKRNVVKVEEVPLPYVKESKFIKIL
ILPFENAENDIDYGGYIETKLESSKFIFSDSLKKKIIIEEDTIGGI

>WP_419970287.1 hypothetical protein [Aliarcobacter butzleri]

MIELIKNILITIVISLIVIVSYDKYSSKDNKNDEFIIFSGKNII EYKKLQIKKALLNEDTQNKE
KELEELIKTMDLLLEDISKTYNKPIYQKEMIFKGKVRDITPYIEKALEKKGLL

>WP_419970290.1 hypothetical protein [Aliarcobacter butzleri]

MKNKIFYLLIFTNLFAANEGIEVGKNLKGHFSNVQTNVAAPLTSNSDFKTVNGSKSFKAN
LTCNETIKPFLEISYSGTSDITINVSIDTDLNGSKDKIFSFDGVS GVGVTNGIIKCS TNSWKN

CKYFLWNISNNLTLSETVLTNLGGPYCINSSCGSLSVNQKINVLDITIGGAISSMYQSSN
SNYLITKTQNDGNKIVFYGQNYQDCTNYKEQAPSKSHDLDTTNVIASQSKDENSIVYYV
LNEEVKNQNTNKFDTVDKQTTVIKNSVSVKGDTTDYTFTYSGKTQNEGDSWSTRNDN
AKINIDFLNPNIKYCEIKYLEENSILFSDGQTHHSSSGDTKTWKTIVECTGNDYSICPVD
TSKGEIHKHPCGQIDNFAEATSILMAIDEAVDDFSCSLK

>WP_419970296.1 hypothetical protein [Aliarcobacter butzleri]

MVQHTIRVNKELDEKIRKYAALKQQSISNVLRELIIQSLDISTQENEILKEIKSLRADVRDS
HNFNKKGFDRLASLSVKNIGIKIFSIWHGILIQAFLRSKDKGEDDNRCMQSREEFAKTATS
FGIDEYKNSKSDN

>WP_419970297.1 hypothetical protein [Aliarcobacter butzleri]

MSTTDENLPSQAQRNFALLIAERLEIEIDENILLNKDDLSEWIKHEHNNLPSPKQIELAEQI
AEKKGEELPDNLLEDSESLSTYIDENIHLINSNKPSTKQISFARNIAKKLKIELEDELLEDK
KLLTDWIDEHNKPSSNGTGLKKKKVQ

>WP_419970298.1 hypothetical protein [Aliarcobacter butzleri]

MKLKIIKPKTRPIQIEPWFFKYLNEGQLKVVAAILSHADIKDRQSNFSPSNRVIAFYCGFG
DIKESSKAYEEYQKLNDEEKIKFKNKKIKTAITVANIKKQLETMGLLKREFVGPKGKQIVY
MNLBLEWKKEQYLKEHDEFFNDVKYENNEDEKENIAKELEELQRLTLEGNISQENLAN
RLKNLSYKIDANNTEKSQVPLEDIDKVATYIMNTTKIQNKIDEGTIENKEAYKKSIIKSISNN
TFNGIEKYEALVKKEEKDMLETLTVSLEENEKETFYQKNILYFKDLIFTNNIFLATYQTKD
KKISKQYIISDEKIKYYLHSSYFYTKQNKELLDNYNQAIKDYQEMLQKPQEESTSNTS

>WP_419970300.1 hypothetical protein [Aliarcobacter butzleri]

MFKTIDVNLDFKDLEMIKNSLSNQIEDLEKQNFVGELKNEIDEYKQLLKKVNKKIDFILGN
NQ

>WP_419970304.1 hypothetical protein [Aliarcobacter butzleri]

MKKIIVISFIVSFFISNLF AATQGIDDNATNKEVSNLISQVAPKTKNFKWSCETISSDKIPFT
DGEKGHIVKKCTIDTDIGITIKATCKYFVVSKEYIGETECISGW

>WP_419970305.1 hypothetical protein [Aliarcobacter butzleri]

MENFVYKVTGKLFLGLIAGAILWIVIQMGLSGVASIYNTLSGQKFQETVFKDYSKYLTNE
MNKQEELEDDEILKITDHYNRKANNKFKEIGYSIILEDYYVLSMNEIETNDIFIKNKNKINKLI
QILKKEEPYLNLPDKEKIVLKNLNSSIKNNSVTIKDNLQDLEQVLEQRYAEYKRIDIESE
KNLLISYISITITIFIGILSIISPSISINRIIQFFKKER

>WP_419970308.1 hypothetical protein [Aliarcobacter butzleri]

MEEKEFIKISNRCLSLCYDLAGKSKDKNKVVELLVKDVFKKIPTDNFESTCNSLRLNISNL
TKAEQDVFEAELEIFLRQHFGVPC

>WP_419970309.1 hypothetical protein [Aliarcobacter butzleri]

MNINDFISSNKP RSKKSIFDEHLEDINKLLELNYSQKQVIEYLKAKCKNKTGLSEQNLSF
YLKKSKNKIIIRTKNINKDKSGNEIKKNLEKKPIDIFANLKS

>WP_419970311.1 hypothetical protein [Aliarcobacter butzleri]

MEKYVSDIFTPTSSADINYIERKSLDTRILSALHTKGKQIVIFGHSGVGKTTLLRKS LQKI
YENEIISHCMSGITFESLVYDAFDRLNKYYLDNTSLTHKNTTKQSLTINYLSIKATINASQE
SGDSENFKRMVNTQITPQRLADFLGEADCCWILEDFHKMDEKEKSKLSQIMKVFMDKA
VDYPRLKIIALGAVNTGREVV EYDSEMRNRVSEIEVSLMKKNELREIISNGEIFLNIFFPD
EIKDEIVDFSNGLASICHSICS YICEEKGIETVDGKCLQLDENDLSGGISRYMDEETDSL
KHKFD TAFNRMLPQKKNT ELIFRALLIYDSDGATEEQLYREILDESPKFNKKTLSGHITRL

TKDNNGGLIMYDTSSKKYSFTMPPLYKTYASAYFATNAEQYQISSKSLKNKISKLAYDAIV
KEQTEKYIKDS

>WP_419970312.1 hypothetical protein [Aliarcobacter butzleri]

MDIVSQAMNKVESYKEKIKSEIEETSVEKRIEYYICELYKLEVERKKINDLKLEKDDLKVK
YINNKKQPNRLNFNLLNYKALLFYFIDKFISDTDNPLSLENYKNLCEENKEFNSLFNDKG
KIFINTKYTNFPHLIGYKEDENNPYKDTNKKFIEKIFYETNLIKDFTSHGCKKDKIETFSWI
WTTLNQPIYVLTSAIKQGSKLEGDVIFVSKRSIFKGNNKEIVYHYVSLKINSEKNVYVI
NSHHPLNNHEFKLQFDIDKKIYEYKF

>WP_419970314.1 hypothetical protein [Aliarcobacter butzleri]

MKKSLVVLGFFTVFAFANESQIQVAQIPTGCVETKLTEVTSILSCPSGEYKATFYTYSNT
GTRNLTYEAKFDKIGEVKPVIIQQISK

>WP_419970315.1 hypothetical protein [Aliarcobacter butzleri]

MKMKFFNFIIIVLWIFIIGIVLNFFCEKYSFILVGLAALLASASVMKNIANNTNKIEEQVKRE
LFDRRKKIIFEMDELYFLFANHLNFNKEINDTSNLEAIDSFDRTSFIEYMKEKSSLDNFNKE
NHLKYIRGIIDLLSDAEFIFEKDLNLLSPIMNTLLIYYSETSKSEEILAGKSLSSKELYNQLI
KFCNQRHESIRLV

>WP_419970316.1 hypothetical protein [Aliarcobacter butzleri]

MLREVTTELCKGDFSGLVKEYQVWQWDLYGGNWMLATFKTKHEAEKFKTDKENEAKG
TPCKYTAFSIEEVKY

>WP_419970317.1 hypothetical protein [Aliarcobacter butzleri]

MRFGTKLKLKDWYHDFITFEKGDILQVAEYKHKYGMRLLHHPGIDLIDFKYNNNSNRDK
KIEEYFEIVEEFDDRLAELEKVILDYLDKGYKIGADGLGFKVNITTLYKWKLMHVIFLNP
KRELVFQIITETPKEMFDKA FEHFGVNKEENTIDDDLHCPKCKSTNVSCACFGENDGCN
CRDCNHSFMIHD

>WP_419970319.1 hypothetical protein [Aliarcobacter butzleri]

MIKYHGTPLTPQKIFIQALKDRNVLVSFANPQDLEIAIKYCNKIMLDNGAFSFWTKNKEIN
WNKYYSWVSKNYEKIDYYIIPDVIDGTEKENDNLINFEFFMKVRFYGFHHLYSKAIPVW
HIDESLERLSKLMQCFKYIAFGSSGKYSRLGTENWHNRMNDAMKIVCDENGKPKVKIH
MLRCLNPKIFTQYPFYSGDSTNLARNHHIRGHVNILNGIEKYSSPKTYKFKIFYKTKNLF
KDSA

>WP_419970321.1 hypothetical protein [Aliarcobacter butzleri]

MLISLEMASSYLDTTKDDLYANPKYRKFIKQSKNSKFDIDAYYKSIENKQKELDFRIDMV
NFAEFVLKKIGENKFLTAIPTLKRQGIKKG FENSKFSLNEALLINQTFKNYLKAYELDNEE
NNKTFIPLEKRKPLTTDFIINRYWTNKRTTLEIAQELNVPESWVQKEIKRLKLGKKENGIM
HKGRKGFVMSKEQREKRQNPQPHAKPIVQICPKTFQIVREYSSKGAVERYGFSRENV
RAINNGGLHKNFLWALKGFEQPTIKVVLKRGNLETCLRASKYKRPSKEELNKFYIVKNLT
LDECANIFKCHRTTIAHLAIKYQLKKRTKKIDIKELERLYVDEKLKAKEIALKYGYTTKSIAT
YLSRNGIKKRSNKEGKLCLN

>WP_419970323.1 hypothetical protein [Aliarcobacter butzleri]

MAENITVQPEDVEVFIDAFKSIGGGHLALQVAQNQLQAVKSTYLNKKSSISINIDIHKA
NDEMILTGTTKANLPANKITGAFFVNQQTF LPSRNRPDQLVMTFDKNKKEIL

>WP_419970324.1 hypothetical protein [Aliarcobacter butzleri]

MILRTCGLNILKDRIEYAVVEWENNHPIIISNGTIYNKKIGFNLFKITKNIVKSFKVDFTAVD
VGLYNSKENIDYIRNFKNIAVIKGMHQVDTFNEILRKSVLKRIDKETIPYYLVSFKVARHNL
VEYNRIDIPVNDIMSICYMAKEIKGII

>WP_419970327.1 hypothetical protein [Aliarcobacter butzleri]

MRT HGVYIPSDYYRELKFKKNNRTKARAFMEYYDDNDMGEHNSVRFYAKSWGVAIGT
AHGWIDDFKIEIDKYYATRQLKNDEHYSYAKNQNEHFENQNMNKIEPTNNDNIEIVKSN
TEQNEQNQMNGLTASLSSNINADSNESADENLDSKKKSYSANFEILWNRDCKTSNK
GRSQT IYNKKWKT TTDIKIMLEAIDKYKSSIDLT YLKDFDGF LNLGLIETYIPRAWVIDSKE
QKHLGWFYDSENKFISDSFVPLKLESSYIADYIANKRFGYIGA

>WP_419970328.1 hypothetical protein [Aliarcobacter butzleri]

MINKDDIRNMIDKFSNLEQKQLPFAQILATNDLAFATQNREKVETLANLAFKRNIPTIRV
TKATKSISFAEIFLNQKSWTYYALKQH YLGDRHSKGL ENYLKSKHLLSNEFLIPMNGI
KRTASKIIMQELKNKNLNFYVIPSRISYSNSGIYQRNNQKHNRTIMLFKIVRKAKYKKVLD
LETTLKKEFQKNGIKYFKNRLEYAIKTAK

>WP_419970334.1 hypothetical protein [Aliarcobacter butzleri]

MKADLSVFYNADEFKAKCIYKGNEVAILYRKNDLEMFEVNFESIKARKVDFEGLEEGDV
LEIEGVSYTVINFSPEKDFQISISIKEK

>WP_419970335.1 hypothetical protein [Aliarcobacter butzleri]

MKV KALQPLNYKGKTVEKGKVIELDDAVAKK LIEKKAVEEVKEQKIETKS GEQK

>WP_419970336.1 hypothetical protein [Aliarcobacter butzleri]

MKTLGDRYIGGGKVFFFTPLKKDGT LGTEFEIGE VQSGELSFNVEKKEAFSKDRVIKQLV
EQVVT KIDSTFKFNTQKLKTENLV LAKMGEKEDIAYAIGDTLPDGT VATKAGTYVSIKMA
ENPIQKGQIKFIGDEDGASKPVLILYSVALAPASGFNYFTEEFATLEFEAAVLKTDEGYGR
EYWMEVGE

>WP_419970337.1 hypothetical protein [Aliarcobacter butzleri]

MAKDKNLPLRTKHEL SVLIDDVEYKFTYIAVNKQIQQTLEKFKEEQKQAYENVDNKRAE
LKDLYETKSLNEEILKDSSFLERVIIIEQKTLISKISTLEKEIRELG NNLQNQLENDLEEYFK
RKFELCVVGDGKVSFQKAIDDAGISYVVIDAYINESLRNSVEKK

>WP_419970338.1 hypothetical protein [Aliarcobacter butzleri]

MSNDEVRLRIKIDAKSQELILMNQQVKDLGKSFS DTSFANTFLKRINIAGYIYAGFQVIN
NTLGDIRRGIEVNKELQKLTNSLT MASAVMISNNDIYGN AISVQDKYRIAQIEASKATEL
LQKANINTPHSMKETVQIYDAMYFGMRKVGATTSDMVEITEKLSIAAGNKIGFDAFLSA
MDGISTGTVEANSEMGRFLSSIGLSNEAIKNSSDVVQLFKDKLSGFQVIQDFDTKMSNL
SNSTD MF SKNLMKIPFDYLESKIPSTAALFDSWAKSINEINVYLSNASSLSTYDELINKQY
QLLGQISEVKNDKFMWDSEQKTKLKELNSEIIVFQKLTNIKKDEDLLKNVVTNVDTSEI
DKLVNETLDPYSGKIDEINSKWLSN FNILVKNGKDTTKYVEAWAKALDDVNEKEDDKNK
KALEALKKSATEQN KAYLDISKIGMSEYEKALFAITEQTKSWLEAGVKTN DALAAQSKLI
DELNNKKVIDTAKEDLSYERLVQLKSDSYEKEIELANIAYTQKALDIQGLNRPIEDKEKL
LDLETQLYNKTLERV GIDNQINGLDEASNSYQDMLEAQIDLLDATNDWNSNLTGTAAL
ADVASATGKLSKLNLTNLKNEDKLRTEYEKNKLKFYDNEEKLKEIDLKYTKDKATLDEKN
ISATLLGYSNIAGALSSMYDEGSREAAAFQIAQSSLALVEGTRAILTAGTGDPTYAIPRMI
AMGAMVSSLLSNIGIAFGMNSDTETHSGIGLVAENTGTGTVLGSNEASESISNSLNILED
FAQPQFQVLSEMKNKVKTIADNISGVARILVNNSDFALGGGFIGSSFTKQNVYLSDSLK
ATMPIASFVDDIISKIPIIGNIAGLSSISGLVNKVLG SVFGKTSVKTTLQDAGYVFADTLTLD
AIEEGISSKAYQYVKIKKKKSVFGSSSSTKYKTYYG EGLDEETSNQFSLILGNIYDSVIT
AGIALDNTKQETEKALENYIVKLGKISLKGKSQGGQIQELLTNIFSAQSDNIAKTAFLPLNEF
QQVGEGMFETLTRVATGMEEAGFYIKRLGQDFEDLKYTEIINKQGDVGFEALYQSITKF
EEATYPVNNNLLLIVENLDATAEELYSIYVNLDEL RDRLIYLGHEA QGLSSDMIMGAGSIS
ELTDAFSSYFDNFLSSDDEQLTYNTQQ LIEQFNSLNIALPTSKDGFRALLDSIDLTTASGQ
ELYGRIIVLNDAFASVANETAKSIEELNNLSFDSFISVVDKANDTFKSLKDTALSFINSFSS

SSDLKTNLISYNKKRAEFESYFLSDGTLKDGTDYDKVKSITYDLSNVSKTLASNDDYLK
NSLIDVFSNDINNFDFAQDVMKVKIVDGLGDLLSLNFEQVIALKDLFKNNSISKAELETLG
LEKNQLDKILEYINNSSIISNNESLEKDRLSTQTLSYNDYVGQQEQVDIVKLLGVSYNTA
KPLIQNLQNLGQLDSSKLF SYVSDLVGFKTGSSENYDLTTFSSQIQSLNPYLSVDVSTILEDI
KKQALLNKQLKLNSYAVGSTSIEYDQIAQIHKGEVIVPKNFSDGIREGNLMLGDNSSIVK
EIKNLIEISIQGFQVRKMRKEVELKGV

>WP_419970339.1 hypothetical protein [Aliarcobacter butzleri]

MLLVPKDEIVLLSSNVPTIEDGTEVFNSSKTYNLEEFVQKDECIFESVKSENKDVPVANQ
TSPSWLYKGKVNKLRFDDYMSLTLSNAESIVCEFRVSDIDTVAFFNLQAITVKVELYDR
NEILLYSLEKKAYKRSVANWYEWTVQKPIYERTLFFKDLPTLDCRLKITIENPNDFAC
GYFMYGRSLDLGLTLIDPKPTSSIRNLLSKEKQSDGTNFSNSRLYKRVVLNVVVESSR
VTEIQNILEDYTVTPCLYVGVERDDFNALTVFGYYKDFDKPIGLDYTQYQIEIEGII

>WP_419970340.1 hypothetical protein [Aliarcobacter butzleri]

MNSDIAKLTPFDASKRALEGTNFRNANYSWGWLAQHASEVNLIDDLNIYKNGLRDI
LSEYVLENLEENVVNNNAISKINISDIQDVLDDSTATDKPLSANQGRVLKGFVDHINEILTS
DDTSLDELQEIVNFIKQNKSTLDTQYVKLTGNQTINDIKTFSSSPIVPTPTAGNQAVNRD
YIDSFTGATITKTGSATFTGEDQIITMTGIGLLDFQIGDVIEVTGSTNNNKLFTVESKSSNY
LVVNYEHRGTSMPVPIKRLINETASNCTIKLYNRAKNAPIGQQGQGWCSPASGRAKDIEY
TNNTKREISTAISWVSGNSGAFTIFRVDGFAPQYASAGSAAGGYTYAVGETTVSASSKY
SLQLPSGTIQYWLELR

>WP_419970341.1 hypothetical protein [Aliarcobacter butzleri]

MLYQNKENQIYSFTELDEKNGFIPKDLKPLTETQLKAYENKPEFGEWNGSEWIADSEKI
EKARVQNINSYTSQFIYSKYPQPKQSSANLGVYDEAYKNEMVAFIKRIIDLSNEAIENG
TSLDFKESL

>WP_419970342.1 hypothetical protein [Aliarcobacter butzleri]

MNYGYVEDELAIKMAKRICDCIGHGKYNTAVHMIETAVAETGLGKIEDKTDAAAGMGITQ
FDKIPFNDIRNRSIKLRPIILKELGVDISKVDWDDLRYNIFLSLLFARLLYWLKGEPKPTIE
ERAAYWKLHYNTKLKGKGTVEHYLMMNEKYGVKINI

>WP_419970345.1 hypothetical protein [Aliarcobacter butzleri]

MEKSVNFEQFINRHFKISIAFFAIGLFFGIVYSLNLLGFIIDSETLNPVNMRAIHISLMYGF
VPLMLSYLPFLINKEAGISNEGLRYLNLYTLIWIYIFLVFMVMSLLLGNRGLAFYDFAYE
LNFLAFAGLFYILALYKFIKLYKVLPLWIKVCLKVVTIAPFTLLILMNPTIGQVESTISGPHG
DNTLGMSLALIPYIYLIKLLNEGEFKARWNILWIIPTIFYFSSVLYRIFIGHLSYNQEWFLQ
YLTLLYVPLLYRWYKDSNISDVAKKALLVSILAFLFVDVEGNILFIPEIRWVFRNDLIVAH
AHVAMGIGVFFMVISMFINHIKELHKNIFLKIYILIGILGIFTALSISGFTQAGFNLLETHLWI
FRSLFGVVAFSFIFAFIKINTSYSKLRLYNLIGILSDGIGGVILILLASFLYPILGFSFSGVY
EYVFTFVSTTGIIHYLALKNESYELILTNSVIRVFASSMFFALYSSDKLGIEALACLFDLSF
VFIYLIFIQKKEFLCKD

>WP_419970351.1 hypothetical protein [Aliarcobacter butzleri]

MEINYTEKYKNHYPEFDFIDEYYIIKVNPKKFDEYWQKKSYLEAFPNKSF

>WP_419970357.1 hypothetical protein [Aliarcobacter butzleri]

MSDKVRVFEIAEEVGKTSVEVMQKAKFVSIFSGSFQLTFQEKYFLISY

>WP_419970360.1 hypothetical protein [Aliarcobacter butzleri]

MLFKYNFVNHDAEILQKLEHIVLDVWCNAKGKNFNLNKIKEENNFREIVKTKRVSLKKHI
HDIFKICSNLDDTQLTYIRNAFNVNNNIQELCINTINPVFYDDLSSKISSVFSEKISSFFNN

LYEKVFNQKPFYINKHYDKFFESNKAICPFCGLVSLQKNSLVHREAYDHYLPKEKYPFN
AVNLKNLLPMCSKCNEYKDIKDPLFDSGRKKAFFYFGVNPEFNIEINIINSSVDNFLDL
SFTSPVMQEEVNTWNRLFVLDERYKNDFFYAENNFGATILNHWYSCSKRDAKYVENE
MYLFEQNPYIDKNFLKKSLLACIRQDIFNDNL

>WP_419970361.1 hypothetical protein [Aliarcobacter butzleri]

MDKHDNGNIEYEEYRKIQIKKWIANGMPACDAEQLMYESENDRYRGDLMDQHYDITI
DERADEYGGFGLTEDDIEKYQE

>WP_419970362.1 hypothetical protein [Aliarcobacter butzleri]

MMKNLLSNYSESHNFILDEIINKLKKEDLDKLEKFKKNIFDFFK

>WP_419970363.1 hypothetical protein [Aliarcobacter butzleri]

MSIKFRIFTKNCSFCNSVLTNWDYRYKEKHYCRSCYESSFISKTCIVCNKHKHKKHKSKE
PICKFCEVTNLSCTRCSKTEFTVGKILKNGVVCNSCIKYYQEPKICSCCNKEKLNVSNI
LDNSHKKLLCTSCYNKFLPICSSCGYRRKTYNYNEDNKSICKICYEQGYKKCISCTSLIP
AGYGNICRECSNLKTLNKKVNALSGAFSEYFINSFVDFSKWLLKKRGSPFTSLKIQHYY
KYFFMLDELALNLKRVPNYEEIVSKFTILETRKYLLVTTFLDEQNIVNINLKIEEFANLDMI
NRYLDRFSKGSKSRNLIKEYYKYLLEKLEQNKTIRSIIRLSLTPAVKFLEYCNNFKDKTPS
NFILEGYLSLYCGQKATITGFINFLKNVKNINISLTNIKPFKFKKVVTSKVILKQRLLDLMRL
PSIPKSKEQLYYRTLIGYLNIEVPINIFINKNDLKKDKNNNTYILLNKQNIYIEDIN

>WP_419970369.1 hypothetical protein [Aliarcobacter butzleri]

MISKNRYTLYFYTFLLVIVSILLFKVELSLSISYKEALNVFINNSMLTFITKASLYFLGQNDIA
LRLPFILFYFFSVILMYKITENYFKYESDRLISIIIFMVLPGLVLSASLLVNSAIIVTFFTLIYY
YQKYNKHLYILLFICLFIDNSFAILFLALFFFSFKNKDKTLLYISTILFVLSLYIGFPTDGKP
RGFLIDTVAIYAAIFSPVLFIYFIYTIYRAGIKKDRSLSWYISITALLISIIFSFRQKIYIEDFAPY
VVIAIPLMLKTFLHSYRIRLEQFRKVHKIMAIIGMLALNVIFTFVNKPLYLISEPKRHFVY
QYHFAKELAFTLKEQNIDEILCDDEELQLRLKFYNINKGENYYLSTKEFFNYDEKISIKYY
NKDLFDVYIKDLKNLK

>WP_419970371.1 hypothetical protein [Aliarcobacter butzleri]

MKKLENSKSKINMLTRTELIKSKHKNNNKT SYKINMDMVNCITSKDNSVGIYFSLPTSFN
HNENRN

>WP_419970373.1 hypothetical protein [Aliarcobacter butzleri]

MRVLGIRVEPKKSTFIVIERDIDDNYTLNNEEVIKVPIALSFPPEQLKYIRNTVIDILREYEITF
AGIKLTESIASADLNRVQFEGVIQEAFFSSSEVKDYFSGRKL SIMKRLGISKTNYDSILNGE
QEYPIINWHRLTNKNLREAALVAIGAIQ

>WP_419970388.1 hypothetical protein [Aliarcobacter butzleri]

MSEFNINEIKEIITNRKKLTNSFNYYNEVLNWIKNEEAYVVKINNCVFLLLKKNKFCKFY
FIDEYSNMMLANDFLMTYSKNYLISMEITTKDTKNLEIINSFAKELNFDYYSEFARLISGQ
NNLKNKDKDKDNFLLAEKKDIKNLLETMNKEFDPIIDDIPSEEELISLIDNKSIIKYIEEELIF
IQIFEYKFGSLYSRMTWIIKKFRKPKYTIDIYNEIDSYLDYLDINNKNIRAYYWVDVTNKNF
LIGQKLGSKPDGLRCITFLYNK

>WP_419970411.1 hypothetical protein [Aliarcobacter butzleri]

MTKEEFCKRLKDINLTQKEFSEITNVPYSTLNNWGFHEIQVPKWVGPFIEHYEKAKKYD
SIRKLILESKEIL

>WP_419970424.1 hypothetical protein [Aliarcobacter butzleri]

MGLNLIKYNKCLKHQEIFGLNKLHINYMYTKKWDNEENIPYVLKTHLLDSYYCLPERPD
MAFTFLWKCMNNIYSTYQRKNSTDDTRNSISDSALLEFISKGIFLKLNDKLMYSDKEYTL
KDIKSYINDIPQKVLNFVSNYILKSYVIDQKLTDKRYISSYKTFRTRFPIIHEALLKTYGN

SFLDICNPKIVNYEVVFDIKEENLQKSKDIKRSLSSESLKKLLLGNEIELTNKNNTKYNVKID
NDEEFIKFIIFNILYAIGNNTLHGKIASRLNSKTANGKSFRASKYIYLLGYMFLSIMLYVSNE
LELNDLSFNFENIKYLK

>WP_419970426.1 hypothetical protein [Aliarcobacter butzleri]

MSNYYQNKFDLKLKYEISEAINDICNLYLDNKPCKLEKYKKTNQFWYFIKNIKFIEHMD
NHILTLSLIKGIKEQYIFSNDLFELIFQKDKEILQAIKYSKIFLKSSEENFINIKNFYLSKNIYL
DFFKATDILDNKYNILKNKVNNEIIRLKSFAFYDLIFYMSLYTMKQTNKYTLTEYENTGDI
LTKILHDRLKEPDKKRSDYKFEESGIRIVDLLSKNKYNDGLQKLETIINIYKELYLFENTTIV
TFCFDDNFQFEIINEELNLKVIDINKYKKCIPPPFVKTI

>WP_419970429.1 hypothetical protein [Aliarcobacter butzleri]

MASKTVKSEIFEINISLNKAQKTIYNKVSNNKYRFWETYDFLKFIYKNEVDFSDIFMRDLF
YFLIKVNQYTSKITSECYSIYSSKNYDTSLSAIVPLNSIVCKILQAVIAKKYSLPIFSLEKLI
FASLIIFLKSSYHCRFRYPYRLNKCIEDKITNGYINAINSRNNSFEFIFNLIETELKKEAEIL
NNNNNNKRLLRVLNNKKLL

>WP_419970430.1 hypothetical protein [Aliarcobacter butzleri]

MDNVKICETLTKLNVKGIKKAfkDFANFDIDARNEMFKMQRTHFHKLKELHKDYSNETL
SQCSLVIAIREYIKLIPTTECFIRQGNVERMLMERWSYIRKSKLEKKLSFRIIAKNLYEKFG
FKVEQSYICKIWNKIEGDLKNGK

>WP_419970447.1 hypothetical protein [Aliarcobacter butzleri]

MCKFYKNMNHFFHSLGIFLTVISMLVLIGSFIYGGFYILFFQGNDYVDFNSVLVYIAFWAIL
LATRKSIDSKSSNSLFELTNKKKDSGIADESK

>WP_419970448.1 hypothetical protein [Aliarcobacter butzleri]

MNQNRDLKYSKTNEKIVPWTLFIIFLISIPILYSIEKVRFDITNDFNSNKTICKVHDIKIEV
SKDDGWIIDDSYKFVKGPTRLIISRCETKE

>WP_419970449.1 hypothetical protein [Aliarcobacter butzleri]

MQITVIFLTLITLFELKIYKSNIKSLKSYIGYYKFIKSNKNIKFKKDEKISIINSKNKIVKTSSN
SFIVSTVILIFILYNISGTVNILLILLFILSILKYIKIKKYGNVYVNCYKN

>WP_419970450.1 hypothetical protein [Aliarcobacter butzleri]

MRNYILILFLIIPSIILFFSNINDSKEAAIFLFIGGLVVSFLNYKKDKDERVMRVLNKWL

>WP_419970451.1 hypothetical protein [Aliarcobacter butzleri]

MKKITLLSSGVALAALLFTGCAKNSTPISLYQAPKDDIVLNIKQDEVKKGTLILQNGDKIFD
NEGDIVTSFKVNNKLYYIVQSLIKGESHFVKVNSSKGIVEEFKANKITWFNDDNKFVLAV
KLERNKTDDIYDNIYEFDGNKFNLINKNLDTNGYFIDDDKLTYNRIVSRSGMYIESLFE
QFGNLTFLSKQYVTNISTDKKIDFKIKITNYEIGNNKPIILGIRNDIIITYSTGSLFTLSLPIII
IEAYDMKMKNKAYTIYSDNDSKKIQFLNSGNDVVLKIFDNTKIQSEVFYQNYVEDFKTKYM
NESAKTIHLNSLKEIKNISDSFKVIPLKTYFKNISGNTVNQMLITFQGSYLMNISSTEPLF

>WP_419970452.1 hypothetical protein [Aliarcobacter butzleri]

MDKEIKDKNSKTKVYYVDNNYEQTREQLNKLVEELNNNKIVPPKLTSNVNLNNRNVYY
EPTFINIFASGRDEQNNTNNISLDFKFKLDENSNIYIVVTNKKYSSNVEAYIDYENIMRGIW
SRWLWNSYDKRDEFGVKGTFGSYSINEIELKNSGIIKFTTKKERVNRNYTPLIKKQILDG
GYEFVDKIEDADKIVEIEFGRDYNSEIRELKKLGRFLDVKFSTSKSNFYMEQSAMSVA
GNLSNSSSLGAGVGIGLALIGALIPNDSLFVPIFIKVIDKKDNKEFLIRNLVGTDLMTYDKK
FMSDEIYERVFENSENATQELRRIQYNIYSGLIKDIKNYQQILNDKK

>WP_419970453.1 hypothetical protein [Aliarcobacter butzleri]

MRGSVYYYQSSQLVKQIFQEGKKEDKINPNHEHYQMVSSTYKTMESYRRVWNNFFNYL
KEHWKIRNFEEKIEAQHIQAYMDYKIEYYPSKQYLEKISAAALGKLEIALKNFSKNIHKIEKYY

DFSIRQITILNEARDLKLVANNNYHNRAYKKPMLLISNLKNPINQLAAKIQLEGGARIEGVALI
KPEQLLGKIDKVTQVEKGIIFTKEKGGKQGEVLVSLETYAELKNYLSLNSKFKINRQDYY
NDIKQAAFISKEVSEGSGLRWNFARRRMFYEGKADYSYYDSLQEVSYEMKHNRASIT
EHLGG

>WP_419970454.1 hypothetical protein [Aliarcobacter butzleri]

MLPINRLDKFLFICLYNFANIGKLHIYILAIYITINIYFGINDGQIAIAFVFCFMMLILLAIDLND
KFKREFNRYKKYLKIKRIRSYKGL

>WP_419970457.1 hypothetical protein [Aliarcobacter butzleri]

MAELVKFNITNNMIIFININQIDQKSRANRIQEEYTVLQQNIDTGVDSSRVSEVVNSIIVN
FKYLYDENFKYNQKSCKDTLETGLGLLKVFNGYKEKEFINDKIFASFNDFLYERIDSLSY
PINKNDMYEEICIEILKSNKLHHDVYNPWWGYSRDYNIFDQPMRDKFCSTHFQKVLKTL
SYRSANNPKIKNELYLSLIKKEILNIKNKEQILLGNS

>WP_419970458.1 hypothetical protein [Aliarcobacter butzleri]

MTKKNSVILKRLIRQFSNGNFHSLKSLIDFKTKSDVDVIKANFNLYKNTQLSNIEKHL
FPENLSDLKNYPRIVKTTMERELLWTAFLINNNVNKINEYLLFKKEYESYVFIGEYHEALK
ILNLVKEYFGYSLWLIQNELILKQKIEGLESQKDYAKKLKENSNNKTFISFFIHFFSIKCED
NITSNNFKTILATWEHLGKMRQRNLKIA

>WP_419970462.1 hypothetical protein [Aliarcobacter butzleri]

MFIIKEYSMAIKLDEVNKILYAYDIKNNVIDENSKKILTEANNLIYKKIKSHFKINTQDFGLHI
DHYTTEEDEYLETVEIENIIKQRSLNKNESKKMITQNEMLNYLENKLTSSKI

>WP_419970463.1 hypothetical protein [Aliarcobacter butzleri]

MQNEKMQILGSFSQGKITKDELDAKNIESDLDMIEDKSNSKKQTD

>WP_419970464.1 hypothetical protein [Aliarcobacter butzleri]

MFDFKNIIDNELYKKKFMESKRYSTRIEFENIFESAKIENEKEYYDSPAIIKKIVLEIKGEL
PTITARVYNINLVFTKVNNGGKLSLKEYSLLTGEDYITLKKILKNA

>WP_419970465.1 hypothetical protein [Aliarcobacter butzleri]

MIKSFVQKILMAASKKIRAERIALELSQEEFANFVDIKYSTYKTFEQKGKITFENYVKILIKI
NKEEQFNKFLEGFEFNDQKERANKKNENDNIYLPKPIEPSQKYIILDKKLFGEELFYSVE
DGHRYEIPNFINIVLNKWNEKRLMLLLKYFGPERLASHIIQQKDINLLKSFNKHKAHYKQ
LNN

>WP_419970471.1 hypothetical protein [Aliarcobacter butzleri]

MNNFIKIFFLFASLLTGCYHNYKIDNTSQKESYKTLNELSVVIEQTDTKIINAQRTNVHY
VNWGNGTGMSPVFTFSEPLISNESCKSLNKIYFNKIKNKLPLNLIQLFEDKNIIVNNNQAT
KKLTITIKEYNCTNDIYLLQASLFEDKNLIYQNLFILDSYSNSNSFKTFYKDEKMDINKFFK
VLIEDLENTMKFPLKNSY

>WP_420061005.1 hypothetical protein [Aliarcobacter butzleri]

MESFEDFKKKYEFKYEQTSCLIYEMYIRAENIKKEDLNIDTSFNYSFSDAPRIKDIYLNYS
NSNMVTLQNIINYIPELYIDAIWITQYHVHQQQLISINDNLSHESIKNILKEQKEIDFFSNIL
SKINPHISRIFYNDEFFEMENVHKLISFRDIIDNIENNLDVNEDKKNFFSSEVETEINKLFE
KMPKTSTYIYQYNLAENIYKILEERTDYKDIEKNKSYLKIISKSIHNIIGYLLDLQQELKISLN
DDIESFEIEISGFHRNIQNHNLNFSYPLNYLENEYNKEEKHFIPQLIESPYDNSYIRITKKY
VQDLIKNYLLNFRITPNFKRPIFELNKISPLTTLHNINLSLPIEELTSYIQLNKDYNKTLNIE
EKTKEIHHNKQIINVEKHLTDLETAVKILYIDYPLSKKKIEKDEIKIWAKLKISKSTYYLFFK
IGTTYINEKKVLRII

>WP_420061009.1 hypothetical protein [Aliarcobacter butzleri]

MQNYFYKIKVETLLKYFFISSLFFVLLFFVADFFTVYYKYSTAKFIFLDERRIFLEKNILKLS
GVTTILIIIGIFLKLKRDIKFYLSDKYLVAFAIFITYNILNGSEL RPMFFFFGILITMFIYGIAIKLI
NQNYIEYNFLRIKKFIIYILSIFLLTPLLIHFTHVLLTNEVYYAFEYVPQLYIVDSFRGFTLDRI
QYSFLAGILILFLLFDKKDIKYNKIILGLTIFAIFLAMSRAVIVAIFCALIFYYYIIENKNKSQSIKF
IIISIIFILIAFVSNRMELFSDGGGRMMLLNHSLDKIFESGYKSFLFGSGDFYTTYLNGLY
PHNSILQSIMDFGFIITIFWLFLLYRFFKILRNQAKVMFIYIFIFGMFHAGFSVFVFMPTLF
GYVCVLILNSKENINL

>WP_420061014.1 hypothetical protein [Aliarcobacter butzleri]

MFYTLLDKSNDEINKYSDAKKKMKITEKKYEEDLNKEFKEIKELFFNYKIIKKKIFLSFKSF
F

>WP_420061016.1 hypothetical protein [Aliarcobacter butzleri]

MKPSKEEQFLKIIKFMPFSVFVVFSIFILFLYFENKKTFTKEKKEIEEKYILKNKELNFRT

>WP_420061017.1 hypothetical protein [Aliarcobacter butzleri]

MIFSFFIFSNEEKIEQIENKEEINIDILKHKYKFQSFQEKLDLIFQDINSNSLDLQSLEFKQN
RLKLILTSSKKEDLYQFLEKNNKNITFSSMNLLENSNLYEAVIDAKIFE

>WP_420061018.1 hypothetical protein [Aliarcobacter butzleri]

MKKILPQEKLTLLIEVSEKIDNKNLKNFIFTNFKLKNITTNKKR

>WP_420061019.1 hypothetical protein [Aliarcobacter butzleri]

MKTTISYKTTNILEKCLKQENIEVISNKGFFKKLFNNKKYADVVFHSGSLDEKSIKKYKKI
QKSQ

>WP_420061024.1 hypothetical protein [Aliarcobacter butzleri]

MENLFFVISILVLLGSLLFVMVYALFFNNEYEYFDFNNGLLYIAFWAVLLTAAVKIVHKSPD
SFFKIK

>WP_420061025.1 hypothetical protein [Aliarcobacter butzleri]

MEVQNEKMQUIGGIFLMFSKGKIAKEELDKVIAIENDLSTLESKK

>WP_420061026.1 hypothetical protein [Aliarcobacter butzleri]

MQNEKMQUIGGIFLMFSQGITKEELDKVTAIENDLSTLESKK

>WP_420061029.1 hypothetical protein [Aliarcobacter butzleri]

MYNNIVLVADIFEHTEENINFNSTTLEKPSQEYIDDVVKALTIYSKQVFCNSPKELNNYL
VKNSVDFVMTIYGGEISRNRLALVPAICESMNVKFLGADVYNRIICQDKNLCKTFAKRFN
ILSPNSILYDENDISLIKSLKLPLVVKPNYEGSSIGISNKNIVNTFVKAITLIKELLEIFKQPII
VEEFIGGQEVNITLVGDNKNINIFEVIEDIHIEDINFFNNNLYTLEYKQLYCEKFSHKVITDK
FDVETKNYIIDMYRHMKGVDYLRVDGKILNNKFYLIELTPDPYCGRESSFSKAIMSNGYS
YEESIGLLIQNCSKYYYQTQYSNEIIRTL

>WP_420061031.1 hypothetical protein [Aliarcobacter butzleri]

MEQDITCKKEKELFFSYMLIFAVGAIFLLFIWWLYYDNKSDKKRLKTHLKIKN

>WP_420061032.1 hypothetical protein [Aliarcobacter butzleri]

MTQNSERSLSLPFIVLYFHLNERANLIDDFNNNKELICNMGSLKIDVSKADNWSVDKNS
FLKVQLIFQLQNVK

>WP_420061033.1 hypothetical protein [Aliarcobacter butzleri]

MVTN̄KIFDRVEQRYKITRFLNSNHNNIIVYGESGVGKSSIIKSCLFNDNKYNIEDVISYSF
LENSKKINATNFIPFLKTYKSFRKNKKVKLSSISTGISFIGVPTISASFSSVSQDYEIDED
GIDLLMELLYESGIKVL̄YISNIELASNIIDINALEYIKKSKKIKIKTIYEIGTLVKSDFNSTFEE
WLTNSSIKLKIKNFNKQHSCELYSFINHTKKIPINIFSKTKGNSFHIVHYFDNIKHQSINEIV
SAKLSSLSADEMKVVIYLYVLGGESSFNEFKYYLNIDNLEYILQILHESKIILLSGDSFLFY
HAFFMQYFNSQNIAISITKAREEIINKFFQKR̄NQTLKDFLITINQFYELNNYDKIFKYGWIIF

KKLYKDQNYVIALNVLELLIESDNHFENKNVKKLLIILQLQLLVLIGNGQKARMIAEKHENLL
EEDKIYPFLNSQILYQENNFPSNEIINKNIFNIEQNHYLRAVVLGYNISNLIAMGDENTKN
SFISAIESTNSFKDDLVEIIFASKMHESWSFGIEFYNNNTLKNNNINLYPYTKAKILHNL
GLAKLLSSHAQDGILELKKANEYFEKSESSDIVYNLNALALYNIVIFDYNKAKSILFDSINL
CVEQYDKFAIFSNLGSYILLEKNFEMAEHFYKAYKVTDKDYPLKDPSPVQYQYMNFNLSI
LYLSKFMWNKNKAIKYLEKIYIPKSMKYHKERVNKLNIKRYLLLNNKKISVFRNEYNGER
DWTG

>WP_420061034.1 hypothetical protein [Aliarcobacter butzleri]
MTDDYALEEYKILHAIK

>WP_420061038.1 hypothetical protein [Aliarcobacter butzleri]
MEKSSSFASKKLTFFTLFLLVFSTSLFAGSTAGGFESLWNNNAVDILGDKYLGYLVAGYLLY
EAYRQRVANETGKAVERVIYAGAFGGFATLAEQTAGALL

>WP_420061039.1 hypothetical protein [Aliarcobacter butzleri]
MKKLEKSISNKLKLGKYSLFELLIPLCALLSTTLINWEKYVGEAEYVVRGLLFIFALEFWK
TVNRLKKRRVRSYKAHWLIKAKITHLNHFSTQKQFIG

>WP_420061041.1 hypothetical protein [Aliarcobacter butzleri]
MKKGLLFLLLATGLFSQDVVDNEKIISLEISNKNSENLFIKEPITDSVFTKRNDGLIVKRNS
VNVDREFLVKFPVVGKVFEMSADGKERVQVGTKYADQIADIFFYGKETGTYIFRLKPTE
NANDLVFNFLNQNKLNDISKEKIYNIEKKDSYRDIIIENQKAIFTNNKNSTVDKFKKQTI
NKIALDDDNQIVTHLSRYEGASFLHDIYEIKSKIDNLNVGSQNLYKYITLPPSKEEKRAISI
LLDTVLNKGETTILSITKDLE

>WP_420061043.1 hypothetical protein [Aliarcobacter butzleri]
MKKWLLIGLCATLFSGCGLLPYKTDYTCPNAIGGSCGNALRSYNGALNDVYNNIDNSE
YIGVAK

>WP_420061046.1 hypothetical protein [Aliarcobacter butzleri]
MINLELGKGLKFFDKTKVFVSVVIIAGAILFLFQEEIFKKKSVDNATIRTMFQSQLQK
QILEEKIKDKDQITNLVINFDNDLDEAILSITKKFNVEIHASRAFYSNAEKVDLTSAIQNLE
ERGYVFK

>WP_420061050.1 hypothetical protein [Aliarcobacter butzleri]
MVKIVFFLLLATGLFADNTGNNTNRYVVKNFNTNINPLTSDTNFTTMDGKKTFKANISC
GNSTKSFLISYTGTSINVSVKLDKDLNGSKESLFNFNGISGVGTNSIVKCNPNNSWNN
CKYYGFSYDGNLSLTLYEQSRFNAGGLYCINSSCGSLATNNKVDILNSLGGAISSILSSYH
NNFMVTKTSNTGTKIEYFGQDFSNCNSQKNFNSNSIPFSETNGDNILRQKVDENVSS
VVYNNVIDTSQNYTKTNPYNNSFSYKNTHTQLNNTLTLNSDLSFSYSTDKGTGTGKLV
GSNLANAKFCQITRPVKGSEVYSDGTNKSTTSSTISYEDEIIECVGDNYSICPVVAGETI
KYDCGKINNFAEVTSALSAVEEATNDFICSTN

>WP_420061052.1 hypothetical protein [Aliarcobacter butzleri]
MSNTINNSKQYEAMQLNKENKKELLRALFESYKNRINTGIGFSSMETVMNDRLMSFKNI
TKKEIENRFYTAFFLIFIGYLIYINIASLSINFFLLLAGINGFLFSMITIFLLKNISPLRTNTEKIA
FKKVMYDVYFETITSAHLIYYIFLFILSILLIIFFTFEPQLFYKIDLIILKLSYKLNIVPFLFTLL
KNLLIAFIAYVLGSFLYLYIFIFRDIKKIHKGNDDN

>WP_420061053.1 hypothetical protein [Aliarcobacter butzleri]
MITDRDISLLRFINIFGYSFIPVIGKTFKSEITARARLRKLIESGILNKKKTALMNPRYGFF
LTKDTHLFLKEKYNDKALLTQMKVSRIHMLLEQTAFFYLNKIGEVERTTIANHYKELNHI
PDMYKDNTRGKFYIECETTLKSRQSYDELSSKSLKDNYPYAIYITESDLKAKTIKAMPIS
KKLFFISEVKLIENILSKSKINPISQEDLLK

>WP_420061054.1 hypothetical protein [Aliarcobacter butzleri]
MSRLEKTKALIDFIKSILALLVGLFGMASYLVINIEKINATQAIITTCGIIDFVLLILTRMAF
KKINDLEEL

>WP_420061055.1 hypothetical protein [Aliarcobacter butzleri]
MILAVNNKLIKIVLIKTFLLSLSANEYIGNCIVPNVLLKTVQITENETSNPYLIRTNEDINSF
YNIVNRFTHKKQKDKNVIDCLNKENCTYITNSLIENKIINIDLGLHQINYKSYKYEINSYFD
KFESYINACTVIENKIGKNKHKWSWEKLAEYHSKTPALNEKYKQKLIDNYLKLTQ

>WP_420061056.1 hypothetical protein [Aliarcobacter butzleri]
MEIFICFALTIFFIGFIKTSSKNEFKSNVSNKNSQNDYTEYNPINPAFSDDFSSK

>WP_420061057.1 hypothetical protein [Aliarcobacter butzleri]
MAVSTENILKELTKNYEVNLRLELDYNKKNKPVARLYQTPKAKYTNEKQLFGFYFD
NEDRRIEFLNNDYKKRIERKQYNEDYKKNKKIKNEKEALEIKIGDVFKDSWGYEQTNVD
YYQVVAKPSKCFVIVKKISSEFTNDNTGCSMSAYVKPVLNSFIDDKETKYKLNKSIKTS
SFSSANKVENIETEKAYCSWYY

>WP_420061058.1 hypothetical protein [Aliarcobacter butzleri]
MEKFEVYLLDLGGKSLEATFDNEKEAILFRDEKEDEVSKGCFAVLFEIKRVIC

>WP_420061059.1 hypothetical protein [Aliarcobacter butzleri]
MNKNKLIKNIKELSSFNIEKMILQGFIKIKDEEKNEVLQYELNNNILKNKRKLKRVYFDLK
YKGYSYIPF

>WP_420061060.1 hypothetical protein [Aliarcobacter butzleri]
MEKLRIISIVNFVRGGKSSIARLLAEHLNTSILNFDQPQRNSEYYNAVKTNNIPINSKIERLE
NKLMIETTSKIIDISSSSNMFCDFGGRFDERIKEFESDLYIVPTMDDFESISETAQATHYIL
KHNPNAKIIHILNMAMCISKSEKNDFINGYFENMKQNKISVPYLIMPRSNLLKKMINSGKK
TNDIIDTKISEKNYKSINAFVRDLIFKIKEISC

>WP_420061061.1 hypothetical protein [Aliarcobacter butzleri]
MRVTNSQEELEKKEVEVKVTQIEKNKQVNNKGGRTAIPKSEQRTNRIFLGFTDEEIFN
LKRIMKLEGIEDNKYGLSTLIRKLIAREMLRSGFNF

>WP_420061065.1 hypothetical protein [Aliarcobacter butzleri]
MSENILLEDVFKGTTPKTKASYSIDSNVLKEFDKICASKMKKSRVIENLMKIFNEQQQN
LFGVLK

>WP_420061069.1 hypothetical protein [Aliarcobacter butzleri]
MNLNKNEQKAIYEFLNDLYLKIHQNKEKEKSLFENYKITKDELLELVSMGTSINGKEIKSL
FENILTFISKSSLNITSIGFHNITISDFINISKKIGIDEALINKVIKV

>WP_420061070.1 hypothetical protein [Aliarcobacter butzleri]
MSNYLFKKANQSLNKKENKKGFLFVLKIIFLCFIIGEIFYVDSEGRHILDFEFGFMTILLFI
RSVFVGFLIIASFNFLKEAITTKWGKKEE

>WP_420061071.1 hypothetical protein [Aliarcobacter butzleri]
MATRQEHAHRMTRIRVKKCERNINKLVNGIFYFEYKKKNGDWNISKLAKDSGTAGIQFIN
F

>WP_420061072.1 hypothetical protein [Aliarcobacter butzleri]
MNIGGRFELVFNDYFNKQEKYKYKVDFLKDINPDWNNQTLGNLSNYSSISPIMIEICKIT
KINLNFLIGTEDNMYIDEKEKYMIETELKDSLFYKSNTIKNTPILSIAKINDVLKFQTN SINIF
FTDTKKYIVIMKGGLSGIVSISNHYEKNKLFIKFDINKEDFFSICKEDIEIIAEEIIA

>WP_420061073.1 hypothetical protein [Aliarcobacter butzleri]

MILKNIFFTTITSCFLYSDELHQIHKGETYKVLEKDLIEMIQEHTENKDMIEQKLNDFQSQ
TKNKMMLNLKNDNFNLPFVTENEEVKDNLAYMITQKDLAPKNVPLGTIVYPLKYTVLPYQIY
LINGGEEKEIEWLKKQDYKNIQARVWIVNGRLKDLTDDLGPVYFYSEKIHNRFKAKGTP
AIIKQTGEEMVFNFKIER

>WP_420061074.1 hypothetical protein [Aliarcobacter butzleri]

MSIIKPNAGDKKICPICGEKLVRLTSNKGKQYVKCSKNGFLEETTKATSCEFSIDLKPAIIA
KNKNNELTDIEVIALNNGEKVKKGAGHFYIDGIPDIPKGSEKKYYVHFTFDEAVVEDF

>WP_420061076.1 hypothetical protein [Aliarcobacter butzleri]

MIEILFFFKILDENGNFISTISSSQKINYKSRVSLNDLYLAVKEELLSSIPKDYKIKIMNDEEI
KEYN

>WP_420061077.1 hypothetical protein [Aliarcobacter butzleri]

MKKLKNTTKNYFKFLDIKRKIYFFILYGILEPISLIFFVTFFLNKFNLQITFLQLADYSDDVLK
AYFIVALFFGGFKFFFTNSNFWEK

>WP_420061078.1 hypothetical protein [Aliarcobacter butzleri]

MQIKRKYKDNQSRLLIIVCGYDEKLDYVFMCMYHKEEIIYDNLELENALEIQDFTIFYDIA
LSMFGIDLKKEMKIIKDYIGEIKK

>WP_420061079.1 hypothetical protein [Aliarcobacter butzleri]

MKKGLLFLLLAGSLFADDIELKIQEIIPQTKIAGVKQATNDIYAVCPDSKNINLFYVKPDEK
LLFFGEIWENIGTNLSENLASWCNSLVKNNTVTTFDDKVTTLNKSGLEIKNGKGSQNGVE
FIIFKSATCPHCMDLDSFLSKTNTTTYNYMAPSIESENYYNKYTKNAKDLLKKQLEIVVNL
NLDISAVPLTLVTKDNKLEIEGADLKKFRKYLY

>WP_420061080.1 hypothetical protein [Aliarcobacter butzleri]

MSYTQALYKNRWCDIIITIDNNIIIDYNNQELTSLKDINEFR

Supplementary File 2: List of shortlisted essential non-homologous proteins :-

>WP_004510196.1 hypothetical protein [Aliarcobacter butzleri]

MIKKLILIIALCVTSNASINDAVQNLLGASDYNTHRNLIHIFKNSSSFYKNGQIDYVKITQ
ELSNNNLLKLDLGGTKDIEVSFSFNTNAKKSMMKNINDILKAIGQQNFITQSEVVIEDQLK
WTIRLKTAAINPLRLSQELQSTNSSIVDIKREGNLKWSYFIDSTNSTVYKTEDLINNKSL
SLKKPNKPYIIISNTSAISSNNINNSWYPSIVFYDKDFKIIIEIVEKDSLHKNLVIDVPNNTR
YIKIDDLYSANLKKQGISITKE

>WP_004510348.1 hypothetical protein [Aliarcobacter butzleri]

MKIEFKKVPQTAKELLTQFNSVEIEGIFCRISSSLVKVEAVLKGNTAIDCCRCGVSEIVEV
NEELRLLLSDGIYKGNEEEEFLVIEIENSLIDFDEIIESELNSIKSDYYICKNCLQNSDNFEKE
F

>WP_004510585.1 hypothetical protein [Aliarcobacter butzleri]

MINEDRLLNEANSLFLQKRFEELFLYSQSSNFPDNKEYPIYALFCDIASEDVSKALS
DYFTVIKDDSLDEAIRYVEDIVNAYDGDIDKMMEILKDLSTSTVESLDAIRYEDFKKLIEVR
GSFRIAFEDIMFSTKVAIENKDDFYDFVTKLIDNDFNSTAYSILDGFNEYFTYDKEIEKLY
KKLEEKKLETNHR

>WP_004510999.1 hypothetical protein [Aliarcobacter butzleri]

MKYILVSLLSVLFTACSGKKYFEPEDTSSNIELNEKSIPATIKSFNKIGATLEDNKVITKN
GISQNELPEGFEFLNLTEGRIIATNYIDKILIGNQERKVSEVVAAASLRNEKLALIYSNNS
MELIDINTNKTFLKEYLPISLANDTRITNPFFMGNLILFPSLNGRVIIVSSVNNEAVRNISVD
PDSQFNIIYIGVIESNQTLIVASPNRVVSISPRDVISKEYDLRDIIVNNNDIYIATIDGQIIKL
NATLDQVAKKKYKYAKIHALAFSDSLYAVESQGFLINIDENFDKDVYDFSFNEERMIAI
GNKIYFGSDYITLP

>WP_012012715.1 hypothetical protein [Aliarcobacter butzleri]

MKSLKNIFAFLLPLLSMLITFTIYLLISNIVENYKSKISRDYSIIIVATNPIKNISELAGIKVEKI
QTLPNDKIIENIKSNLSNNSVELLKQKLPNFYQIYLEIFPTSTELEVIKNTLLANKDIKKVEV
FYKNHNQIYLLLLILNSVSFILFFITLFAIIIAKQIKLWFHEYRVKISILRLHGASILYSASSIL
NYALLSSFLSFLIAGIFLVFISNNLDVLFPLELQEIVDVKINLVVELIKLFLLSFFISIFTIFGVL
LKYKISND

>WP_012012985.1 hypothetical protein [Aliarcobacter butzleri]

MIKLNSQSSIAIVFAILFFALCLYFPKIYLRNNIYYTSKDINKLYAHYISLQEENTFLSQQLE
DMKFKNQILDSLLFNPLQQIDQSKDLQED

>WP_012147952.1 hypothetical protein [Aliarcobacter butzleri]

MKKVKFFKVGIVFSLLLFFCTNLNAENYILNDDKLIDRAKEKINQIGDEVKSKLGVNIYIY
AKSTLGLDDNIKTKEKIEIVKSNENQILQNLKAPYILMTIYVEENMVNLIPTDFKNIIDKNE
ILDGYVVPLLASKDKNSLYAKVSAATLNGYAAIADTLADSKNIKLENSIGNSGKVSGETIWR
VFMYTLVVVALLVYTYAVLRKRK

>WP_020848489.1 hypothetical protein [Aliarcobacter butzleri]

MIEILVITISNPLLIYIENKKLIKEYKLDGKTSVDLPTLFQKLLNHYNIKKIIYVNTPGSFMAI
KVAYIFLKTVCCLKNIELNSVSGFEFNNNSPIKALGQKYFINETNNLKVDLFLEKDCIICDFK
LPLCIEKYNFNKETLPIYNLPAV

>WP_041644687.1 hypothetical protein [Aliarcobacter butzleri]

MDNNSRLRIDANLNLRLREGIRVVEDIFRYVYNNKEVATKLKNLRHLARTQNYEELLETR
DVKNVDLRESIKSEQNRDNLNSILIANFKRAQESARVLEEFTKLTSIKDSENFKYIRYELY
NLEIVLTKITSNSK

>WP_046998309.1 hypothetical protein [Aliarcobacter butzleri]
MIKDIIENPNYKELIEKQIQDIIVFLLDNNQEFSITANITPITFNPVLPEEIKSQLHKFSLFVLS
NYTYTTIEINEEFLSFEAGFGNENFGSVVKIPLHAIFQIIVEDSILYLNSIATVEKFNRNLEK
NSFNIFKNNPNNKRFN

>WP_050071245.1 hypothetical protein [Aliarcobacter butzleri]
MKIIIFFLVPIFLFSSTLVKKYETGETFQFAEKDMLEEIKNHIENNRTQIENKLEEEYKKVAKE
KVNNYKPADLKKLTPAIKNNTFYDPMTYTNPNNVYDNNGNIIYPKGFQFNPLDYQTLPY
KMIVIDGNSKAQLDWLVENNYIDNMKYMILLSDGNYQEVGEKCLKQPVFYAMPKITEKFN
LEHTPSVITQIGNKMEVKEICLSCKEEVKK

>WP_151944557.1 hypothetical protein [Aliarcobacter butzleri]
MKQLLTLLFVAFVFLGCNQKQVVQLKMPNQNKSVPTKVKEDKTTVVEEFISNDSIIKEEV
IDNSNNGSMNTVQPPADEETVAQQSININIDETRANVKLAFVYPSTLVSKYAKSSLSTIS
GYLSYKQANYNLIVVDSKNESYENINNAFSLKKEEGVTKVIALFTPNALNNLNKIVTDDF
KVYLPLIEKKDSLENNDNLIFGSISYDDQLKKLSYYSNGKNSTFYQETYLGTKLKNSYDF
VIGNSNLRKEISNDEKNFKNIVNDSRLRNSSLFLNTDLVKSSLILSQMTVYEINPNTILAT
QILFDPMLMVLQERDRQNLIANSIGDVDSKLDKDEIATVGGNITFEWVDYSTLVGTNYLF
SNGNSSLISTKIENNQAVYTPRLFKSTDIGFLEIK

>WP_193220824.1 hypothetical protein [Aliarcobacter butzleri]
MSQEDIEALMSGLDIASDGNSEQTEETIEPAKVNTKEIEELLSQTEEIKDKDDTTKVQESI
ETSVANIPNEDNANKNNKINEIENLLNDIEINSPKELVSSSENVKKIQDDDKSDRSEDEIV
KDWTSSKINEGVFPFPAESDTKVVTQLSQVANDSEEKVSQIFDVLSLGLDNNNELRKAF
KEYDSFITAETNLLVSLNNKFPNIKIFDEHLKNIHTVKDSLEKCLKALLNDEDMHIFQGMEL
MQFNDINRQKIERVMSVIRKLSIYLNLFEDDGKTTNLPMAKHIHGDETEDLVGDDLDKL
IAEFSQKD

>WP_260901056.1 hypothetical protein [Aliarcobacter butzleri]
MFEIVPFIVTNLVIALVIGIFIGYLGKRRNEIKTIKTDNEESMENKKVRYRINPIFNKTSSLD
YKPMVLSSSSKIDNFKKIKGINSQIEKNLYSLGIFHYEQIANWTNKNVEWIEGFLELPFHV
RNNQWVEQARILKNGNETTYSQQVENGEIEVD

>WP_260901348.1 hypothetical protein [Aliarcobacter butzleri]
MLVIGDKLIPFENIFFISSIQDIKNTKANSTLIFNYDEVLLKYVSQNSISSAVIVTSIKEAIYAN
CLSAKYIISNQDLAKEIQKIADNYMFDSKNLAIKSNDEFKQIAKNEIDGAIYEYLLELSDS

>WP_260902335.1 hypothetical protein [Aliarcobacter butzleri]
MKKNLFLIILINIFLSNLNLYAAKNLYLSYKQIPDSVYKNQRFEVTVKALITTDNFTNLTTTFS
NYSNIELLNENNPWKKISNDTYENSYFFKVKNGNFKLPNIEVNLWNQNLLVDSSQLSPS
LIRYSEIGKSDERFSNIIADNIIKAYKTKQYNNNSALTIIDIDAINSNLEDFKLKNVEEQGL
SNLKEWEDIQNLVYYFVTPIYQKNLTFTYYNTKTNSFKDVKVPLVLQNELVSTQTDLNPN
DSTFEKYKKIAAIVVFVIFLLIFIWKRYKIVLFTIISLITAVLYNLPNSTGIVKPDSFVYILPTK
NSTIFFKVDKEEKVEVLQTKNGFIKVLGVDNGFIGWIKESFETN

>WP_260903722.1 hypothetical protein [Aliarcobacter butzleri]
MNKFENIKTSDFIISFGTFFENNLELKDGVLSIEKNQTKFVYMFPIDNANLKPFTYTQFIK
YEVGSEEGICALLLDTFAKNYDEKTKEFINNLDLGYISAESSAGEEEFEAFEDYENSNS
KILIIGEDIKNHERVDNIIKLLATIKKYSDFDFLILDEDLENKINSCEDFDLEEIEELKSFNGT
LVYSLVGVDLPVLQASQTFANIAKVVDGENIQIISKNEKINKILKIDEKLTGTVAILNVKNSP
NEYKYKQVKIEKE

>WP_419970369.1 hypothetical protein [Aliarcobacter butzleri]

MISKNRYTLYFYTFLLVIVSILLFKVELSLSISYKEALNVFINNSMLTFITKASLYFLGQNDIA
LRLPFILFYFFSVILMYKITENYFKYESDRLISIIIFMVLPGLSASLLVNSAIIVTFFTLLEY
YQKYNKHLIYILLFICLFIDNSFAILFLALFFFSFKNKDKTLLYISTILFVLSLYIYGFPDGGK
RGFLIDTVAIYAAIFSPVLFIYFIYTIYRAGIKKDRSLSWYISITALLISIIFSFRQKIYIEDFAPY
VVIAIPLMLKTFLHSYRIRLEQFRKVHKIMAIIGMLALNVIFTFVNKPLYLIIEPKRHFVY
QYHFAKELAFTLKEQNIDEILCDDEELQLRLKFYNINKGENYYLSTKEFFNYDEKISIKYY
NKDLFDVYIKDLKNLK

>WP_419970373.1 hypothetical protein [Aliarcobacter butzleri]

MRVLGIRVEPKKSTFIVIERDIDDNYTLINEEVIKVPIALSFPPEQLKYIRNTVIDILREYEITF
AGIKLTESIASADLNRVQFEGVIQEAFFSSSEVKDYFSGRKLSIMKRLGISKTNYDSILNGE
QEYPIINWHRLTNKNLREAALVAIGAIQ

>WP_420061029.1 hypothetical protein [Aliarcobacter butzleri]

MYNNIVLVADIFEHTENINFNSTTLEKPSQEYIDDVVKALTIYSKQVFCNSPKELNNYL
VKNSVDFVMTIYGGEISRNRLALVPAICESMNVKFLGADVYNRIICQDKNLCKTFAKRFN
ILSPNSILYDENDISLIKSLKLPLVVKPNYEGSSIGISNKNIVNTFVKAITLIKELLEIFKQPII
VEEFIGGQEVNITLVGDNKNINIFEVIEDIHIEDINFFNNNLYTLEYKQLYCEKFSHKVITDK
FDVETKNYIIDMYRHMKGKVDYLRVDGKILNNKFYLIELTPDPYCGRESSFSKAIMSNGYS
YEESIGLLIQNCSKYYQTQYSNEIIRTL

Supplementary File 3 : Annotation dataset results for the 20 hypothetical proteins submitted to the workflow with Pfam, InterPro, CATH, SUPERFAMILY, MOTIF, SMART, PANTHER, and CDD-Blast.

S I N o	Protein Accession	Pfam	InterPro	CATH	SUPERFAMILY	MOTIF	SMART	CDD	PANTHER	Predicted Domain/Function
1	WP_004510196.1	No Result	No Result	No Result	No Result	No Result	No Result	No Result	No Result	No Result
2	WP_004510348.1	No Result	No Result	No Result	No Result	Large ribosomal RNA subunit accumulation protein YceD	No Result	No Result	No Result	No Result
3	WP_004510585.1	TPR-like	Tetratricopeptide-like helical domain	No Result	Tetratricopeptide repeat (TPR)	Tetratricopeptide repeat	No Result	No Result	No Result	Tetratricopeptide repeat
4	WP_004510999.1	WD40 repeat-like	WD40 - repeat - containing domain	No Result	<u>WD40 repeat-like</u>	Domain of unknown function (DUF5068)	No Result	No Result	No Result	WD40 repeat-like
5	WP_012012715.1	CELL DIVISION PROTEIN FTSX	Cell division protein FtsX	No Result	Formin homology 2 domain (FH2 domain)	FtsX-like permease C-terminal	transmembrane region	No Result	CELL DIVISION PROTEIN FTSX	Cell division protein FtsX-like permease
6	WP_012012985.1	No Result	No Result	No Result	No Result	No Result	transmembrane region	No Result	No Result	No Result
7	WP_012147952.1	No Result	No Result	No Result	No Result	No Result	transmembrane region	No Result	No Result	No Result
8	WP_020848489.1	Representative	Actin-like ATPase	No Result	Actin-like ATPase	tRNA N6-adenosine threonylcarbamoyltransferase	No Result	No Result	No Result	Actin-like ATPases

		domains	se domain		se domain	rbamoyltra nsferase				e domain
9	WP_041644687.1	ThiD2 family	ThiD2 family	No Result	No Result	ThiD2 family	No Result	ThiD protein and is called the ThiD2 family	No Result	ThiD2 family
10	WP_046998309.1	No Result	No Result	No Result	No Result	No Result	No Result	No Result	No Result	No Result
11	WP_050071245.1	No Result	No Result	No Result	No Result	No Result	coiled coil	conjugal transfer pilus assembly protein TraW	No Result	No Result
12	WP_151944557.1	Prokaryotic membrane lipoprotein lipid attachment site profile		No Result	No Result	No Result	No Result	No Result	No Result	No Result
13	WP_193220824.1	Chemotaxis phosphatase CheZ	Chemotaxis phosphatase CheZ	No Result	Chemotaxis phosphatase CheZ	Myotubularin-like phosphatase domain	No Result	No Result	No Result	Chemotaxis phosphatase CheZ
14	WP_260901056.1	No Result	No Result	NADH: ubiquinone oxidoreductase 41 kD complex I subunit (1.10.150.20/F/F/304)	Rad51 N-terminal domain-like	Predicted permease	transmembrane region	Predicted 5' DNA nuclease, flap endonuclease-1-like, helix-3-turn-helix (H3TH) domain	No Result	membrane-associated subunit of NADH: ubiquinone oxidoreductase complex

15	WP_260901348.1	No Result	No Result	No Result	No Result	No Result	No Result	No Result	No Result	No Result
16	WP_260902335.1	No Result	No Result	No Result	No Result	Bacterial SH3 domain	trans membrane region	Uncharacterized conserved protein YgiM, contains N-terminal SH3 domain	No Result	Uncharacterized conserved protein YgiM, contains N-terminal SH3 domain
17	WP_260903722.1	No Result	No Result	No Result	NAD(P)-binding Rossmann-fold domains	No Result	No Result	Rossmann-fold NAD(P)(+)-binding proteins	No Result	No Result
18	WP_419970369.1	No Result	No Result	No Result	No Result	Dolichyl-phosphate-mannose-protein mannosyltransferase	trans membrane region	PMT family glycosyltransferase ArnT/Agl22, involved in glycosylation of proteins and lipid IVA [Cell wall/membrane/envelope biogenesis]	MANNOSYLTRANSFERASE YKCB-RELATED	Dolichyl-phosphate-mannose-protein mannosyltransferase
19	WP_419970373.1	No Result	No Result	No Result	Ribonuclease H-like	Crossover junction endonuclease RuvC	No Result	No Result	No Result	No Result
20	WP_420061029.1	D-ALANINE--D-ALANINE LIGASE	D-ALANINE--D-ALANINE LIGASE	D-alanine--D-alanine ligase	D-Alanine ligase	D-ala D-ala ligase	No Result	D-alanine-D-alanine ligase or related ATP-	D-ALANINE--D-ALANINE LIGASE B	D-alanine-D-alanine ligase

								grasp enzyme		
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Supplementary File 4 : Results of the Blastp search for similar sequences against non-redundant (nr) database

SI No	HP Acession No	Organism	Query Coverage	E_value	Identity	Product
1	WP_004510585.1	Aliarcobacter butzleri	100%	4E-136	100.00%	hypothetical protein
		Aliarcobacter butzleri	100%	7E-136	99.49%	hypothetical protein
		Aliarcobacter butzleri	100%	1E-135	99.49%	hypothetical protein
2	WP_004510999.1	Aliarcobacter butzleri	100%	0	100%	hypothetical protein
		Aliarcobacter butzleri	100%	0	99.69%	hypothetical protein
3	WP_012012715.1	Aliarcobacter butzleri JV22	100%	0	100%	cell division protein FtsX
		Aliarcobacter butzleri	100%	0	100%	hypothetical protein
		Aliarcobacter butzleri L349	100%	1E-180	99.63%	cell division protein FtsX
		Aliarcobacter butzleri	100%	1E-180	99.63%	cell division protein FtsX
		Aliarcobacter butzleri L351	100%	1E-179	99.26%	cell division protein FtsX
		Aliarcobacter butzleri JV22	100%	0	100%	cell division protein FtsX
4	WP_020848489.1	Aliarcobacter butzleri	100%	1E-99	100%	hypothetical protein
		Arcobacter lacus	100%	4E-95	94.67%	hypothetical protein
5	WP_041644687.1	Aliarcobacter butzleri	100%	1E-87	100%	hypothetical protein
		Arcobacter lacus	100%	1E-87	99.26%	thiamine-phosphate pyrophosphorylase
		Aliarcobacter butzleri	100%	2E-87	99.26%	thiamine-phosphate pyrophosphorylase
6	WP_193220824.1	Aliarcobacter butzleri	100%	0	100%	hypothetical protein
		Aliarcobacter butzleri L355	100%	0	99.03%	hypothetical protein AF80_09910
		Aliarcobacter butzleri L349	100%	0	98.71%	hypothetical protein AF74_07830
7	WP_260901056.1	Aliarcobacter butzleri	100%	7E-108	100%	hypothetical protein

8	WP_260902335.1	Aliarcobacter butzleri	100%	0	100%	hypothetical protein
		Aliarcobacter butzleri	100%	0	98.88%	SH3 domain-containing protein
		Arcobacter lacus	100%	0	94.66%	hypothetical protein
9	WP_419970369.1	Arcobacter lacus	100%	0	100%	hypothetical protein
		Arcobacter lacus	100%	0	99.75%	ArnT family glycosyltransferase
		Arcobacter lacus	100%	0	99.50%	glycosyltransferase family 39 protein
10	WP_420061029.1	Arcobacter lacus	100%	0	100%	hypothetical protein
		Aliarcobacter cryaerophilus	100%	0	98.82%	hypothetical protein

Supplementary File 5 : Protein-protein interactions analyses of the 10 HPs

No.	HP ID	STRING protein	Annotation	Interacted protein	Score
1	WP_004510585.1	Abu_0521	annotation not available	Abu_0520 (Conserved hypothetical NifU-like protein)	0.802
2	WP_004510999.1	Abu_2118	annotation not available	Abu_2119 (Conserved hypothetical protein)	0.802
3	WP_012012715.1	ftsX	Cell division protein FtsX	ftsE (Cell division ATP-binding protein FtsE)	0.811
4	WP_020848489.1	Abu_2040	annotation not available	gcp (O-sialoglycoprotein endopeptidase)	0.945
5	WP_041644687.1	Abu_2274	annotation not available	thiG (Thiazole biosynthesis protein ThiG)	0.758
6	WP_193220824.1	Abu_1966	annotation not available	cheY2 (Chemotaxis protein CheY)	0.76
7	WP_260901056.1	Abu_0026	annotation not available	nuoCD (NADH-quinone oxidoreductase)	0.999
8	WP_260902335.1	Abu_2124	annotation not available	plsC (1-acyl-sn-glycerol-3-phosphate acyltransferase PlsC)	0.802
9	WP_419970369.1	Abu_2003	annotation not available	trpG (Anthranilate synthase, component II)	0.802
10	WP_420061029.1	No Result	No Result	No Result	NA

Supplementary File 6 : GO terms by Argot2.5 for all the 10 HPs.

SI No	Protein product	GO ID	Molecular Process	GO ID	Biological Function	GO ID	Cellular Component
1	WP_004510585.1	Absent	Absent	Absent	Absent	Absent	Absent
2	WP_004510999.1	Absent	Absent	Absent	Absent	Absent	Absent
3	WP_012012715.1	Absent	Absent	Absent	Absent	GO:0016020	membrane
4	WP_020848489.1	GO:0008233	peptidase activity	GO:0006508	proteolysis	Absent	Absent
5	WP_041644687.1	GO:0004789	thiamine-phosphate diphosphorylase activity	GO:0009229	thiamine diphosphate biosynthetic process	Absent	Absent
6	WP_193220824.1	GO:0016791	phosphatase activity	Absent	Absent	Absent	Absent
7	WP_260901056.1	GO:0016491	oxidoreductase activity	GO:0055114	oxidation-reduction process	GO:0016020	membrane
8	WP_260902335.1	Absent	Absent	Absent	Absent	Absent	Absent
9	WP_419970369.1	GO:0016740	transferase activity	Absent	Absent	GO:0016020	membrane
10	WP_420061029.1	GO:0008716	D-alanine-D-alanine ligase activity	GO:0009252	peptidoglycan biosynthetic process	GO:0005737	cytoplasm

Supplementary File 7 : List of predicted physicochemical parameters for the selected 10 HPs

SI No.	HPs ID	Protein length (AA)	MW	pI	Negatively charged residues (Asp + Glu)	Positively charged residues (Arg + Lys)	Extinction coefficients	Instability index	Aliphatic index	GRAVY
1	WP_004510585.1	198	23432.29	4.43	43	25	20860	41.49	86.21	-0.465
2	WP_004510999.1	327	36804.99	4.84	42	32	20860	36.2	108.81	-0.046
3	WP_012012715.1	270	31093.31	9.33	19	26	21890	28.6	150.89	0.719
4	WP_020848489.1	150	17260.45	8.79	14	18	12170	31.21	116.93	0.121
5	WP_041644687.1	135	16062.22	9.3	20	24	10430	27.2	99.63	-0.714
6	WP_193220824.1	310	35225	4.38	69	34	8480	60.71	87.71	-0.729

7	WP_260901056.1	157	18332.05	7.86	19	20	25440	29.83	96.75	-0.38
8	WP_260902335.1	356	41370.61	8.59	36	39	55810	23.6	106.43	-0.129
9	WP_419970369.1	402	47883.06	9.28	30	43	59265	31.37	126.84	0.563
10	WP_420061029.1	338	39064.89	5.24	43	35	31665	44.63	103.73	-0.132

Supplementary File 8 : List of predicted sub-cellular localization and transmembrane helices for the selected 10 HPs

SI No	HPs ID	Sub-cellular localization		Transmembrane helice		
		PSORT B	CELLO	SOSUI	HMMTOP	TMHMM
1	WP_004510585.1	Cytoplasmic	Cytoplasmic	SOLUBLE	0	0
2	WP_004510999.1	Unknown	OuterMembrane/Cytoplasmic	MEMBRANE	1	0
3	WP_012012715.1	Cytoplasmic Membrane	InnerMembrane	MEMBRANE	4	4
4	WP_020848489.1	Cytoplasmic	Cytoplasmic	MEMBRANE	2	0
5	WP_041644687.1	Cytoplasmic	Cytoplasmic	SOLUBLE	0	0
6	WP_193220824.1	Cytoplasmic	Cytoplasmic/Extracellular	SOLUBLE	0	0
7	WP_260901056.1	Unknown	Cytoplasmic/Periplasmic	MEMBRANE	2	1
8	WP_260902335.1	Cytoplasmic Membrane	OuterMembrane	MEMBRANE	3	3
9	WP_419970369.1	Cytoplasmic Membrane	InnerMembrane	MEMBRANE	10	9
10	WP_420061029.1	Cytoplasmic	Cytoplasmic	SOLUBLE	0	0

Supplementary File 9 : Tertiary structural information of HPs from *A. butzleri* strain BNI-3166.

Alphafold server v3.0.1		
No.	HP Id	pTM Score
1	WP_004510585.1	0.46
2	WP_004510999.1	0.9
3	WP_012012715.1	0.8
4	WP_020848489.1	0.92
5	WP_041644687.1	0.85
6	WP_193220824.1	0.44
7	WP_260901056.1	0.58
8	WP_260902335.1	0.61
9	WP_419970369.1	0.91
10	WP_420061029.1	0.91

Supplementary Figure 1 : Promoter analysis of the 10 proteins using BPROM

Text colors:

Green (Bold) – **START Codon**; Red (Bold) – **STOP Codon**

Highlighted colors:

Green = **-35 box**; Yellow = **-10 box**; Blue = **Shine–Dalgarno (SD) sequence**

>WP_004510585.1

GATGGTGGCGCAATTAAGCTTTTAGCTATAAAAAATGCTAGAATTTTTGTGCAAT
TACAAGGTGCATGTGTTGGCTGTAGCGCAAGTAGTAGCAC**TTTAAA**ATATATTGT
AGAAAAAG**AGTTAAAAT**CTGCAATTCACCCTGATTTAGAGATTATTAATGTACCA
CAAGGTATGGAAAACAACCTTA**GAGGAA**TTATAATA**ATG**ATAAATGAAGATAGAT
TATTAAATGAAGCAAATTCCTTTATTTCTACAAAAAAGATTTGAGGAAGCTTTATT
TTTATATTCACAGTTATCATCAAATTTTCCAGATAATAAAGAATATCCTATTTATG
CACTTTTTTGTGATATTGCTAGTGAAGATGTATCAAAAGCTTTATCTTTATATGAT
TATTTTACGGTAATTAAAGATGATAGTTTAGATGAAGCAATAAGATATGTAGAAG
ACATAGTAAATGCTTATGATGGTGATATTGATAAAATGATGGAAATTTTAAAAGA
TTTAAGCACTTCAACAGTTGAATCTTTAGATGCAATAAGATATGAAGATTTTAAA
AAATTAATAGAAGTTAGAGGTTCTTTTAGAATTGCTTTTGAAGATATTATGTTTTTC
AACAAAAGTTGCAATTGAAAATAAAGATGATTTTTATGATTTTGTAACAAAGTTG
ATAGATAACGATTTTAATAGTACAGCATACTCTTATCTTGATGGTTTTAATGAAT
ATTTTACTTATGATAAAGAGATAGAAAAACTATATAAAAAATTAGAAGAGAAAA
AACTTGAAACTAATCATAAACGAT**TAA**

>WP_004510999.1

No gene sequence found

>WP_012012715.1

GGCACTTGCTCATAATCCAAAAATTATAATTGCAGATGAACCAACTGGAAATTTA
GATGATTTTTCTGCTGAAGTTGTTTGGAAATTTATTTAAAAGGTGCAAATGAACAAC
TTGGAATTACTGTGGTTG**TTGTAA**CACATAGAGTT**CCTAAAAAT**CTAGGGATTAA
ATTTAGACAATTATCTATTGAA**GATGGGA**TTATTT**ATGAAGTCTCTTAAAAATAT**
CTTTGCATTTTTACTTCCCCTACTTTCTATGTTAATAACATTTACTATATATTTATT
AATAAGTAACATAGTAGAAAATTATAAAAGTAAAATTTCAAGAGATTATTCTATT
ATCATTGTTGCTACAAATCCAATAAAAAATATTAGTGAACCTTGCTGGAATAAAAG
TAGAAAAAATTCAAACATTACCAAATGATAAAATTATTGAAAATATAAAATCAA
ATTTATCAAATAATTCTGTAGAATTATTGAAGCAAAAACCTTCCAAATTTTTATCA
AATATATTTAGAAATTTTTCTACAAGTACAGAATTAGAAGTGATTAAAAATACT
TTATTAGCAAATAAAGATATAAAAAAAGTGGAAGTTTTTTATAAAAAATCACAA
CAAATTTATCTATTGCTTCTTATTTTAAATAGTGTCTCTTTTATACTATTTTTCATA
ATAACTTTGTTTGCTATCATCATCATAGCAAAACAAATAAAACTTTGGTTCCATG
AATATCGTGTTAAAATATCTATTTTAAGGCTACATGGTGCTTCAATTTTATATAGT
GCATCATCTATACTAAATTACGCACTTCTAAGTTCTTTTTTGTCTTTTTTAATTGCA
GGAATTTTTCTAGTATTTATTTCAAACAATTTAGATGTTTTATTTCCATTAGA
ACTACAAGAGATTGTTGATGTAAAAATAAATTTAGTAGTAGAACTAATAAAGCTATTT

TTATTATCATTTCCTCAATTTTACAATTTTGGTGTATTACTAAAATATAAG
ATAAGTAATGAT**TAA**

>WP_020848489.1

No gene sequence found

>WP_041644687.1

No gene sequence found

>WP_193220824.1

No gene sequence found

>WP_260901056.1

No gene sequence found

>WP_260902335.1

No gene sequence found

>WP_419970369.1

No gene sequence found

>WP_420061029.1

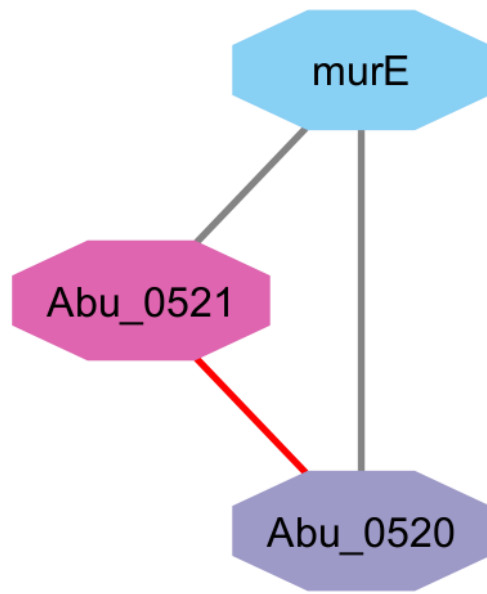
No gene sequence found

Supplementary Figure 2 : Protein – protein interaction networks obtained from String database. Networks are visualized using Cytoscape (v 3.10.3)

*Networks are presented in a circular layout with **protein of study**

*Edge connecting the protein of study and its important functional partners with highest scores is highlighted in **red**

*Confidence score of the interaction is given in brackets

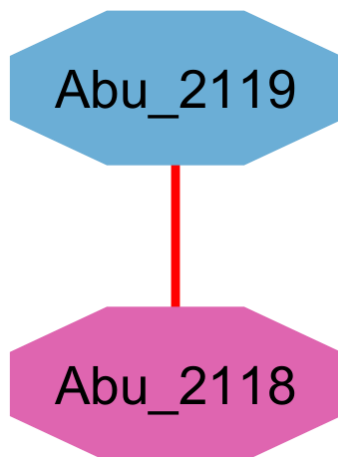


Study Protein :- WP_004510585.1

String Protein :- **Abu_0521**

Interacted Protein :- Abu_0520

Conserved hypothetical NifU-like protein
(0.802)

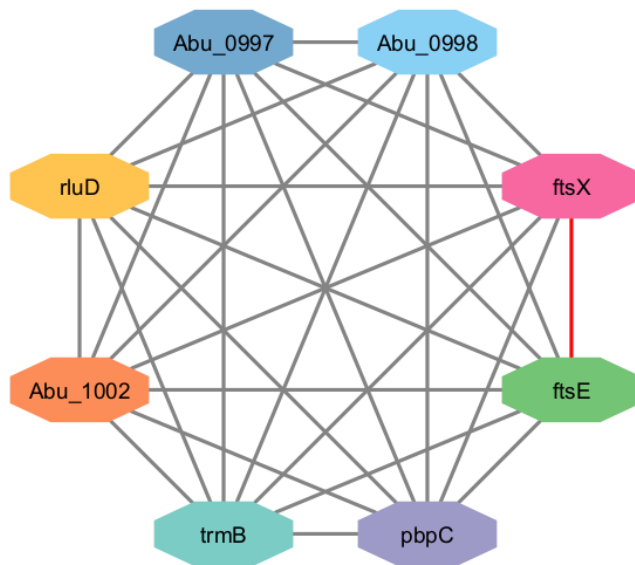


Study Protein :- WP_004510999.1

String Protein :- **Abu_2118**

Interacted Protein :- Abu_2119

Conserved hypothetical protein
(0.802)

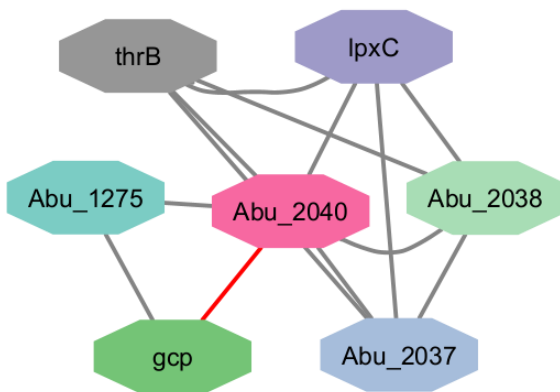


Study Protein :- WP_012012715.1

String Protein :- **FtsX**

Interacted Protein :- ftsE

Cell division ATP-binding protein FtsE
(0.811)

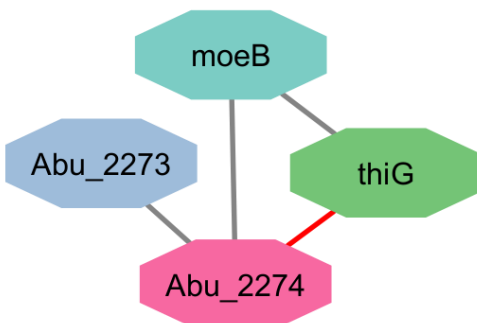


Study Protein :- WP_020848489.1

String Protein :- **Abu_2040**

Interacted Protein :- gcp

O-sialoglycoprotein endopeptidase
(0.945)

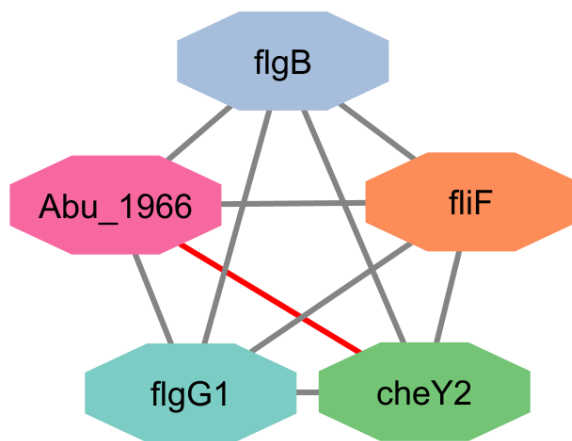


Study Protein :- WP_041644687.1

String Protein :- **Abu_2274**

Interacted Protein :- thiG

Thiazole biosynthesis protein ThiG
(0.758)

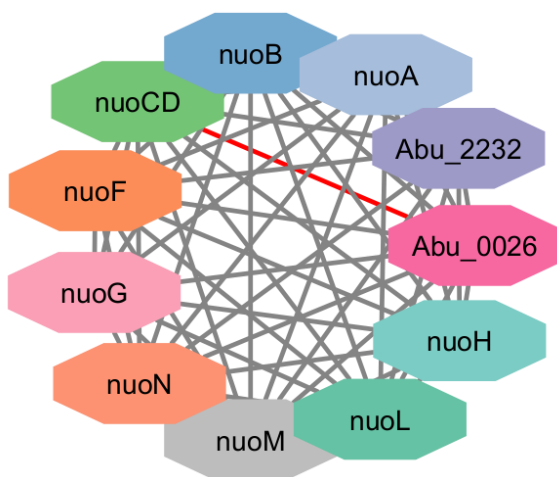


Study Protein :- WP_193220824.1

String Protein :- [Abu_1966](#)

Interacted Protein :- cheY2

Chemotaxis protein CheY (0.760)

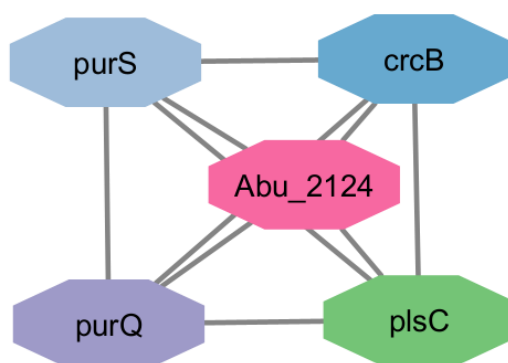


Study Protein :- WP_260901056.1

String Protein :- [Abu_0026](#)

Interacted Protein :- nuoCD

NADH-quinone oxidoreductase
(0.999)

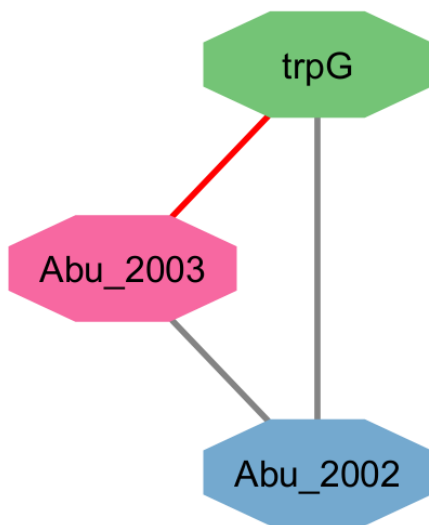


Study Protein :- WP_260902335.1

String Protein :- [Abu_2124](#)

Interacted Protein :- plsC

1-acyl-sn-glycerol-3-phosphate acyltransferase PlsC
(0.802)



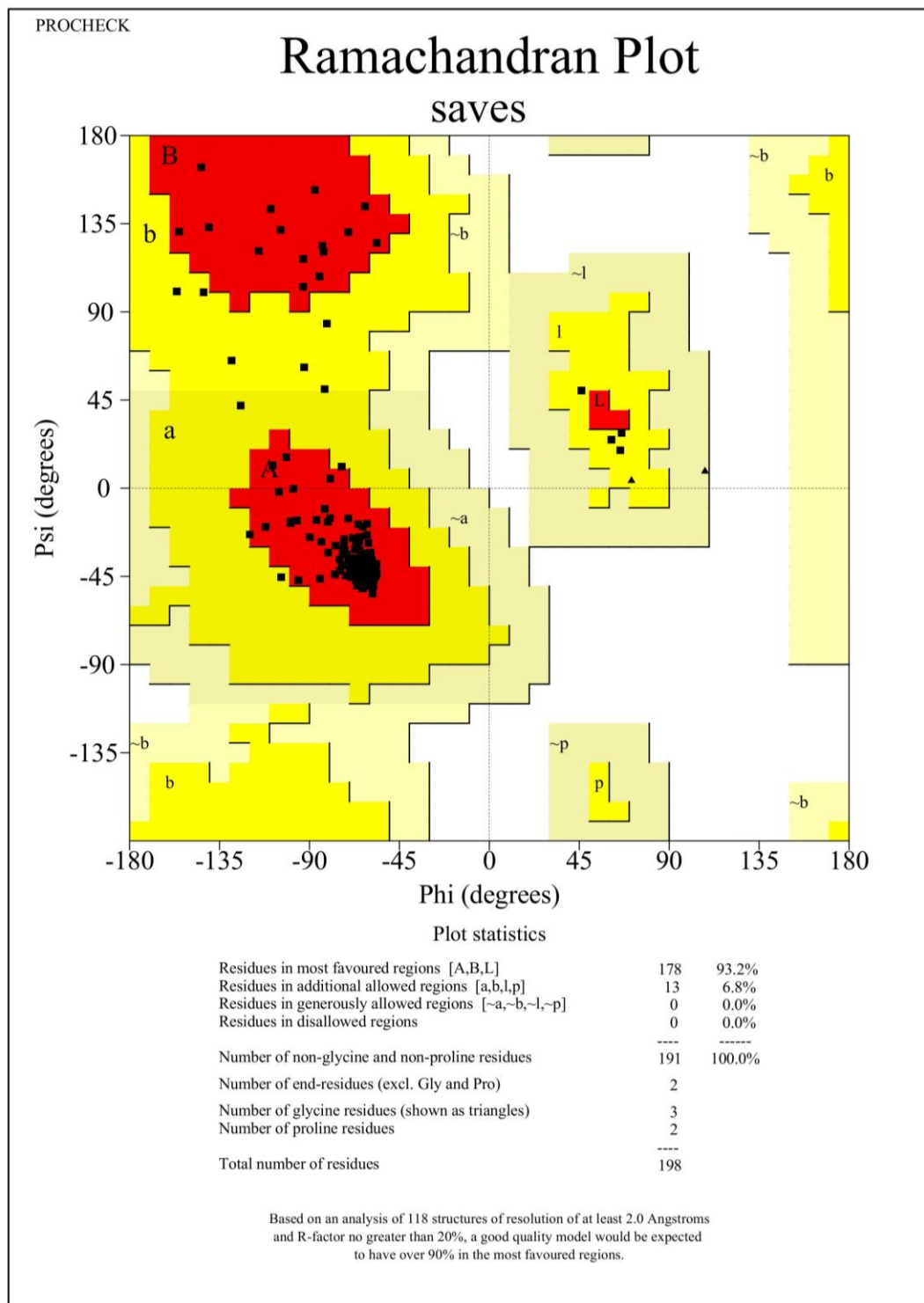
Study Protein :- WP_419970369.1

String Protein :- **Abu_2003**

Interacted Protein :- trpG

Anthranilate synthase, component II
(0.802)

Supplementary Figure 3: Ramachandran plots for the 3D models of the selected 10 hypothetical proteins

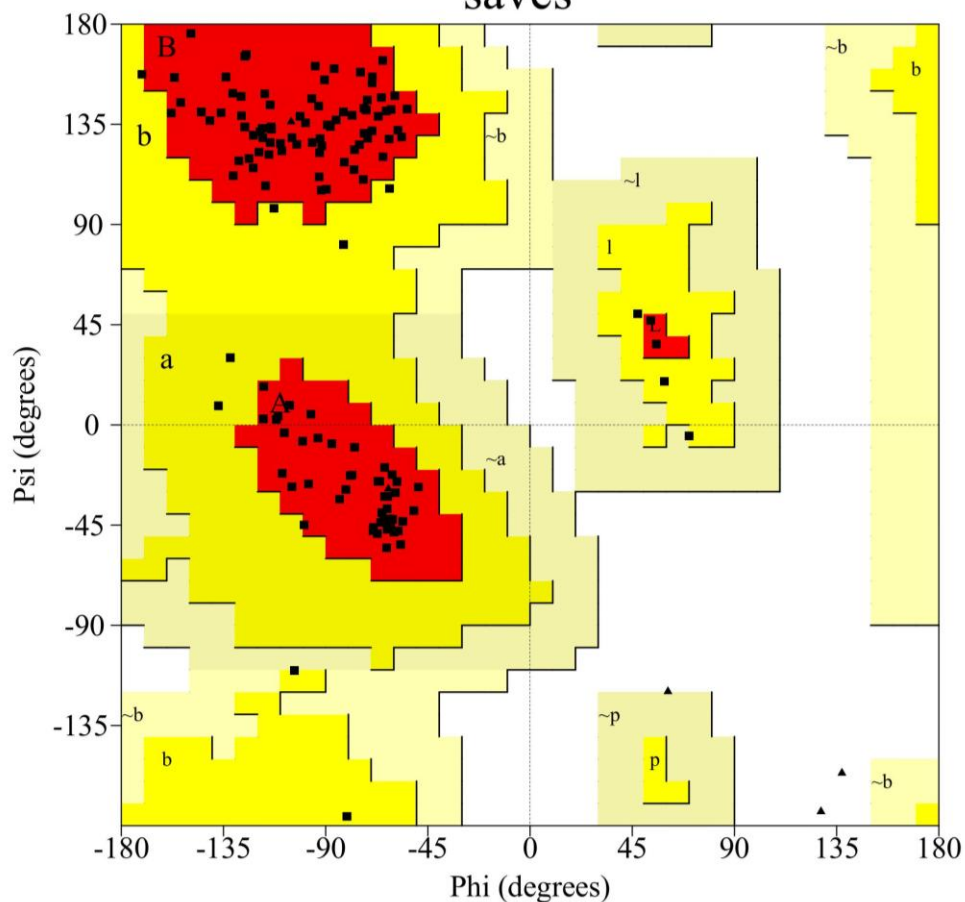


WP_004510585.1

PROCHECK

Ramachandran Plot

saves



Plot statistics

Residues in most favoured regions [A,B,L]	126	92.6%
Residues in additional allowed regions [a,b,l,p]	10	7.4%
Residues in generously allowed regions [~a,~b,~l,~p]	0	0.0%
Residues in disallowed regions	0	0.0%

Number of non-glycine and non-proline residues	136	100.0%
Number of end-residues (excl. Gly and Pro)	2	
Number of glycine residues (shown as triangles)	5	
Number of proline residues	7	

Total number of residues	150	

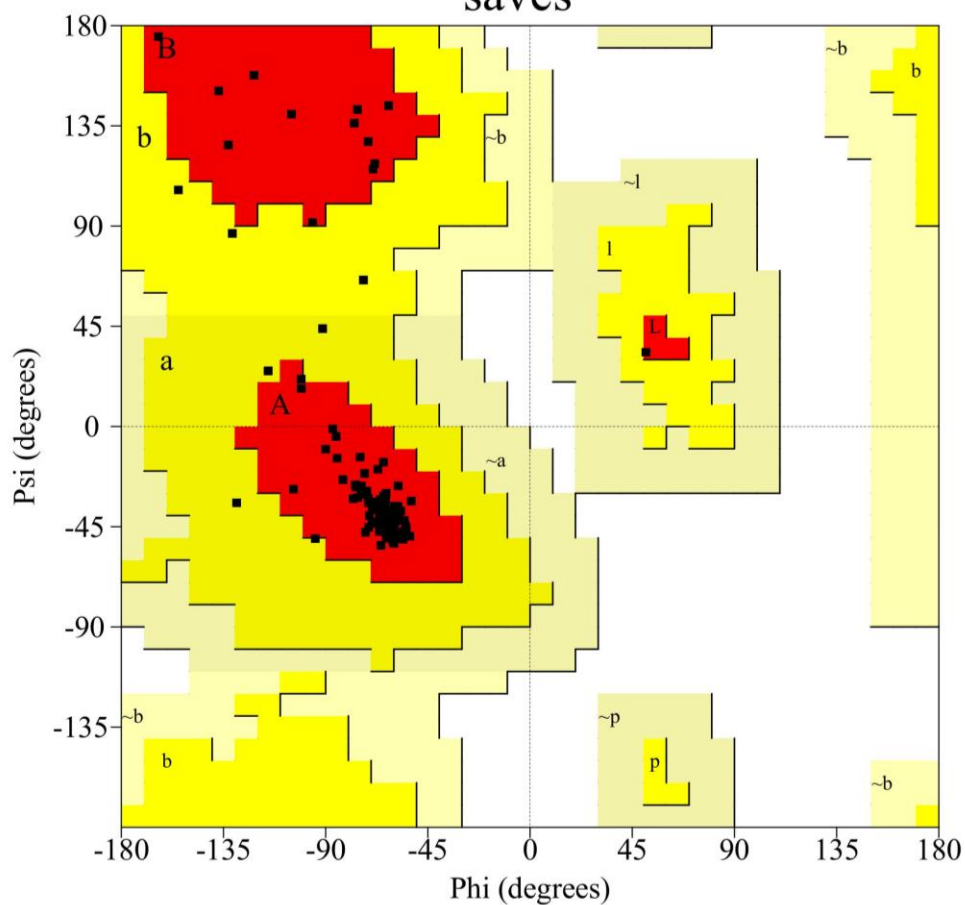
Based on an analysis of 118 structures of resolution of at least 2.0 Angstroms and R-factor no greater than 20%, a good quality model would be expected to have over 90% in the most favoured regions.

WP_020848489.1

PROCHECK

Ramachandran Plot

saves



Plot statistics

Residues in most favoured regions [A,B,L]	125	94.7%
Residues in additional allowed regions [a,b,l,p]	7	5.3%
Residues in generously allowed regions [~a,~b,~l,~p]	0	0.0%
Residues in disallowed regions	0	0.0%

Number of non-glycine and non-proline residues	132	100.0%
Number of end-residues (excl. Gly and Pro)	2	
Number of glycine residues (shown as triangles)	1	
Number of proline residues	0	

Total number of residues	135	

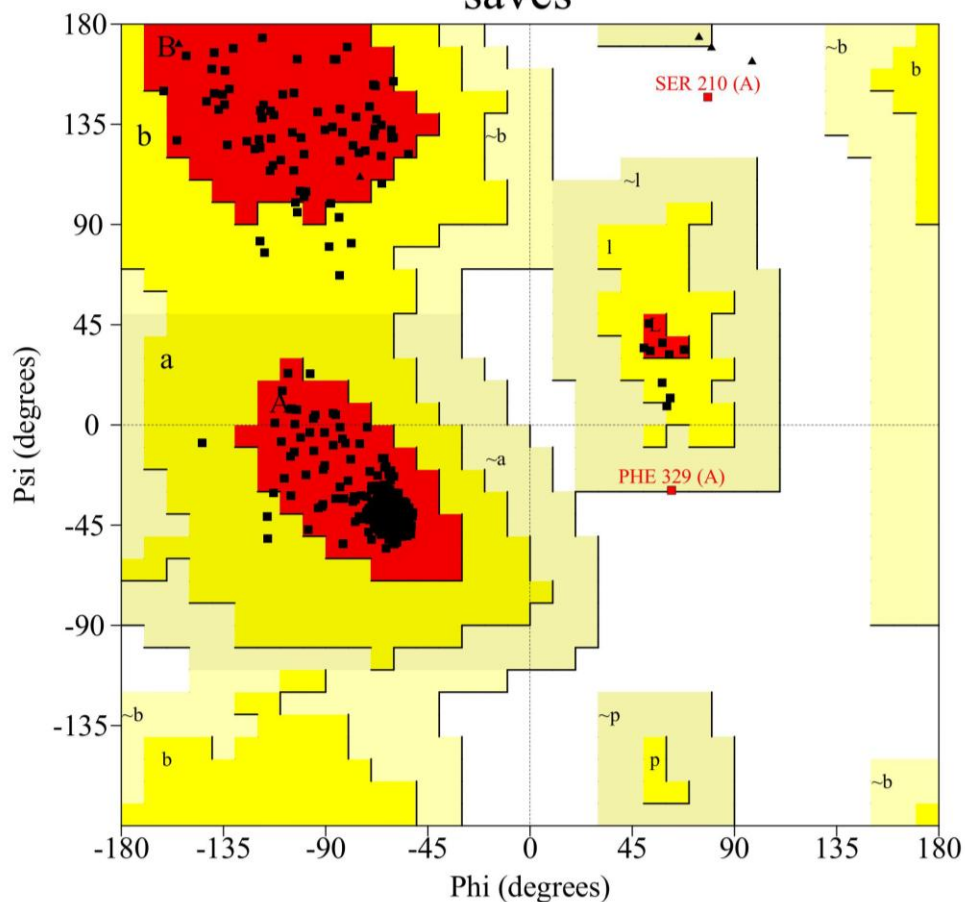
Based on an analysis of 118 structures of resolution of at least 2.0 Angstroms and R-factor no greater than 20%, a good quality model would be expected to have over 90% in the most favoured regions.

WP_041644687.1

PROCHECK

Ramachandran Plot

saves



Plot statistics

Residues in most favoured regions [A,B,L]	363	94.8%
Residues in additional allowed regions [a,b,l,p]	18	4.7%
Residues in generously allowed regions [~a,~b,~l,~p]	1	0.3%
Residues in disallowed regions	1	0.3%

Number of non-glycine and non-proline residues	383	100.0%
Number of end-residues (excl. Gly and Pro)	2	
Number of glycine residues (shown as triangles)	8	
Number of proline residues	9	

Total number of residues	402	

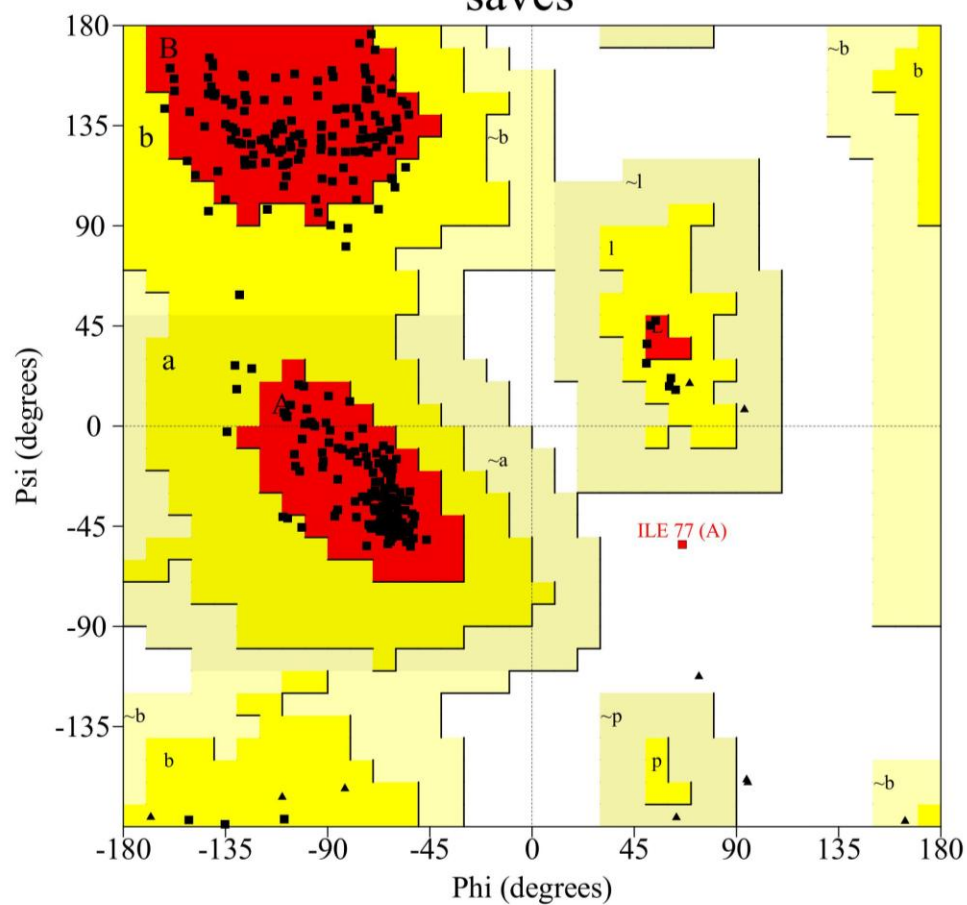
Based on an analysis of 118 structures of resolution of at least 2.0 Angstroms and R-factor no greater than 20%, a good quality model would be expected to have over 90% in the most favoured regions.

WP_419970369.1

PROCHECK

Ramachandran Plot

saves



Plot statistics

Residues in most favoured regions [A,B,L]	288	91.7%
Residues in additional allowed regions [a,b,l,p]	25	8.0%
Residues in generously allowed regions [~a,~b,~l,~p]	0	0.0%
Residues in disallowed regions	1	0.3%

Number of non-glycine and non-proline residues	314	100.0%
Number of end-residues (excl. Gly and Pro)	2	
Number of glycine residues (shown as triangles)	13	
Number of proline residues	9	

Total number of residues	338	

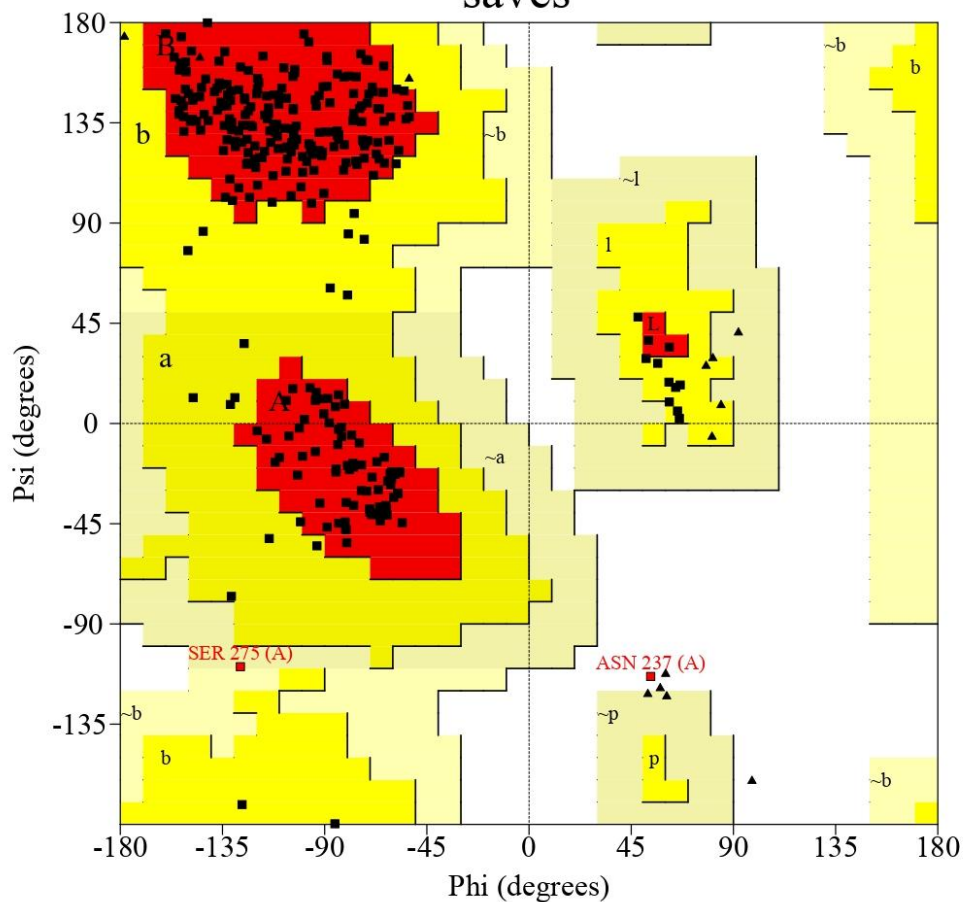
Based on an analysis of 118 structures of resolution of at least 2.0 Angstroms and R-factor no greater than 20%, a good quality model would be expected to have over 90% in the most favoured regions.

WP_420061029.1

PROCHECK

Ramachandran Plot

saves



Plot statistics

Residues in most favoured regions [A,B,L]	272	89.8%
Residues in additional allowed regions [a,b,l,p]	29	9.6%
Residues in generously allowed regions [~a,~b,~l,~p]	1	0.3%
Residues in disallowed regions	1	0.3%

Number of non-glycine and non-proline residues	303	100.0%
Number of end-residues (excl. Gly and Pro)	1	
Number of glycine residues (shown as triangles)	13	
Number of proline residues	10	

Total number of residues	327	

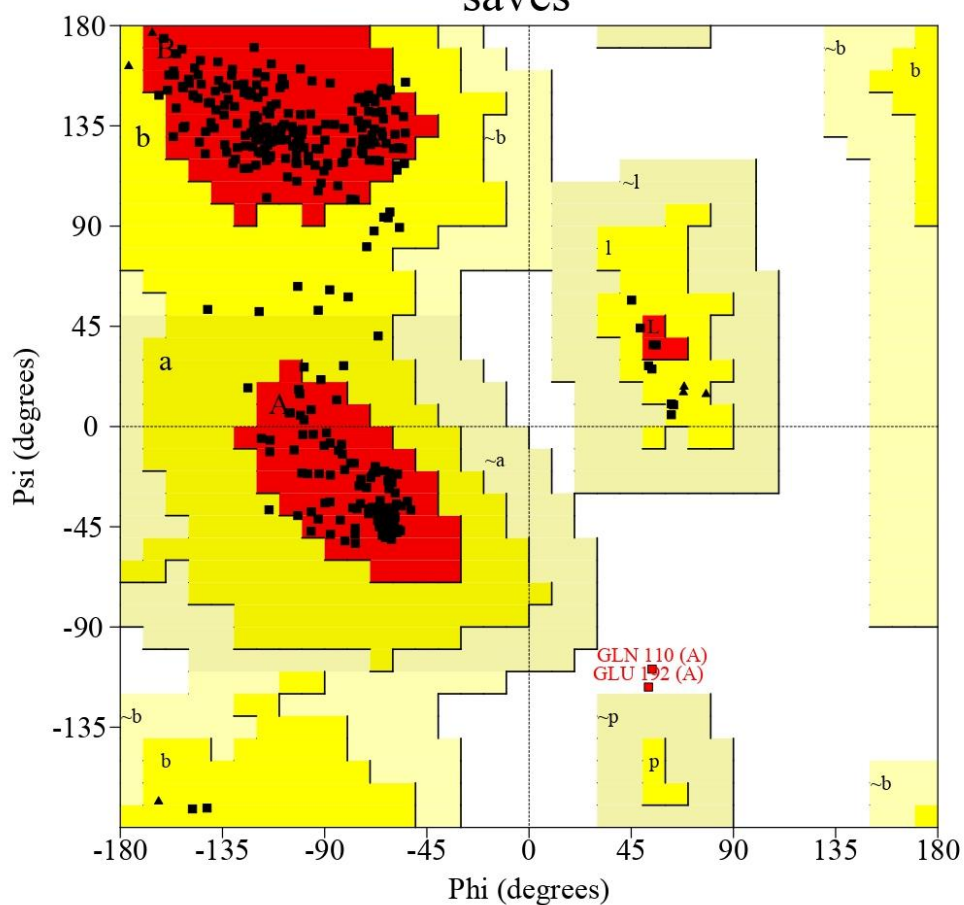
Based on an analysis of 118 structures of resolution of at least 2.0 Angstroms and R-factor no greater than 20%, a good quality model would be expected to have over 90% in the most favoured regions.

WP_004510999.1

PROCHECK

Ramachandran Plot

saves



Plot statistics

Residues in most favoured regions [A,B,L]	304	90.5%
Residues in additional allowed regions [a,b,l,p]	30	8.9%
Residues in generously allowed regions [~a,~b,~l,~p]	0	0.0%
Residues in disallowed regions	2	0.6%

Number of non-glycine and non-proline residues	336	100.0%
Number of end-residues (excl. Gly and Pro)	2	
Number of glycine residues (shown as triangles)	8	
Number of proline residues	10	

Total number of residues	356	

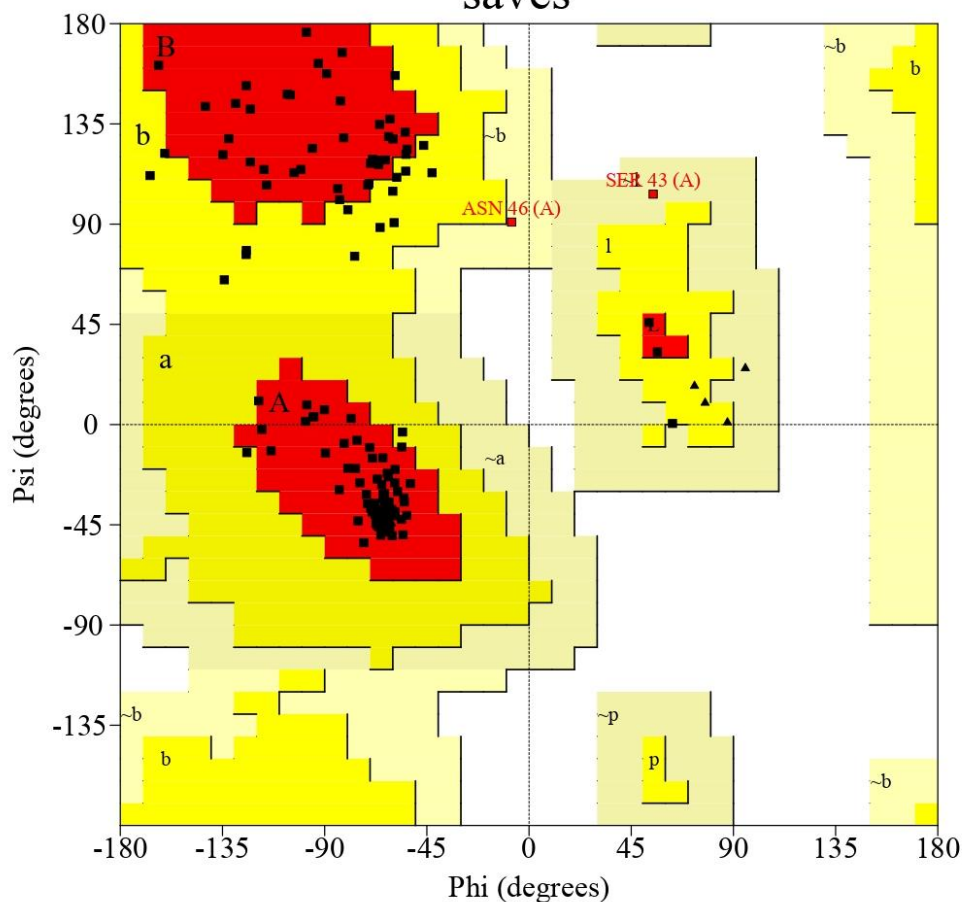
Based on an analysis of 118 structures of resolution of at least 2.0 Angstroms and R-factor no greater than 20%, a good quality model would be expected to have over 90% in the most favoured regions.

WP_260902335.1

PROCHECK

Ramachandran Plot

saves



Plot statistics

Residues in most favoured regions [A,B,L]	124	86.7%
Residues in additional allowed regions [a,b,l,p]	17	11.9%
Residues in generously allowed regions [~a,~b,~l,~p]	2	1.4%
Residues in disallowed regions	0	0.0%

Number of non-glycine and non-proline residues	143	100.0%
Number of end-residues (excl. Gly and Pro)	2	
Number of glycine residues (shown as triangles)	8	
Number of proline residues	4	

Total number of residues	157	

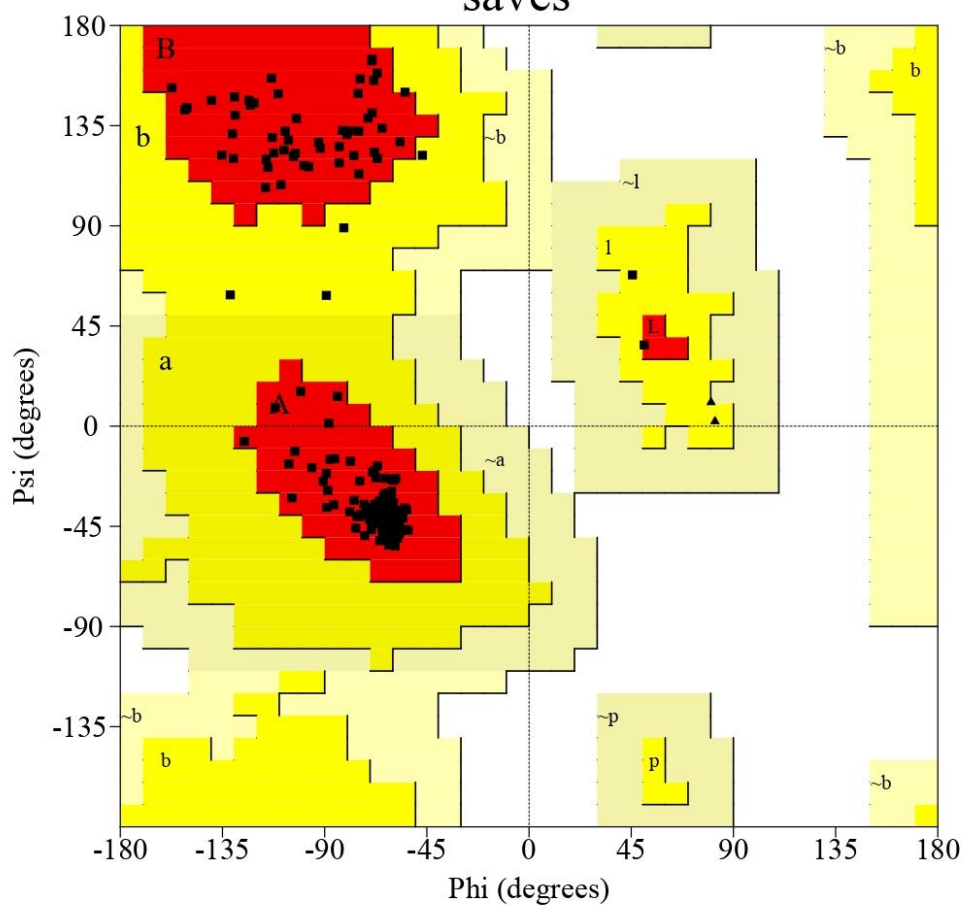
Based on an analysis of 118 structures of resolution of at least 2.0 Angstroms and R-factor no greater than 20%, a good quality model would be expected to have over 90% in the most favoured regions.

WP_260901056.1

PROCHECK

Ramachandran Plot

saves



Plot statistics

Residues in most favoured regions [A,B,L]	253	98.1%
Residues in additional allowed regions [a,b,l,p]	5	1.9%
Residues in generously allowed regions [~a,~b,~l,~p]	0	0.0%
Residues in disallowed regions	0	0.0%

Number of non-glycine and non-proline residues	258	100.0%
Number of end-residues (excl. Gly and Pro)	2	
Number of glycine residues (shown as triangles)	4	
Number of proline residues	6	

Total number of residues	270	

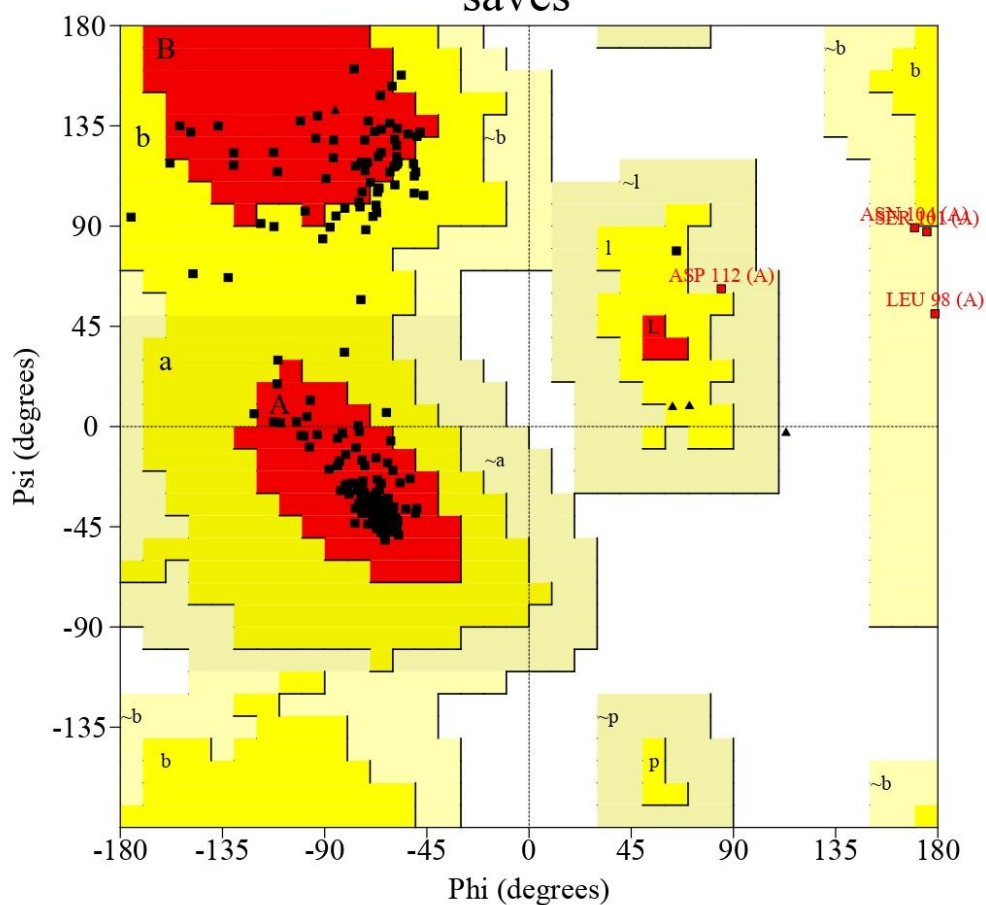
Based on an analysis of 118 structures of resolution of at least 2.0 Angstroms and R-factor no greater than 20%, a good quality model would be expected to have over 90% in the most favoured regions.

WP_012012715.1

PROCHECK

Ramachandran Plot

saves



Plot statistics

Residues in most favoured regions [A,B,L]	255	87.0%
Residues in additional allowed regions [a,b,l,p]	34	11.6%
Residues in generously allowed regions [~a,~b,~l,~p]	4	1.4%
Residues in disallowed regions	0	0.0%

Number of non-glycine and non-proline residues	293	100.0%
Number of end-residues (excl. Gly and Pro)	2	
Number of glycine residues (shown as triangles)	8	
Number of proline residues	7	

Total number of residues	310	

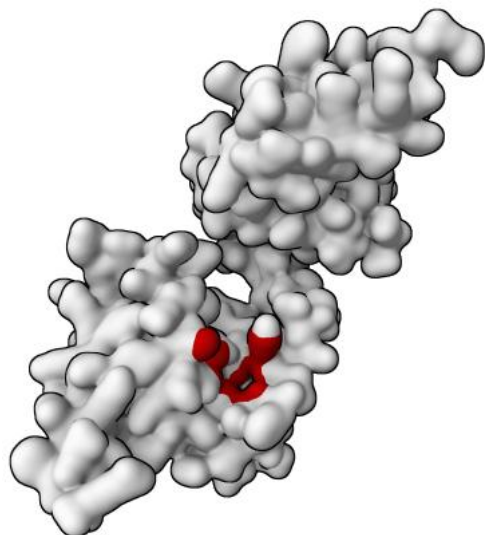
Based on an analysis of 118 structures of resolution of at least 2.0 Angstroms and R-factor no greater than 20%, a good quality model would be expected to have over 90% in the most favoured regions.

WP_193220824.1

Supplementary Figure 4 :- Ligand binding site prediction results of the 6 possible drug targets

*Red color is indicating the binding pocket

1. WP_004510585.1



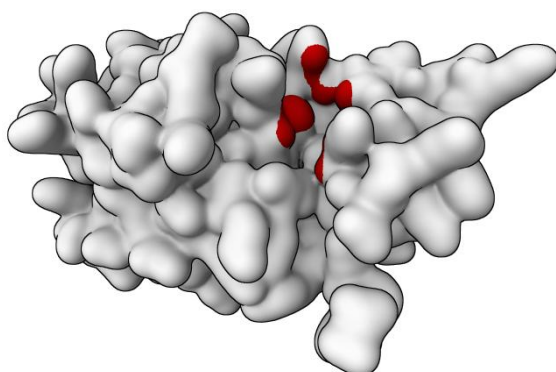
Number of residues: 8

Score: 1.62

Pocket center: (-13.3837, -2.4921, 3.3167)

Residues: A_130, A_134, A_137, A_138, A_139, A_162, A_165, A_166

2. WP_020848489.1



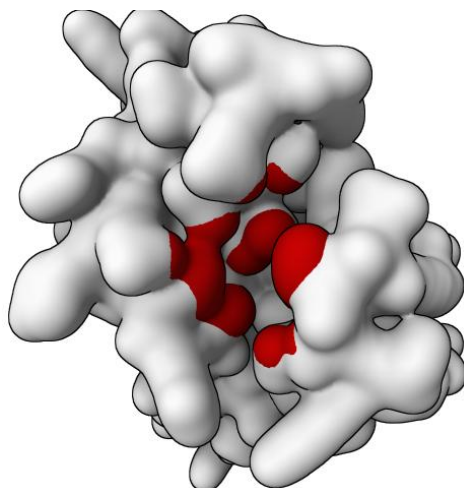
Number of residues: 9

Score: 0.95

Pocket center: (1.0854, 1.8080, 8.7946)

Residues: A_10, A_11, A_123, A_124, A_125, A_126, A_9, A_96, A_98

3. WP_041644687.1



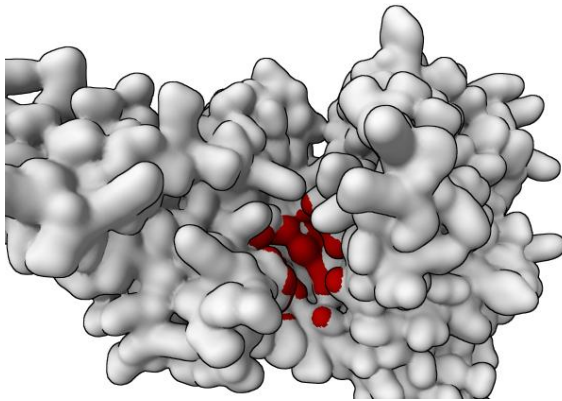
Number of residues: 11

Score: 4.26

Pocket center: (-10.4745, -4.4597, -12.8666)

Residues: A_10, A_102, A_105, A_106, A_109, A_3, A_50, A_52, A_55, A_6, A_7

4. WP_419970369.1



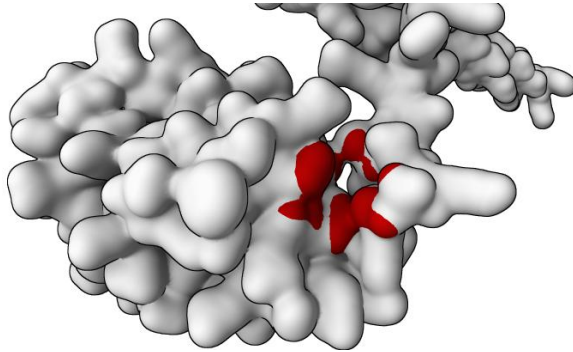
Number of residues: 20

Score: 16.48

Pocket center: (4.6142, -0.9480, -6.3246)

Residues: A_105, A_106, A_109, A_110, A_112, A_113, A_115, A_117, A_207, A_255, A_256, A_259, A_30, A_302, A_305, A_306, A_309, A_323, A_324, A_327

5. WP_260901056.1



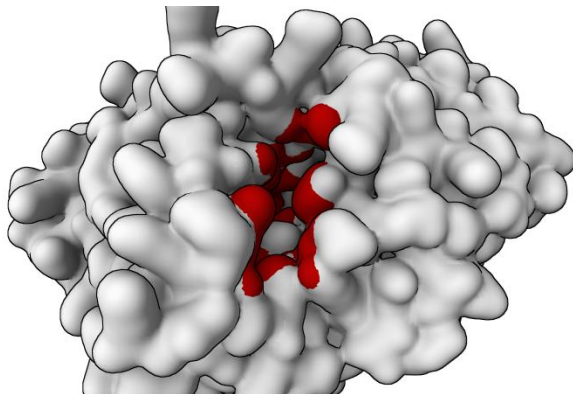
Number of residues: 7

Score: 2

Pocket center: (12.0265, -3.3242, 8.1920)

Residues: A_113, A_114, A_117, A_118, A_55, A_60, A_61

6. WP_420061029.1



Number of residues: 41

Score: 53.36

Pocket center: (-4.5493, 2.4117, 4.4941)

Residues: A_107, A_108, A_110, A_14, A_149, A_154, A_155, A_156, A_159, A_196, A_198, A_216, A_229, A_230, A_235, A_236, A_239, A_242, A_244, A_26, A_27, A_273, A_275, A_277, A_28, A_286, A_287, A_288, A_289, A_29, A_290, A_291, A_293, A_297, A_298, A_299, A_30, A_300, A_302, A_33, A_82