

erythrose-4-phosphate + phosphoenolpyruvate

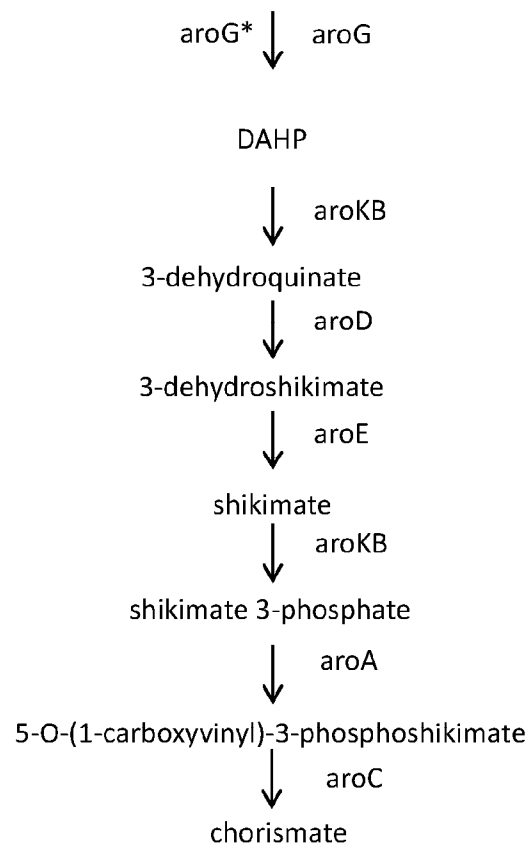


Fig. 1

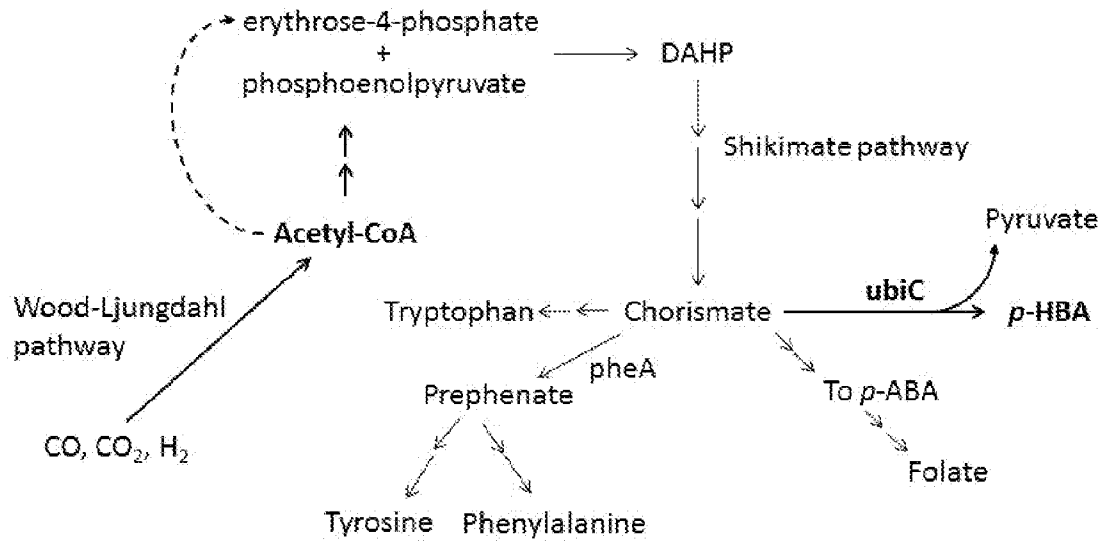


Fig. 2

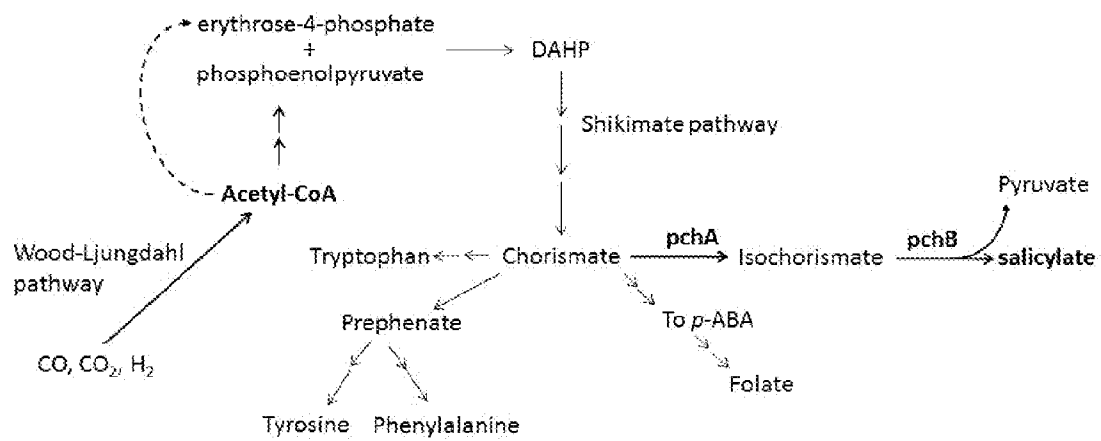


Fig. 3

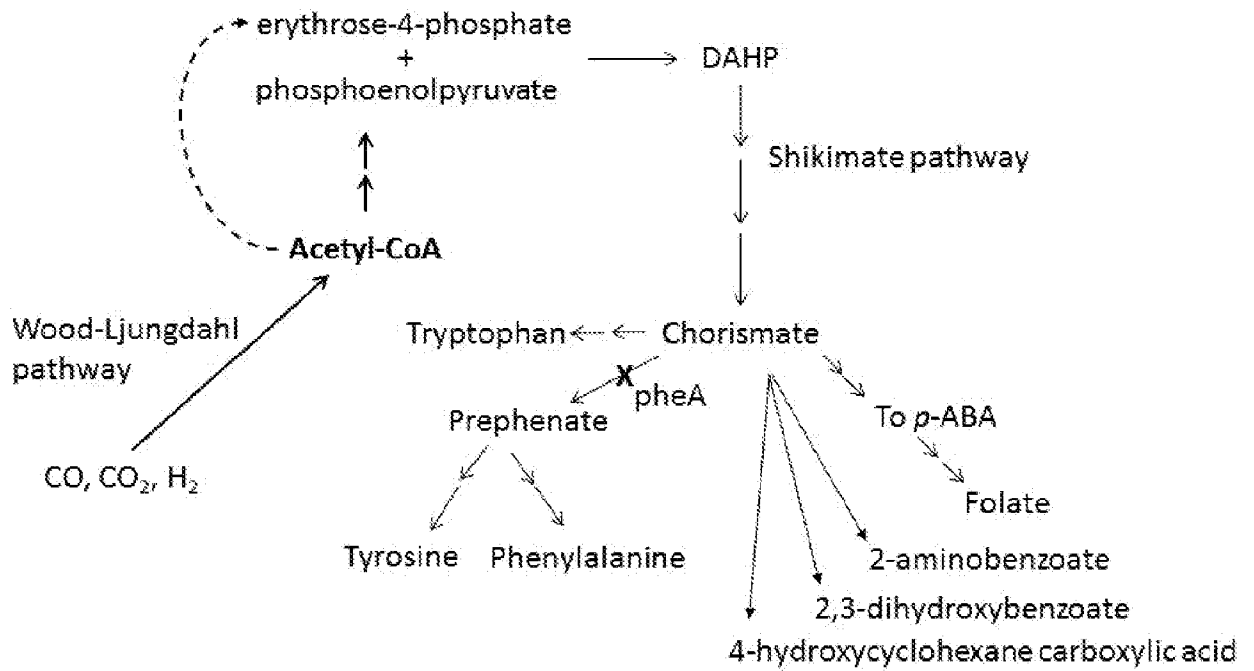


Fig. 4

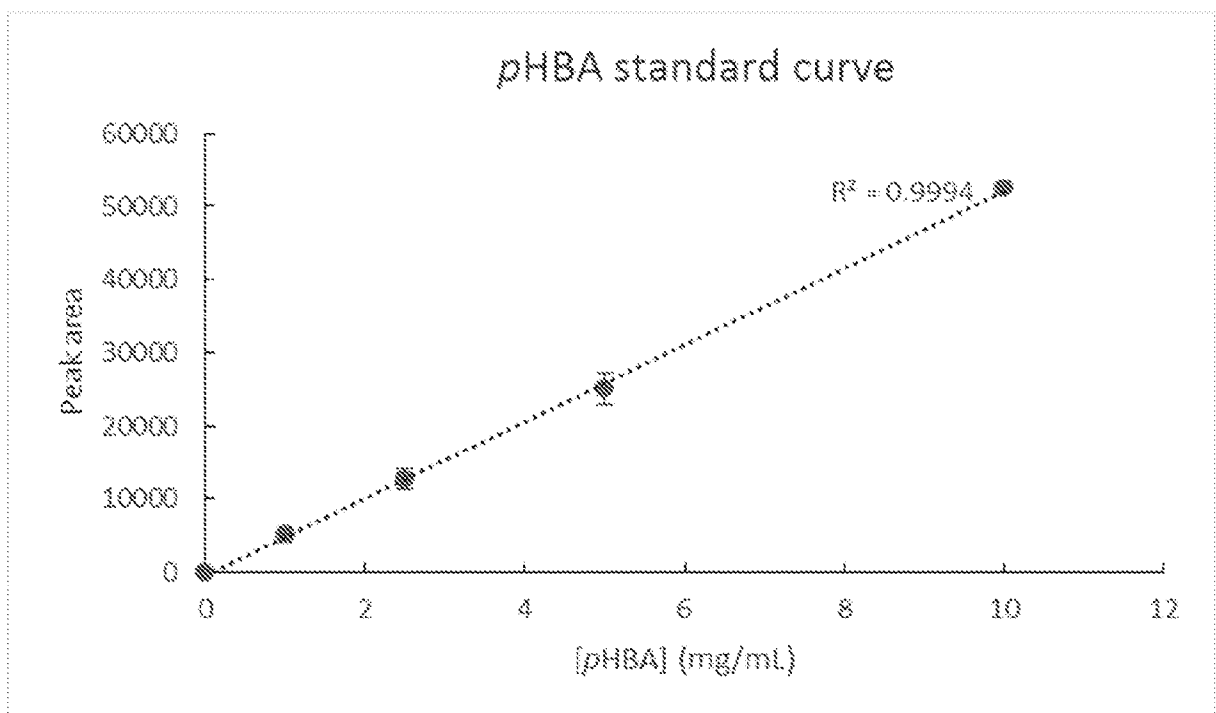


Fig. 5

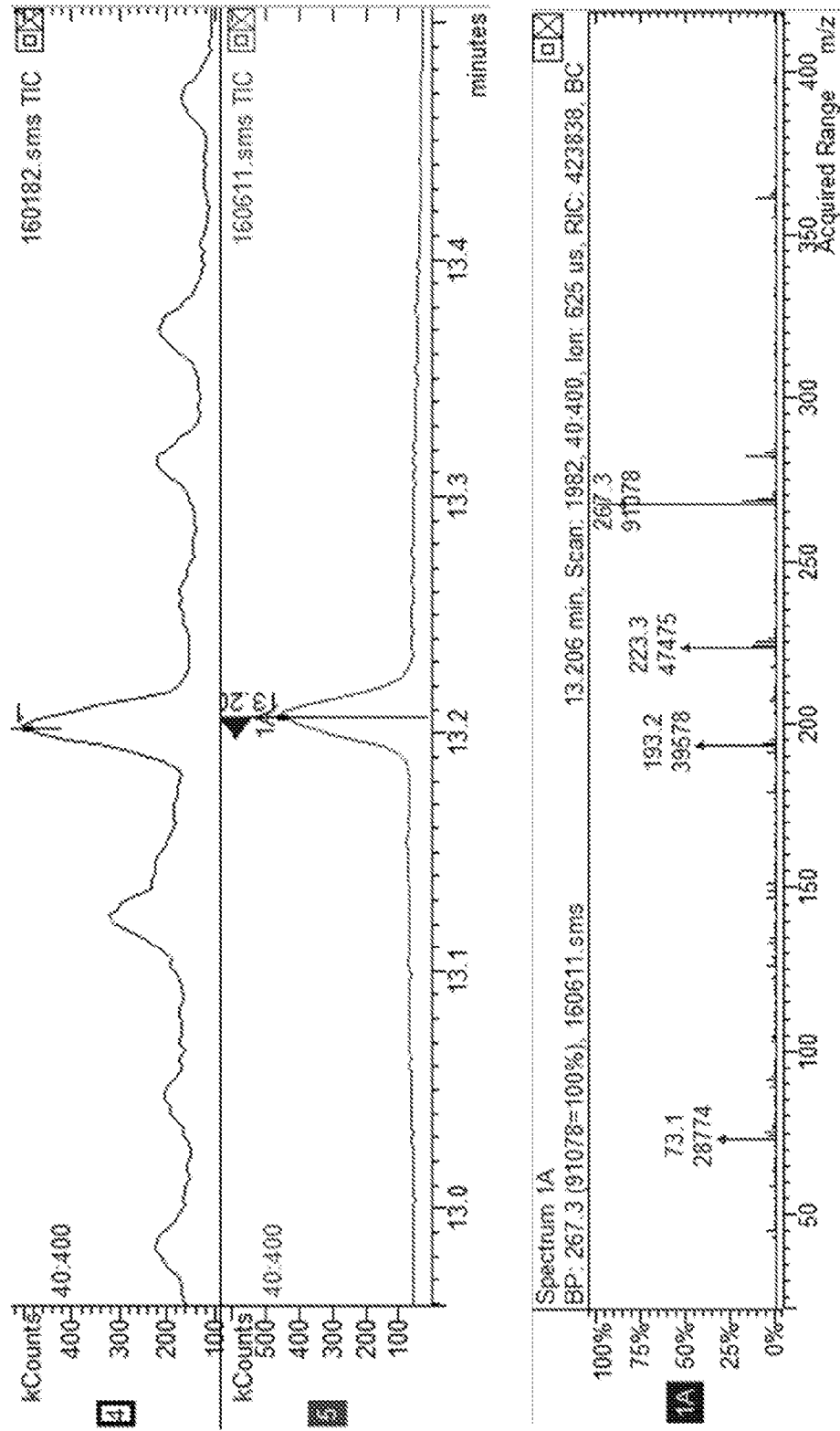


Fig. 6a

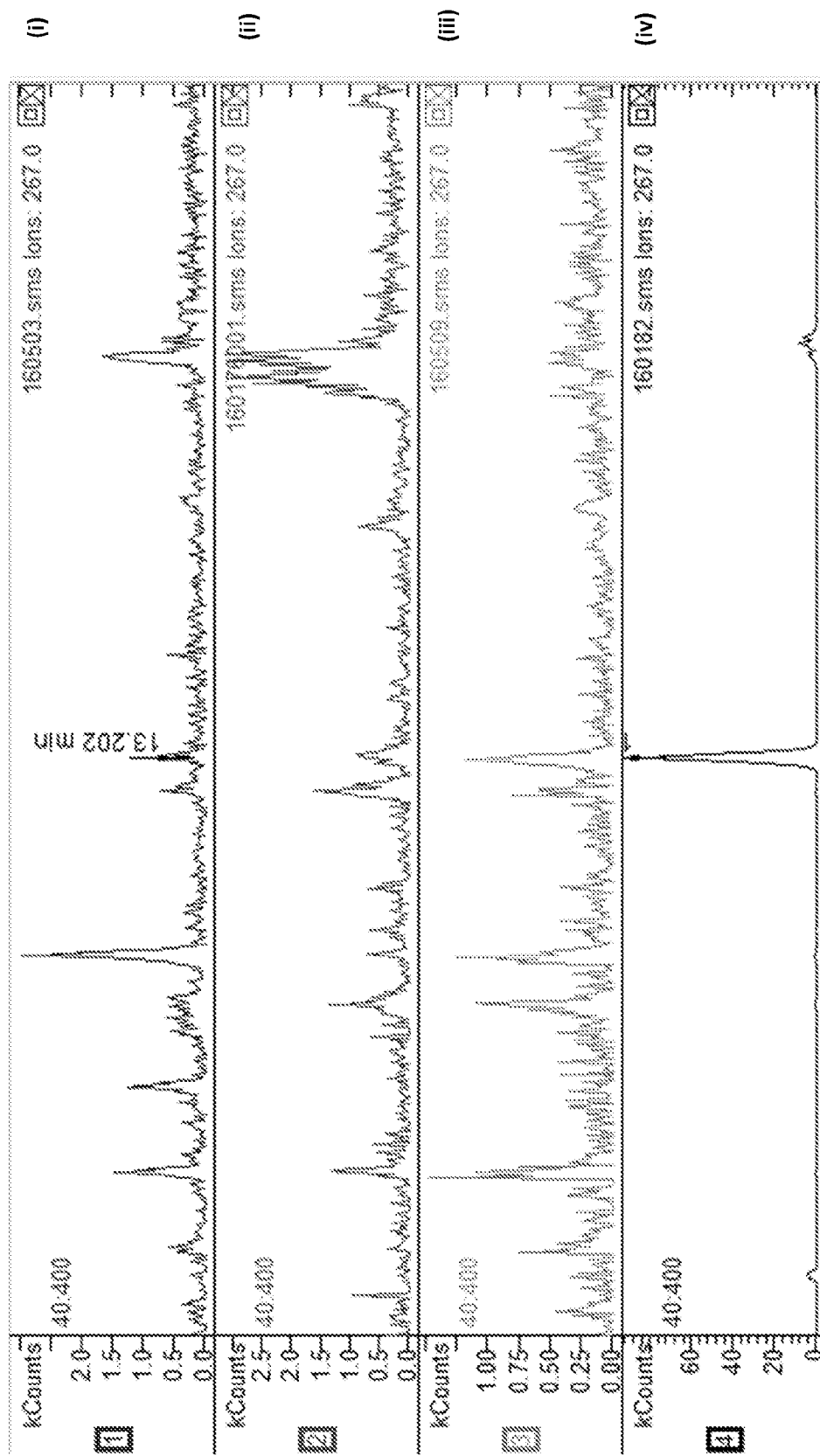


Fig. 6b

(c)

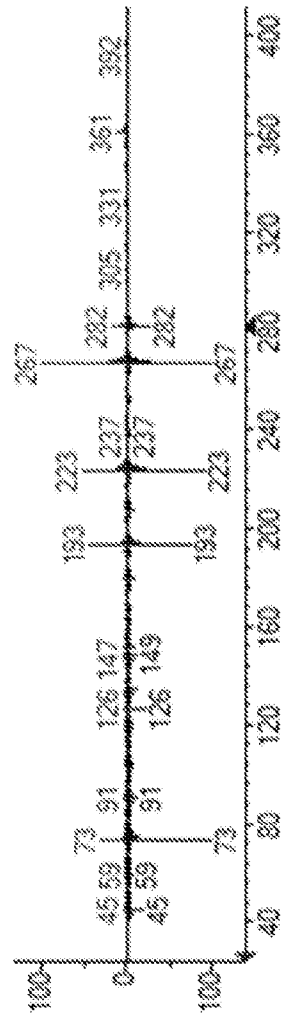


Fig. 6b (continued)

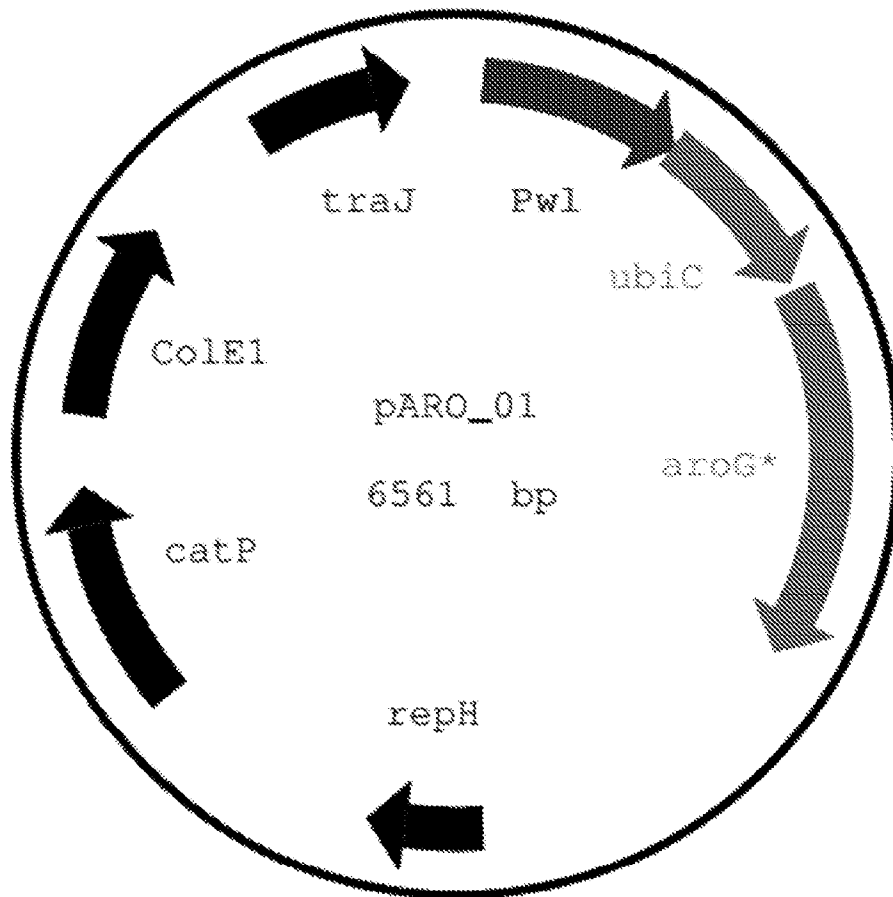


Fig. 7

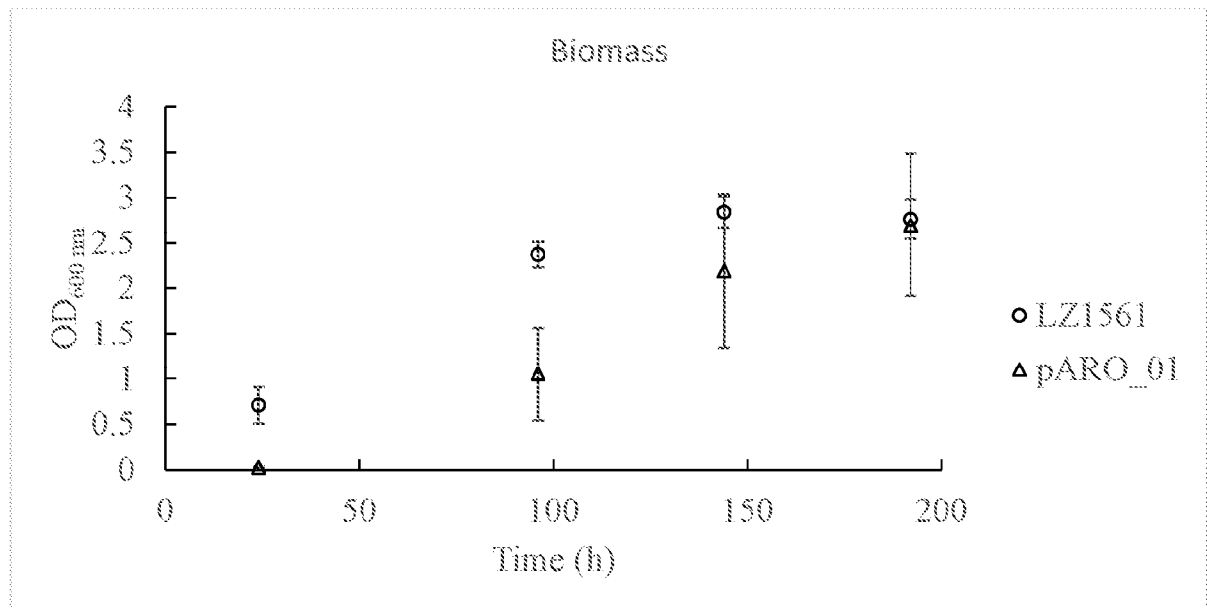


Fig. 8

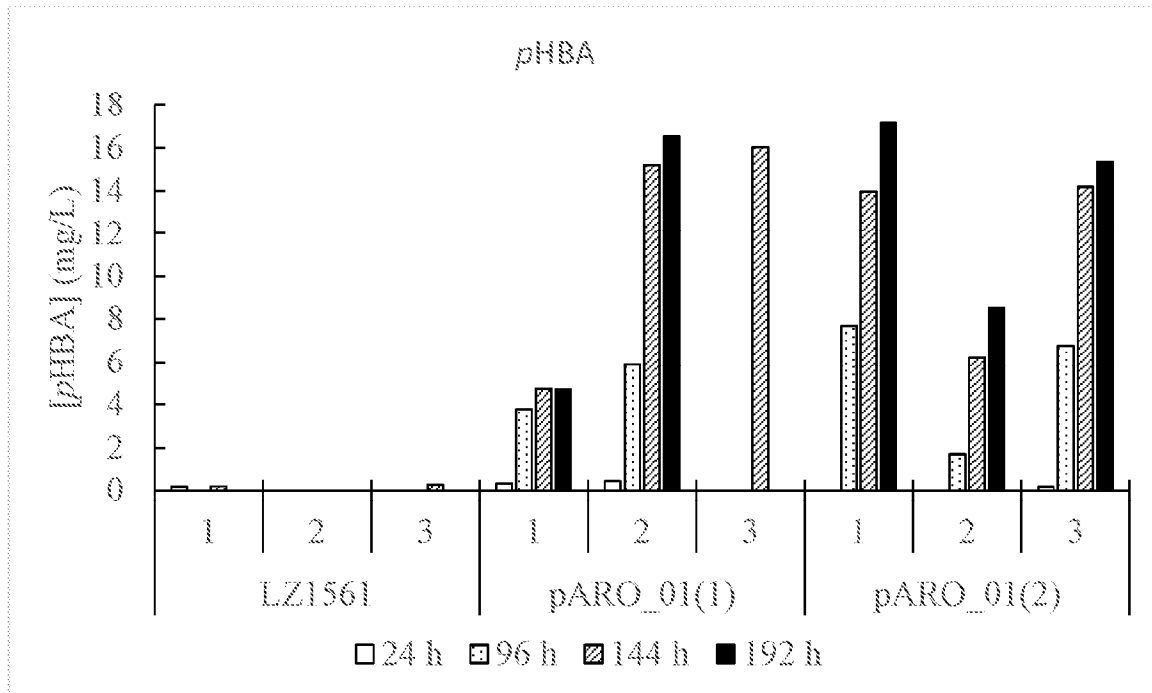


Fig. 9a

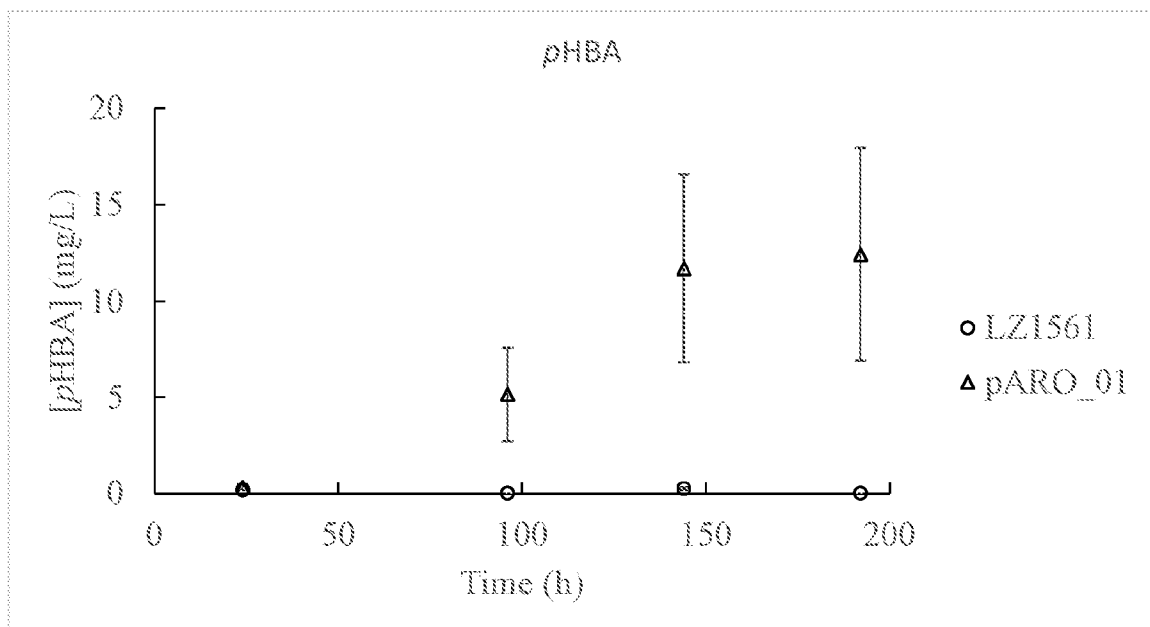


Fig. 9b

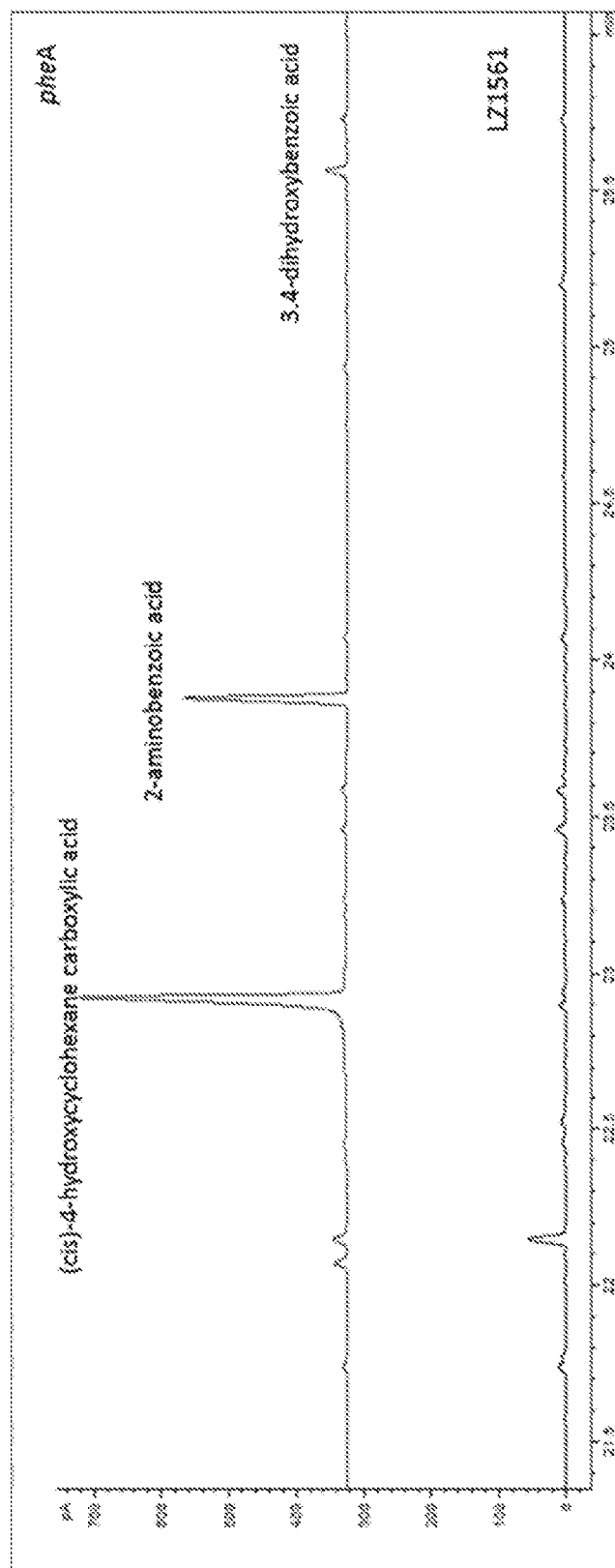


Fig. 10

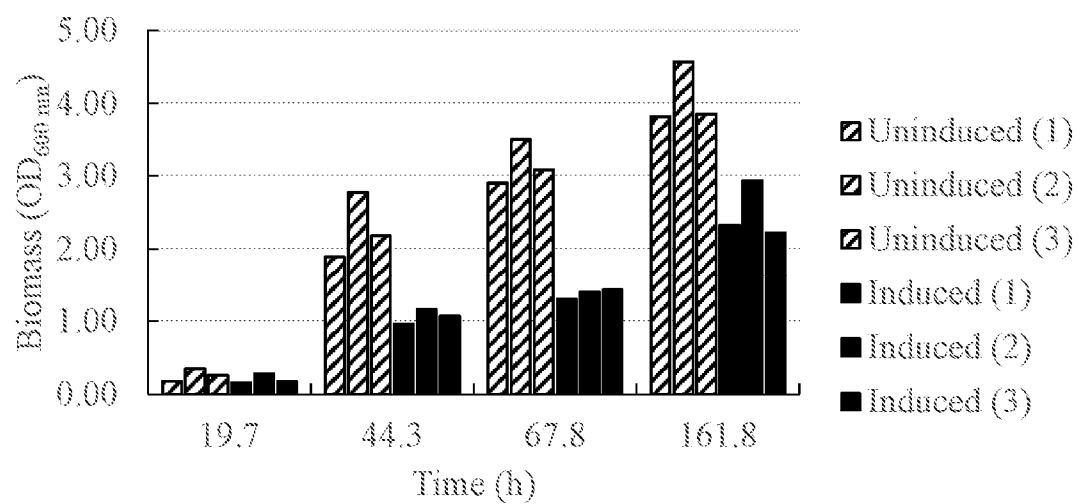


Fig. 11a

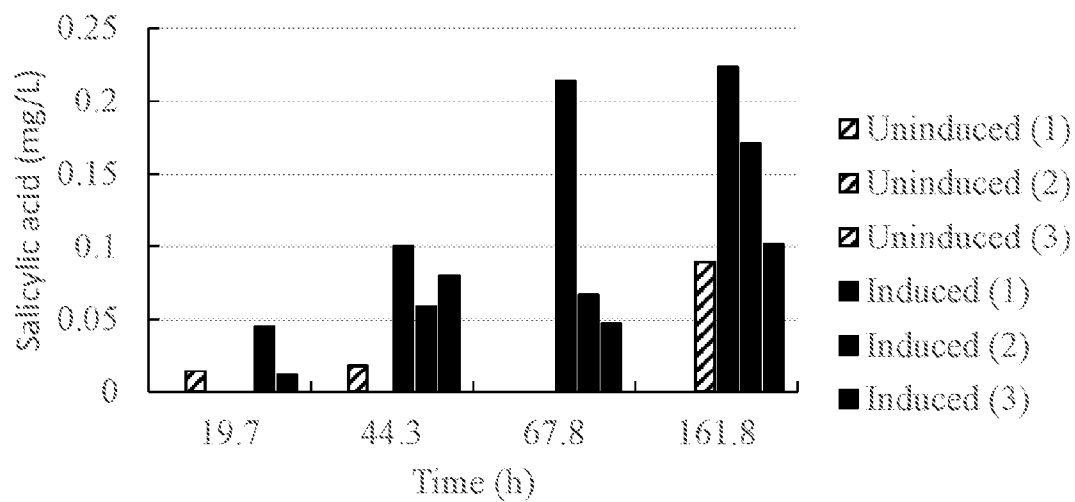


Fig. 11b

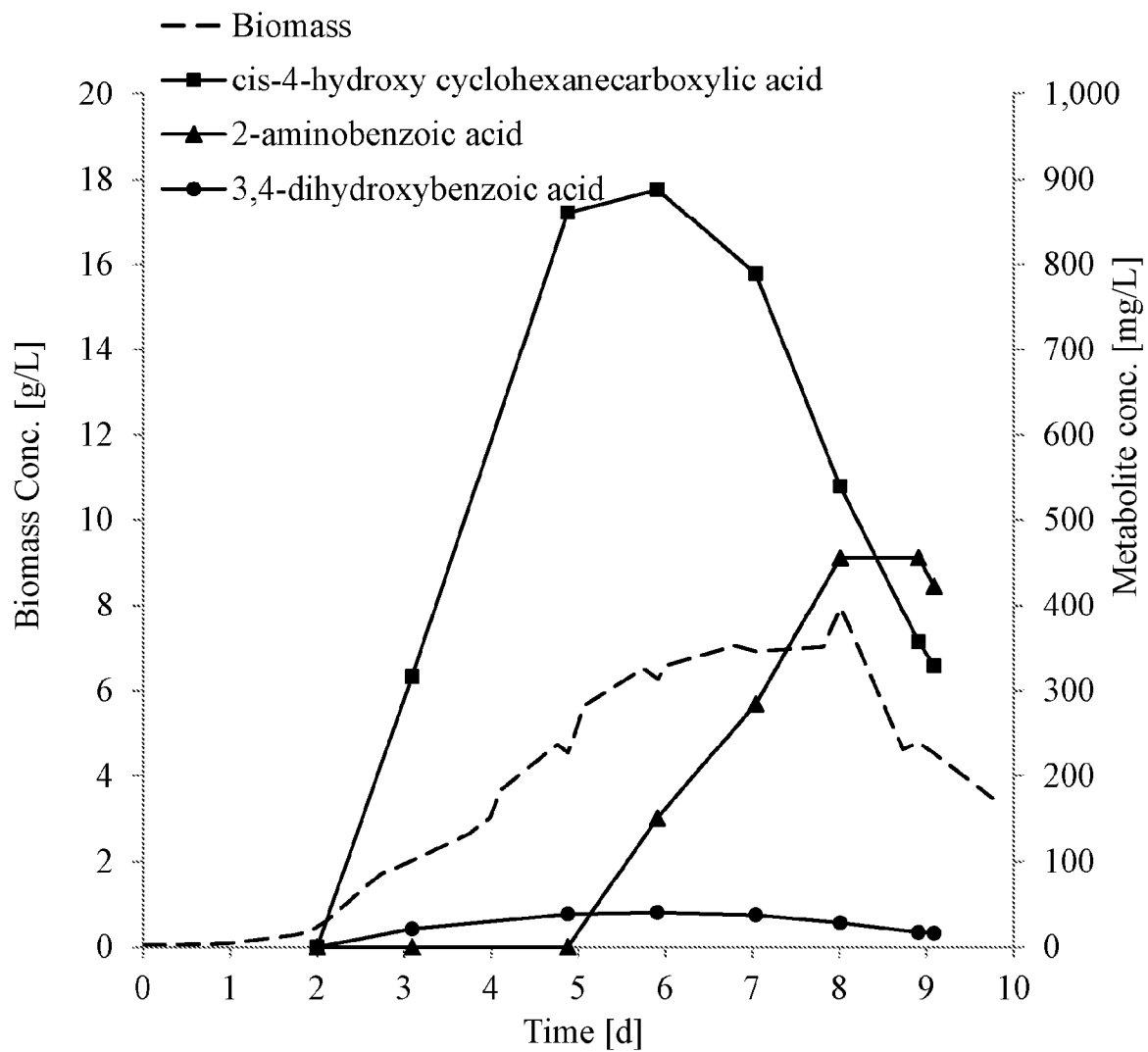


Fig. 12

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Proteobacteria	WP_001326644.1	Bartonella clarridgeiae	WP_013544696.1
Escherichia coli	WP_032343343.1	Providencia alcalifaciens	WP_036955412.1
Enterobacteriaceae	WP_001295693.1	Providencia rustigianii	WP_006816067.1
Shigella flexneri	WP_005071384.1	Bartonella rattimassiliensis	WP_007347862.1
Shigella sp. SF-2015	WP_005002785.1	Edwardsiella anguillarum	WP_034163029.1
Escherichia	WP_000019214.1	Edwardsiella	WP_045427790.1
Shigella sonnei	WP_052990089.1	Phaseolibacter flectens	WP_028684858.1
Escherichia albertii	WP_000019228.1	Providencia stuartii	WP_004925912.1
Citrobacter youngae	WP_006688307.1	Edwardsiella ictaluri	WP_015869674.1
Citrobacter freundii	WP_054527959.1	Edwardsiella piscicida	WP_015460726.1
Citrobacter	WP_048213934.1	Sodalis praecaptivus	WP_051440195.1
Citrobacter pasteurii	WP_005132668.1	Sodalis glossinidius	WP_011411956.1
Citrobacter freundii complex	WP_032942095.1	Edwardsiella tarda	WP_035597793.1
Enterobacter cloacae	WP_063411731.1	Providencia sneebia	WP_008916956.1
Citrobacter amalonaticus	WP_061075585.1	Providencia burhodogranariae	WP_008913736.1
Gammaproteobacteria	WP_042999031.1	Edwardsiella hoshinae	WP_024524687.1
Enterobacter	WP_014882105.1	Candidatus Sodalis pierantonius	WP_025246620.1
Enterobacter cloacae complex	WP_045355219.1	Photobacterium aquae	WP_047877737.1
Enterobacter sp. BIDMC 29	WP_041911565.1	Photobacterium marinum	WP_007469524.1
Enterobacter sp. 35730	WP_045268808.1	Photobacterium sanguinancrui	WP_062688249.1
Enterobacter sp. T1-1	WP_029882656.1	Photobacterium swingsii	WP_048898785.1
Enterobacter cloacae complex 'Hoffmann cluster IV'	WP_008500083.1	Photobacterium damsela	WP_044173922.1
Enterobacter asburiae	WP_023617246.1	Photobacterium sanctipauli	WP_036818650.1
Enterobacter sp. BIDMC92	WP_047957525.1	Agarivorans albus	WP_016399749.1
Enterobacter sp. 638	WP_011915505.1	Photobacterium profundum	WP_006233275.1
Citrobacter farmeri	WP_042321063.1	Vibrio maritimus	WP_042478790.1
Citrobacter koseri	WP_012134646.1	Vibrio metoecus	WP_055052109.1

Fig. 13

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Enterobacter hormaechei	WP_023299087.1	Grimontia celer	WP_062666858.1
Escherichia fergusonii	WP_000019211.1	Vibrio	WP_001072883.1
Enterobacter cancerogenus	WP_042321179.1	Agarivorans gilvus	WP_055733842.1
Enterobacter sp. GN02454	WP_047742368.1	Vibrio alginolyticus	WP_053311436.1
Salmonella enterica	WP_000019223.1	Grimontia indica	WP_002535407.1
Lelliottia amnigena	WP_059179835.1	Photobacterium ganghwense	WP_047887262.1
Enterobacter sp. Bisph1	WP_039055748.1	Grimontia sp. AD028	WP_046303386.1
Salmonella bongori	WP_020845807.1	Vibrio neptunius	WP_045975676.1
Enterobacter sp. FY-07	WP_061498857.1	Vibrio coralliilyticus	WP_043006692.1
Escherichia vulneris	WP_042388891.1	Photobacterium aphoticum	WP_047873744.1
Yokenella regensburgei	WP_040902665.1	Photobacterium leiognathi	WP_053987423.1
Trabulsiella odontotermitis	WP_054179777.1	Plesiomonas	WP_010862816.1
Trabulsiella guamensis	WP_038158396.1	Vibrio xuii	WP_053441696.1
Enterobacter sp. MT20	WP_061706855.1	Vibrio sp. VPAP30	WP_049845305.1
Kosakonia radicincitans	WP_043955711.1	Vibrio tubiashii	WP_038197373.1
Kluyvera intermedia	WP_047372194.1	Salinivibrio soccompensis	WP_025673764.1
Enterobacter sp. Bisph2	WP_039077918.1	Grimontia marina	WP_062709804.1
Klebsiella oxytoca	WP_004109561.1	Vibrio galathea	WP_045956983.1
Enterobacter xiangfangensis	WP_058715018.1	Grimontia hollisae	WP_005501667.1
Leclercia adecarboxylata	WP_039031929.1	Photobacterium sp. SKA34	WP_006647642.1
Enterobacter aerogenes	WP_045362420.1	Vibrio cholerae	WP_032480537.1
Klebsiella	WP_014227537.1	Vibrio caribbeanicus	WP_009602602.1
Enterobacter massiliensis	WP_044180994.1	Vibrionales bacterium SWAT-3	WP_008224249.1
Citrobacter rodentium	WP_012907701.1	Enterovibrio calviensis	WP_017016798.1
Raoultella terrigena	WP_045853463.1	Vibrio bivalvicida	WP_054963396.1
Klebsiella sp. OBRC7	WP_009654674.1	Vibrio orientalis	WP_004409565.1
Klebsiella sp. RIT-PI-d	WP_049838501.1	Vibrio sp. HI00D65	WP_063524665.1
Raoultella ornithinolytica	WP_041143590.1	Vibrio ordalii	WP_038198194.1

Fig. 13 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Klebsiella pneumoniae	WP_023342419.1	Vibrio splendidus	WP_032554291.1
Klebsiella sp. 10982	WP_025713803.1	Vibrio nigripulchritudo	WP_045967092.1
Enterobacteriaceae bacterium strain FGI 57	WP_015966334.1	Photobacterium phosphoreum	WP_045031601.1
Pluralibacter gergoviae	WP_048284191.1	Salinivibrio sp. KP-1	WP_046074636.1
Kluyvera cryocrescens	WP_061283371.1	Photobacterium gaetbulicola	WP_044622288.1
Franconibacter helveticus	WP_024553577.1	Photobacterium	WP_045083799.1
Kluyvera ascorbata	WP_035896877.1	Enterovibrio norvegicus	WP_016961855.1
Franconibacter pulveris	WP_029593165.1	Photobacterium angustum	WP_005372020.1
Shimwellia blattae	WP_002445222.1	Vibrio brasiliensis	WP_040895525.1
Enterobacteriaceae bacterium LSJC7	WP_017373629.1	Alliivibrio fischeri	WP_012534390.1
Cronobacter	WP_007796820.1	Vibrio pacinii	WP_038175692.1
Erwinia sp. SCU-B244	WP_058912420.1	Vibrio litoralis	WP_051241116.1
Cronobacter sakazakii	WP_054624115.1	Vibrio sp. HENC-03	WP_009705152.1
Cronobacter turicensis	WP_007764634.1	Vibrio genomosp. F6	WP_017051810.1
Cronobacter malonaticus	WP_032994815.1	Photobacterium aquimaris	WP_060997736.1
Cronobacter muytjensii	WP_038867328.1	Vibrio parahaemolyticus	WP_024699858.1
Enterobacter sp. Ag1	WP_008455844.1	Vibrio harveyi	WP_033007672.1
Cronobacter condimenti	WP_007667577.1	Vibrio fortis	WP_032553387.1
Cronobacter universalis	WP_007702330.1	Vibrio campbellii	WP_051118327.1
Cedecea neteri	WP_039299465.1	Vibrio sp. CAIM 1540	WP_047049487.1
Cronobacter dublinensis	WP_007752848.1	Photobacterium iliopiscarium	WP_045035868.1
Klebsiella michiganensis	WP_045780974.1	Moritella dasanensis	WP_017222441.1
Buttiauxella agrestis	WP_034456982.1	Vibrio harveyi group	WP_045372302.1
Siccibacter colletis	WP_031521381.1	Psychromonas arctica	WP_028869261.1
Cedecea davisae	WP_016517422.1	Vibrio rotiferianus	WP_029560889.1
Mangrovibacter sp. MFB070	WP_036102985.1	Bermanella marisrubri	WP_050758020.1
Enterobacter ludwigii	WP_061718382.1	Vibrio nereis	WP_053396837.1
Pantoea sp. RIT-PI-b	WP_049851273.1	Vibrio sp. OY15	WP_033907265.1
Pantoea sp. GM01	WP_009128583.1	Alliivibrio wodanis	WP_060993987.1
Pantoea sp. 3.5.1	WP_031375526.1	Vibrio renipiscarius	WP_040988992.1

Fig. 13 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Pantoea sp. YR343	WP_008109935.1	Vibrio sp. AND4	WP_043991786.1
Erwinia billingiae	WP_013200342.1	Vibrio shilonii	WP_050798660.1
Pantoea sp. AS-PWVM4	WP_021184075.1	Vibrio ichthyenteri	WP_006713584.1
Pantoea	WP_038643645.1	Vibrio azureus	WP_033004368.1
Pantoea sp. BL1	WP_045832390.1	Vibrio sp. 3062	WP_063605216.1
Erwinia typographi	WP_034898291.1	Vibrio diazotrophicus	WP_042489735.1
Erwinia	WP_014539619.1	Vibrio crassostreae	WP_048662880.1
Erwinia iniecta	WP_052902020.1	Vibrio sp. MED222	WP_009848243.1
Pantoea sp. PSNIH2	WP_038629825.1	Vibrio tasmaniensis	WP_032500146.1
Erwinia piriflorinigrans	WP_023656527.1	Vibrio hyugaensis	WP_045466146.1
Pantoea agglomerans	WP_033780412.1	Moritella viscosa	WP_045112351.1
Erwinia toletana	WP_017801681.1	Vibrio sp. J2-17	WP_050654326.1
Erwinia mallotivora	WP_034935024.1	Vibrio navarrensis	WP_039422096.1
Pantoea sp. IMH	WP_024966000.1	Psychromonas ingrahamii	WP_011771703.1
Erwinia amylovora	WP_004160504.1	Idiomarina xiamenensis	WP_008489429.1
Type-F symbiont of Plautia stali	WP_058956993.1	Vibrio sagamiensis	WP_039980960.1
Pantoea sp. Sc1	WP_009092618.1	Vibrio owensii	WP_042980126.1
Pantoea anthophila	WP_046101010.1	Vibrio sp. J2-4	WP_050649045.1
Erwinia persicina	WP_062748343.1	Aliivibrio salmonicida	WP_012551314.1
Pantoea sp. At-9b	WP_013507482.1	Vibrio rhizosphaerae	WP_038185523.1
bacteria symbiont BFo1 of Frankliniella occidentalis	WP_048917577.1	Aliivibrio logei	WP_017020963.1
Erwinia tasmaniensis	WP_012442801.1	Vibrio genomosp. F10	WP_017036869.1
Erwinia sp. Leaf53	WP_056235041.1	Vibrio breoganii	WP_017243149.1
Pantoea sp. PSNIH1	WP_039381957.1	Alteromonas macleodii	WP_041693341.1
Pantoea ananatis	WP_029569357.1	Vibrio hepaticus	WP_053410680.1
Type-D symbiont of Plautia stali	WP_058972255.1	Vibrio mytili	WP_041155288.1
Pantoea stewartii	WP_006121550.1	Vibrio scopthalmi	WP_005599707.1
Pantoea dispersa	WP_058757568.1	Psychromonas sp. SP041	WP_025564742.1
Type-B symbiont of Plautia stali	WP_059028282.1	Vibrio sp. S234-5	WP_045569648.1
Pantoea sp. OXWO6B1	WP_063877979.1	Vibrio sp. 2423-01	WP_061893561.1
Yersinia	WP_019212311.1	Marinobacter lipolyticus	WP_036190774.1
Erwinia tracheiphila	WP_016191385.1	Vibrio sp. MEBiC08052	WP_059123026.1
Yersinia frederiksenii	WP_004711220.1	Alteromonas mediterranea	WP_012516591.1
Pantoea sp. A4	WP_026042541.1	Vibrio toranzoniae	WP_060468829.1

Fig. 13 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
<i>Yersinia rohdei</i>	WP_032817534.1	<i>Vibrio cyclitrophicus</i>	WP_016798923.1
<i>Yersinia aldovae</i>	WP_049689167.1	<i>Vibrio rumoiensis</i>	WP_017024312.1
<i>Rouxiella chamberiensis</i>	WP_045048258.1	<i>Vibrio sinaloensis</i>	WP_039481766.1
<i>Yersinia enterocolitica</i>	WP_057648693.1	<i>Vibrio</i> sp. N418	WP_009384140.1
<i>Candidatus Hamiltonella defensa</i>	WP_016857191.1	<i>Marinobacterium rhizophilum</i>	WP_020679626.1
<i>Yersinia mollaretii</i>	WP_050536989.1	<i>Psychromonas hadalis</i>	WP_022942336.1
<i>Yersinia kristensenii</i>	WP_004391858.1	<i>Vibrio kanaloae</i>	WP_017055514.1
<i>Yersinia intermedia</i>	WP_005191489.1	<i>Marinobacterium litorale</i>	WP_027854294.1
<i>Serratia odorifera</i>	WP_004957855.1	<i>Vibrio</i> sp. ECSMB14106	WP_046224925.1
<i>Yersinia bercovieri</i>	WP_005271235.1	<i>Pseudomonas</i> sp. NBRC 111130	WP_054884750.1
<i>Serratia fonticola</i>	WP_059199031.1	<i>Gallibacterium genomsp. 2</i>	WP_039136020.1
<i>Yersinia pekkanenii</i>	WP_049613832.1	<i>Pseudomonas</i> sp. 2-92(2010)	WP_028618504.1
<i>Serratia marcescens</i>	WP_015962093.1	<i>Moritella</i> sp. PE36	WP_006030970.1
<i>Serratia rubidaea</i>	WP_054305351.1	<i>Vibrio mimicus</i>	WP_032467641.1
<i>Serratia proteamaculans</i>	WP_012147158.1	<i>Shewanella waksmanii</i>	WP_028772807.1
<i>Serratia ficaria</i>	WP_061799193.1	<i>Vibrio fluvialis</i>	WP_032081097.1
<i>Serratia liquefaciens</i>	WP_044553804.1	<i>Pseudomonas vranovensis</i>	WP_028942480.1
<i>Serratia</i> sp. S4	WP_017894211.1	<i>Idiomarina atlantica</i>	WP_034733921.1
<i>Serratia grimesii</i>	WP_037416107.1	<i>Gallibacterium genomsp. 1</i>	WP_039174494.1
<i>Serratia</i>	WP_020837172.1	<i>Shewanella frigidimarina</i>	WP_059745295.1
<i>Serratia plymuthica</i>	WP_062868878.1	<i>Pseudomonas putida</i>	WP_043209917.1
<i>Yersinia ruckeri</i>	WP_004719425.1	<i>Vibrio halotocoli</i>	WP_023405283.1
<i>Yersinia pseudotuberculosis</i>	WP_050117587.1	<i>Simiduia agarivorans</i>	WP_015047857.1
<i>Yersinia pestis</i>	WP_054104465.1	<i>Alteromonas australica</i>	WP_052806549.1
<i>Serratia</i> sp. YD25	WP_063918667.1	<i>Alteromonas marina</i>	WP_039222473.1
<i>Yersinia pseudotuberculosis</i> complex	WP_033848617.1	<i>Pseudomonas fluorescens</i>	WP_034101515.1
<i>Serratia symbiotica</i>	WP_061770918.1	<i>Pseudomonas</i> sp. FeS53a	WP_044401466.1
<i>Serratia</i> sp. FS14	WP_044030326.1	gamma proteobacterium IMCC1989	WP_009670102.1

Fig. 13 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Serratia sp. Leaf50	WP_055774138.1	Spiribacter salinus	WP_016352700.1
Enterobacteriaceae bacterium B14	WP_051014381.1	Gallibacterium anatis	WP_039166724.1
Serratia sp. M24T3	WP_009638599.1	Aggregatibacter actinomycetemcomitans	WP_005538626.1
Yersinia nurmii	WP_049598056.1	Cellvibrio sp. BR	WP_007638851.1
Tatumella saanichensis	WP_029686453.1	Aggregatibacter aphrophilus	WP_050694113.1
Photobacterium luminescens	WP_040154039.1	Idiomarina sediminum	WP_051207005.1
Xenorhabdus poinarii	WP_045959602.1	Shewanella sediminis	WP_012144760.1
Bartonella senegalensis	WP_019221445.1	Vibrio furnissii	WP_055466655.1
Xenorhabdus szentirmaii	WP_038235621.1	Vibrio ezurae	WP_021715061.1
Pectobacterium carotovorum	WP_039355229.1	Pseudomonas sp. TTU2014-105ASC	WP_058063592.1
Serratia sp. DD3	WP_023490517.1	Vibrio proteolyticus	WP_021707164.1
Chania multitudinisentens	WP_024913341.1	Balneatrix alpica	WP_051527455.1
Pectobacterium betavascularum	WP_039303019.1	Pseudomonas parafulva	WP_039582433.1
Pectobacterium atrosepticum	WP_011092244.1	Shewanella loihica	WP_011867537.1
Photobacterium heterorhabditis	WP_054478023.1	Vibrio vulnificus	WP_039541844.1
Pectobacterium wasabiae	WP_012822481.1	Nitrococcus mobilis	WP_040661924.1
Xenorhabdus	WP_047769935.1	Pseudomonas sp. 5	WP_045186199.1
Xenorhabdus nematophila	WP_038219455.1	Pseudomonas trivialis	WP_049710900.1
Bartonella henselae	WP_011181000.1	Pseudomonas stutzeri	WP_038663939.1
Bartonella koehlerae	WP_034459798.1	Pseudomonas tuomuerensis	WP_039606725.1
Tatumella morbirosei	WP_038023855.1	Pseudomonas rhodesiae	WP_040266714.1
Serratia sp. ATCC 39006	WP_021014322.1	Pseudomonas sp. ARP3	WP_047881785.1
Ewingella americana	WP_034793486.1	Alteromonas sp. ALT199	WP_025257082.1
Hafnia alvei	WP_043490453.1	Cellvibrio sp. pealriver	WP_049631176.1
Rahnella	WP_013577374.1	Psychromonas aquimarina	WP_028862328.1
Rahnella aquatilis	WP_047612327.1	Pseudomonas	WP_043314995.1

Fig. 13 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Serratia sp. Leaf51	WP_056776024.1	Marinobacter daepoensis	WP_029654624.1
Pectobacterium sp. SCC3193	WP_014698702.1	Sedimenticola selenatireducens	WP_037375012.1
Bartonella bacilliformis	WP_041849739.1	Pseudomonas sp. TKP	WP_024078144.1
Dickeya sp. DW 0440	WP_035339654.1	Pseudomonas corrugata	WP_024777876.1
Budvicia aquatica	WP_036017158.1	Pseudomonas sp. AAC	WP_043268085.1
Photorhabdus asymbiotica	WP_036770256.1	Colwellia psychrerythraea	WP_033093585.1
Brenneria sp. EniD312	WP_009114521.1	Shewanella sp. P1-14-1	WP_055024157.1
Xenorhabdus doucetiae	WP_045972447.1	Pseudomonas fluorescens group	WP_033897276.1
Proteus vulgaris	WP_036938822.1	Pseudomonas mediterranea	WP_047704174.1
Bartonella bovis	WP_010702680.1	Marinobacter subterrani	WP_048497131.1
Proteus mirabilis	WP_036971463.1	Pseudohongiella spirulinae	WP_058022208.1
Proteus hauseri	WP_023583078.1	Pseudomonas sp. URHB0015	WP_027616796.1
Bartonella birtlesii	WP_006590207.1	Pseudomonadaceae	WP_027588895.1
Bartonella quintana	WP_042995424.1	Marinobacter santoriniensis	WP_040886922.1
Bartonella vinsonii	WP_015399203.1	Vibrio metschnikovii	WP_040903602.1
Xenorhabdus sp. NBAII XenSa04	WP_047683929.1	Pseudomonas sp. NBRC 111123	WP_060483806.1
Xenorhabdus bovienii	WP_038187361.1	Pseudomonas sp. URMO17WK12:l8	WP_027917043.1
Bartonella sp. DB5-6	WP_007553455.1	Marinobacter sp. C1S70	WP_022993199.1
Bartonella taylorii	WP_004859565.1	Pseudomonas fuscovaginae	WP_054057810.1
Xenorhabdus khoisanae	WP_047963672.1	Pseudomonas sp. M1	WP_024128089.1
Xenorhabdus cabanillasii	WP_038260250.1	Pseudomonas poae	WP_015373328.1
Bartonella washoensis	WP_006924009.1	Marinobacter hydrocarbonoclasticus	WP_014422862.1
bacteria symbiont BFo2 of Frankliniella occidentalis	WP_048911280.1	Marinobacter sp. CP1	WP_053113189.1
Bartonella florencae	WP_019218918.1	Marinobacter similis	WP_052471995.1
Bartonella elizabethae	WP_005773162.1	Moritella marina	WP_019441181.1
Dickeya dadantii	WP_038924493.1	Vibrio sp. RC586	WP_001072884.1
Lonsdalea quercina	WP_026739591.1	Shewanella colwelliana	WP_028764686.1

Fig. 13 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Photorhabdus temperata	WP_046974225.1	Pseudomonas cremoricolorata	WP_038411439.1
Dickeya dianthicola	WP_024104487.1	Aestuariibacter salexigens	WP_051275567.1
Arsenophonus nasoniae	WP_034249744.1	Pseudomonas simiae	WP_047542440.1
Dickeya zeae	WP_016943166.1	Pseudomonas sp. SHC52	WP_041020540.1
Pragia fontium	WP_047782060.1	Saccharospirillum impatiens	WP_051208090.1
Bartonella melophagi	WP_007476822.1	Pseudomonas chloritidis mutans	WP_042927861.1
Dickeya	WP_038917764.1	Nitrincola sp. A-D6	WP_036522654.1
Leminorella grimontii	WP_027275775.1	Shewanella sp. cp20	WP_041509787.1
Bartonella alsatica	WP_005864859.1	gamma proteobacterium HTCC2207	WP_007231113.1
Dickeya sp. NCPPB 3274	WP_042858576.1	Pseudomonas sp. p21	WP_063912245.1
Bartonella queenslandensis	WP_039758997.1	Alteromonas	WP_032094739.1
Arsenophonus endosymbiont of Nilaparvata lugens	WP_032116478.1	Pseudomonas batumici	WP_040071885.1
Bartonella doshiae	WP_004855905.1	Pseudomonas sp. Ant30-3	WP_028620438.1
Bartonella schoenbuchensis	WP_010704040.1	Marinobacter sp. EVN1	WP_023009487.1
Providencia rettgeri	WP_004261323.1	Pseudomonas monteili	WP_060477249.1
Dickeya sp. 2B12	WP_033570629.1	Actinobacillus	WP_005625006.1
Dickeya solani	WP_022632063.1	Pseudomonas sp. URMO17WK12:l4	WP_027908969.1
Tatumella	WP_025900954.1	Pseudomonas sp. FGI182	WP_025341124.1
Morganella morganii	WP_024475151.1	Pseudomonas agarici	WP_017132350.1
Morganella	WP_004241531.1	Pseudomonas veronii	WP_017849993.1
Bartonella tribocorum	WP_038473768.1		
Dickeya chrysanthemi	WP_040002537.1		
Brenneria goodwinii	WP_048636333.1		
Dickeya paradisiaca	WP_015855063.1		
Candidatus Regiella insecticola	WP_006705673.1		
Dickeya sp. NCPPB 569	WP_042868420.1		
Bartonella grahamii	WP_034451706.1		

Fig. 13 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Moellerella wisconsensis	WP_053907569.1		
Bartonella rattaustraliani	WP_019222387.1		

Fig. 13 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Pseudomonas	WP_003114686.1	Bacillus sp. NH7I_1	WP_060697735.1
Pseudomonas aeruginosa	WP_023089494.1	Bacillus sp. WP8	WP_039180923.1
Pseudomonas sp. 2_1_26	WP_009316330.1	Bacillus sp. Aph1	WP_034271361.1
Microvirgula aerodenitrificans	WP_028498979.1	Azospirillum sp. B506	WP_049975975.1
Burkholderia contaminans	WP_039366334.1	Virgibacillus pantothenicus	WP_050350407.1
Burkholderia cepacia	WP_059525390.1	Bacillus sp. B-jedd	WP_048826224.1
Burkholderia cepacia complex	WP_027789658.1	Bacillus simplex	WP_061142094.1
Burkholderia cenocepacia	WP_043887199.1	Virgibacillus sp. SK37	WP_040955898.1
Burkholderia oklahomensis	WP_010108306.1	Bacillus thermotolerans	WP_039238772.1
Burkholderia	WP_048024784.1	unclassified Bacillaceae	WP_040037859.1
Burkholderia anthina	WP_059640804.1	Bacillus sp. Root920	WP_056766977.1
Burkholderia lata	WP_011354275.1	Anoxybacillus thermarum	WP_043966577.1
Burkholderia sp. MSh1	WP_031398726.1	Bacillus coahuilensis	WP_010174447.1
Burkholderia sp. MSh2	WP_034198724.1	Bacillus safensis	WP_044332225.1
Burkholderia sp. ABCPW 11	WP_059505050.1	Alkalibacillus haloalkaliphilus	WP_017187026.1
Burkholderia seminalis	WP_059556868.1	Bacillus sp. J33	WP_034263269.1
Burkholderia pseudomallei	WP_004551415.1	Viridibacillus arenosi	WP_038188166.1
Burkholderia thailandensis	WP_009900942.1	Bacillus sp. FJAT-14578	WP_028395275.1
Burkholderia glumae	WP_052498364.1	Oceanobacillus kimchii	WP_017797441.1
Burkholderia plantarii	WP_055139495.1	Bacillus decisifrondis	WP_053592881.1
Pseudomonas mandelii	WP_050482791.1	Virgibacillus halodenitrificans	WP_019379016.1
Pseudomonas fluorescens	WP_047337084.1	Gracilibacillus sp. Awa-1	WP_058306868.1
Nitrococcus mobilis	WP_005004375.1	Bacillus sp. MSP13	WP_039074850.1
Pseudomonas protegens	WP_041752315.1	Lysinibacillus macroides	WP_053996681.1
Pseudomonas sp. PH1b	WP_025129888.1	Bacillus sp. FJAT-27251	WP_053364401.1
Pseudomonas putida	WP_023535698.1	Lysinibacillus massiliensis	WP_036180684.1

Fig. 14

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Pseudomonas sp. ABAC61	WP_058436407.1	Lysinibacillus sp. FJAT-14745	WP_053485081.1
Pseudomonas veronii	WP_032804924.1	Sphaerobacter thermophilus	WP_052295394.1
Pseudomonas sp. ARP3	WP_053060097.1	Bacillus sp. SA2-6	WP_046525629.1
Pseudomonas sp. PAMC 25886	WP_010169497.1	Bacillus selenatarsenatis	WP_041968022.1
Pseudomonas sp. MRSN12121	WP_044463386.1	Gracilimonas tropica	WP_020401972.1
Pseudomonas rhodesiae	WP_040269528.1	Oceanobacillus oncorhynchi	WP_042530686.1
Pseudomonas sp. 2(2015)	WP_045198122.1	Bacillus muralis	WP_057915654.1
Pseudomonas sp. BRG-100	WP_032876543.1	Bacillus malacitensis	WP_059291772.1
Pseudomonas chlororaphis	WP_052712847.1	Anoxybacillus sp. KU2-6(11)	WP_035048665.1
Pseudomonas sp. CFII68	WP_018605339.1	Domibacillus enclensis	WP_052698560.1
Pseudomonas helleri	WP_048388690.1	Bacillus axarquiensis	WP_059352147.1
Pseudomonas sp. Root569	WP_056846015.1	Brevibacterium halotolerans	WP_059335649.1
Pseudomonas sp. FH1	WP_033901147.1	Lysinibacillus xylanilyticus	WP_049667404.1
Pseudomonas sp. 2-92(2010)	WP_050587840.1	Bacillus tequilensis	WP_024714703.1
Pseudomonas libanensis	WP_059396815.1	Bacillus sp. UNC322MFChir4.1	WP_035432514.1
Pseudomonas simiae	WP_047543762.1	Solibacillus	WP_008408138.1
Alcanivorax dieselolei	WP_014994844.1	Sporosarcina koreensis	WP_060206543.1
Pseudomonas thivervalensis	WP_053121146.1	Lysinibacillus sphaericus	WP_010860294.1
Pseudomonas synxantha	WP_057025332.1	Lysinibacillus sp. F5	WP_058845031.1
bacterium JKG1	WP_029214447.1	Paenisporosarcina sp. TG-14	WP_017380005.1
Gracilibacillus halophilus	WP_003467031.1	Bacillus licheniformis	WP_043925819.1
Pseudomonas syringae	WP_024668534.1	Lysinibacillus odysseyi	WP_036151007.1
bacterium mt3	WP_054949256.1	Anoxybacillus sp. BCO1	WP_042894993.1
Pseudomonas sp. ADP	WP_058489589.1	Viridibacillus arvi	WP_053416717.1

Fig. 14 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
<i>Pseudomonas syringae</i> group genomsp. 7	WP_055005986.1	<i>Geobacillus thermodenitrificans</i>	WP_029760552.1
<i>Pseudomonas syringae</i> group genomsp. 3	WP_057415224.1	<i>Geobacillus</i> sp. PA-3	WP_060476126.1
<i>Pseudomonas amygdali</i>	WP_005762842.1	<i>Geobacillus</i> sp. G11MC16	WP_008880976.1
<i>Azospirillum lipoferum</i>	WP_014188759.1	<i>Bacillus velezensis</i>	WP_029974105.1
<i>Bacillus aquimaris</i>	WP_052011500.1	<i>Halapricum salinum</i>	WP_049992575.1
<i>Pseudomonas syringae</i> group	WP_007245942.1	<i>Bacillus stratosphericus</i>	WP_039964166.1
<i>Pseudomonas caricapapayae</i>	WP_055009862.1	Bacillales	WP_014114896.1
<i>Bradyrhizobium</i>	WP_024580699.1	<i>Solibacillus silvestris</i>	WP_014823056.1
<i>Oscillochloris trichoides</i>	WP_006562625.1	<i>Bhargavaea cecembensis</i>	WP_008300106.1
<i>Bacillus enclensis</i>	WP_058298109.1	<i>Sporosarcina</i> sp. EUR3 2.2.2	WP_024534129.1
<i>Pseudomonas savastanoi</i>	WP_004665562.1	<i>Bacillus</i> sp.	WP_052586469.1
<i>Bacillus</i> sp. SG-1	WP_006836445.1	<i>Bacillus xiamenensis</i>	WP_008360695.1
<i>Pseudomonas avellanae</i>	WP_005617735.1	Bacilli bacterium VT-13-104	WP_047184596.1
<i>Microbulbifer variabilis</i>	WP_020415351.1	<i>Bacillus</i> sp. DW5-4	WP_034325145.1
<i>Pseudomonas fuscovaginae</i>	WP_054064572.1	<i>Bacillus altitudinis</i>	WP_047945217.1
<i>Bacillus vietnamensis</i>	WP_051758539.1	<i>Planomicrobium</i> sp. ES2	WP_052652109.1
<i>Bacillus</i> sp. LL01	WP_047970983.1	<i>Geobacillus subterraneus</i>	WP_063167279.1
<i>Caldalkalibacillus thermarum</i>	WP_007503034.1	<i>Geobacillus</i>	WP_042381875.1
<i>Bacillus marisflavi</i>	WP_048013478.1	<i>Oceanobacillus caeni</i>	WP_060668740.1
<i>Pseudomonas cichorii</i>	WP_025259793.1	<i>Lysinibacillus</i> sp. ZYM-1	WP_054612847.1
<i>Aeribacillus pallidus</i>	WP_063386559.1	<i>Lysinibacillus varians</i>	WP_025220363.1
<i>Bacillus azotoformans</i>	WP_035196603.1	<i>Brevibacterium frigoritolerans</i>	WP_063589832.1
<i>Desmospora</i> sp. 8437	WP_040387746.1	<i>Bacillus</i> sp. BSC154	WP_041906541.1
<i>Bacillus horikoshii</i>	WP_063559773.1	<i>Terribacillus aidingensis</i>	WP_038565035.1
<i>Halobacillus halophilus</i>	WP_014644096.1	<i>Alicyclobacillus pomorum</i>	WP_051375075.1
<i>Bacillus humi</i>	WP_057999505.1	<i>Gracilibacillus boracitolerans</i>	WP_035724544.1

Fig. 14 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Salimicrobium jeotgali	WP_008587369.1	Virgibacillus soli	WP_057982217.1
Jeotgalibacillus malaysiensis	WP_039810607.1	Bacillus sp. 37MA	WP_018394222.1
Geobacillus sp. Y4.1MC1	WP_013400205.1	Planomicrobium glaciei	WP_053167718.1
Pseudomonas agarici	WP_060783693.1	Bacillus cihuensis	WP_028392653.1
Bacillus sp. Leaf406	WP_056534732.1	Bacillus cereus	WP_016116829.1
Desulfovibrio desulfuricans	WP_041724102.1	Geobacillus sp. JS12	WP_063193197.1
Anaerobacillus macyae	WP_053216218.1	Kurthia massiliensis	WP_010288409.1
Pontibacillus halophilus	WP_026801400.1	Bacillus sp. Soil768D1	WP_057215430.1
Geobacillus toebii	WP_062755081.1	Bacillus sonorensis	WP_006636053.1
Bacillus sp. m3-13	WP_010195203.1	Bacillus sp. FJAT-20673	WP_063574832.1
Geobacillus thermoglucosidasius	WP_042384399.1	Lysinibacillus boronitolerans	WP_036078490.1
Pontibacillus marinus	WP_027447035.1	Bacillus sp. Leaf13	WP_056521250.1
Geobacillus sp. WCH70	WP_015864892.1	Bacillus sp. 72	WP_051927823.1
Thalassobacillus sp. TM-1	WP_062440761.1	Geobacillus sp. JF8	WP_020961008.1
Bacillus sp. CHD6a	WP_060666910.1	Bacillus butanolivorans	WP_053347927.1
Bacillaceae	WP_003248477.1	Geobacillus sp. C56-T3	WP_013144393.1
Bacillus sp. SA1-12	WP_046590138.1	Bacillus pseudomycoides	WP_006096312.1
Bacillus massiliogorillae	WP_042345107.1	Roseiflexus sp. RS-1	WP_011954829.1
Pontibacillus chungwhensis	WP_036782710.1	Bacillus sp. 95MFCvi2.1	WP_018782033.1
Thermogemmatispora carboxidivorans	WP_052888923.1	Bacillus cereus group	WP_040119032.1
Salinibacillus aidingensis	WP_044163325.1	Lysinibacillus fusiformis	WP_004225913.1
Bacillus sp. X1(2014)	WP_038536892.1	Bacillus mycoides	WP_041488594.1
Lentibacillus jeotgali	WP_010532310.1	Lysinibacillus sp. LK3	WP_048391047.1
Bacillus ginsengihumi	WP_035353906.1	Bacillus sp. Soil745	WP_057279191.1
Jeotgalibacillus soli Cunha et al. 2012	WP_052474929.1	Bacillus sp. FJAT-27916	WP_049669789.1
Bacillus shackletonii	WP_055738952.1	Thermomicrobium roseum	WP_012642614.1
Pontibacillus yanchengensis	WP_036821077.1	Geobacillus sp. CAMR5420	WP_033026053.1
Bacillus niacini	WP_034673537.1	Bacillus sp. 105MF	WP_018764645.1

Fig. 14 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Bacillus sp. J37	WP_026561814.1	Bacillus manliponensis	WP_034642812.1
Bacillus vireti	WP_024027849.1	Bacillus sp. FJAT-27245	WP_053367481.1
Bacillus cibi	WP_029566209.1	Lysinibacillus sp. BF-4	WP_036142602.1
Bacillus alveayuensis	WP_052659551.1	Lysinibacillus	WP_036119793.1
Bacillus indicus	WP_029278756.1	Opitutus terrae	WP_012376455.1
Bacillus bataviensis	WP_007086491.1	Domibacillus robiginosus	WP_050181303.1
Thalassobacillus devorans	WP_028783548.1	Bacillus aminovorans	WP_063975020.1
Chloroflexus aggregans	WP_012615533.1	Bacillus sp. 1NLA3E	WP_041580669.1
Bacillus fordii	WP_018707485.1	Sporosarcina newyorkensis	WP_009497990.1
Virgibacillus sp. SK-1	WP_053218805.1	Bacillus sp. GeD10	WP_006915660.1
Bacillus smithii	WP_048623884.1	Paenisporosarcina sp. TG20	WP_019414907.1
Halobacillus kuroshimensis	WP_027956472.1	Planococcus antarcticus	WP_006831222.1
Geobacillus caldxylosilyticus	WP_017434868.1	Bacillus sp. UNC437CL72CviS29	WP_026593876.1
Bacillus massilioanorexius	WP_019243994.1	Bacillus sp. 123MFChir2	WP_020061371.1
Geobacillus stearothermophilus	WP_043905856.1	Halobacterium sp. CBA1132	WP_058982752.1
Bacillus circulans	WP_061798785.1	Streptomyces sp. MBT76	WP_058042239.1
Ktedonobacter racemifer	WP_007913623.1	Bacillus sp. FJAT-13831	WP_017153674.1
Jeotgalibacillus alimentarius	WP_052474147.1	Bacillus gaemokensis	WP_033676253.1
Bacillus sp. FJAT-27445	WP_059171493.1	Bacilli	WP_000616738.1
Bacillus	WP_009795315.1	Sporolactobacillus laevolacticus	WP_023509936.1
Bacillus nealsonii	WP_016202883.1	Alicyclobacillus contaminans	WP_051321775.1
Sporosarcina globispora	WP_053434007.1	Bacillus cytotoxicus	WP_012095948.1
Oceanobacillus picturae	WP_036574619.1	Conexibacter woesei	WP_035127957.1
Gracilibacillus lacisalsi	WP_018934096.1	Halobacterium hubeiense	WP_059056695.1
Oceanobacillus sp. S5	WP_040979050.1	Bacillus sp. H1a	WP_025148828.1
Alicyclobacillus macrosporangiidus	WP_051662824.1	Bacillus thuringiensis	WP_023523256.1

Fig. 14 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Bacillus sp. UNC438CL73TsuS30	WP_026572089.1	Patulibacter americanus	WP_022928512.1
Bacillus sp. ZYK	WP_017756202.1	Bacillus sp. B14905	WP_043990721.1
Bacillus psychrosaccharolyticus	WP_051387396.1	Planococcus kocurii	WP_058385831.1
Ornithinibacillus contaminans	WP_047979667.1	Planococcus sp. CAU13	WP_033543886.1
Anoxybacillus tepidamans	WP_027410481.1	Sporosarcina ureae	WP_029055120.1
Oceanobacillus manasiensis	WP_042222742.1	Geobacillus icigianus	WP_033018318.1
Bacillus methanolicus	WP_004439139.1	Sporolactobacillus terrae	WP_051577709.1
Halobacillus sp. BBL2006	WP_035548017.1	Tuberibacillus calidus	WP_027724185.1
Oceanobacillus massiliensis	WP_010647294.1	Geobacillus vulcani	WP_031407519.1
Bacillus flexus	WP_061784908.1	Bacillus coagulans	WP_035188982.1
Chloroflexus sp. Y-396-1	WP_028459931.1	Bacillus sp. LK2	WP_048374368.1
Ornithinibacillus californiensis	WP_047983652.1	Kurthia huakuui	WP_029499533.1
Halobacillus	WP_035511377.1	Halalkalibacillus halophilus	WP_027964378.1
Bacillus encimensis	WP_063383670.1	Domibacillus tundrae	WP_052728327.1
Bacillus sp. JS	WP_041521409.1	bacterium SIT5	WP_062354774.1
Anoxybacillus flavithermus	WP_006320635.1	Planococcus sp. PAMC 21323	WP_038703416.1
Bacillus badius	WP_063441135.1	Geobacillus kaustophilus	WP_044736356.1
Bacillus rubiinfantis	WP_042354695.1	Exiguobacterium	WP_035412678.1
Desulfitibacter alkalitolerans	WP_051534294.1	Streptomyces sp. NRRL S-813	WP_051844821.1
Bacillus sp. RP1137	WP_029319903.1	Kurthia sp. JC8E	WP_010304177.1
Balneola vulgaris	WP_018127710.1	Roseiflexus castenholzii	WP_012122664.1
Bacillus aryabhatai	WP_045295385.1	Bacillus anthracis	WP_000616727.1
Bacillus niameyensis	WP_062109560.1	Bacillus sp. OxB-1	WP_041070670.1
Bacillus sp. FJAT-25547	WP_057761139.1	Halolamina rubra	WP_049981866.1
Bacillus acidiproducens	WP_051086254.1	Bacillus sp. FJAT-27997	WP_049682973.1
Bacillus thermoamylovorans	WP_034768563.1	Salinarchaeum sp. Harcht-Bsk1	WP_020447809.1

Fig. 14 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Bacillus sp. URHB0009	WP_027322137.1	Bacillus sp. GZT	WP_062923621.1
Halobacillus sp. BAB-2008	WP_008637585.1	Sporosarcina sp. ZBG7A	WP_039044539.1
Bacillus sp. A053	WP_040082038.1	Bacillus sp. UMTAT18	WP_046199487.1
Bacillus sp. UNC41MFS5	WP_026563219.1	Halobacteriaceae archaeon SB9	WP_058581597.1
Bacillus sp. Soil531	WP_057274095.1	Halopiger djelfamassiliensis	WP_049923288.1
Bacillus siamensis	WP_016938462.1	Alicyclobacillus herbarius	WP_051343768.1
Bacillus farraginis	WP_058005647.1	Exiguobacterium indicum	WP_058704972.1
Bacillus subtilis	WP_014477756.1	Natronococcus amylolyticus	WP_005555286.1
Bacillus subterraneus	WP_044395766.1	Lysinibacillus manganicus	WP_036190256.1
Bacillus gobiensis	WP_053603894.1	Exiguobacterium sp. BMC-KP	WP_053452202.1
Paucisalibacillus sp. EB02	WP_042143024.1	Halorubrum sp. BV1	WP_049982315.1
Bacillus amyloliquefaciens	WP_047476771.1	Haloarcula vallismortis	WP_004517947.1
Bacillus sp. SIT10	WP_050616161.1	Halostagnicola sp. A56	WP_050051196.1
Bacillus sp. Root147	WP_057233096.1	Haloarcula japonica	WP_004592792.1
Bacillus koreensis	WP_053400748.1	Streptomyces sp. ATexAB-D23	WP_018554385.1
Bacillus sp. 278922_107	WP_028411869.1	Alicyclobacillus ferrooxydans	WP_054969223.1
Pontibacillus litoralis	WP_052127216.1	Solirubrobacter sp. URHD0082	WP_051323957.1
Lysinibacillus contaminans	WP_053582362.1	Halorubrum hochstenium	WP_008580740.1
Bacillus sp. JFL15	WP_049627228.1	Haloferax mucosum	WP_008317500.1
Anoxybacillus kamchatkensis	WP_019417289.1	Haloarcula amylolytica	WP_008309243.1
Bacillus sp. FJAT-25496	WP_057772306.1	Exiguobacterium oxidotolerans	WP_029332750.1
Bacillus glycinifermentans	WP_048355295.1	Haloarcula	WP_050038036.1
Bacillus sp. FF4	WP_042460803.1	Exiguobacterium acetylicum	WP_050677396.1
Bacillus sp. SDLI1	WP_060964475.1	Haloarcula sp. CBA1127	WP_058995943.1

Fig. 14 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Bacillus atrophaeus	WP_010789607.1	Halopenitus sp. DYS4	WP_058366711.1
Oceanobacillus iheyensis	WP_011066719.1	Halorubrum tebenquichense	WP_006630090.1
Bacillus megaterium	WP_013085283.1	Haladaptatus paucihalophilus	WP_007978613.1
Bacillus sp. Root239	WP_057244921.1	Solirubrobacter soli	WP_028064223.1
Chloroflexus sp. MS-G	WP_031458749.1	Oscillatoriales cyanobacterium MTP1	WP_058883121.1
Anoxybacillus geothermalis	WP_044745973.1	Haloarcula marismortui	WP_011223264.1
Lysinibacillus sinduriensis	WP_036197348.1	Sporosarcina sp. D27	WP_025786354.1
Anoxybacillus	WP_009361645.1	Exiguobacterium sp. Leaf187	WP_055966688.1
Bacillus endophyticus	WP_019391067.1	Haloarcula hispanica	WP_014040312.1
Bacillus cecembensis	WP_057988977.1	Halosimplex carlsbadense	WP_006884453.1
Bacillus vallismortis	WP_061571926.1	Exiguobacterium sp. ZWU0009	WP_047395159.1
Bacillus sp. G1(2015b)	WP_058838176.1	Halorhabdus utahensis	WP_015788577.1
Bacillus sp. NSP9.1	WP_026588395.1	Planococcus halocryophilus	WP_008497280.1
Bacillus sp. FJAT-27231	WP_049663918.1	Verrucomicrobia bacterium SCGC AAA168-F10	WP_038126170.1
Paucisalibacillus globulus	WP_026906974.1	Exiguobacterium sp. OS-77	WP_035398779.1
Ureibacillus thermosphaericus	WP_016837030.1	Halalkalicoccus jeotgali	WP_008417532.1
Virgibacillus sp. Vm-5	WP_038243188.1	Planococcus donghaensis	WP_008428950.1
Bacillus subtilis group	WP_013390633.1	Halorubrum halophilum	WP_050032715.1
Chloroflexus	WP_012259490.1	Exiguobacterium sibiricum	WP_012369533.1
Bacillus sp. EGD-AK10	WP_021480367.1	Psychrobacillus sp. FJAT-21963	WP_056832867.1
Bacillus kribbensis	WP_035322454.1	Bacillus sp. FJAT- 25509	WP_056473274.1
Bacillus sp. REN51N	WP_040056994.1	Halorubrum arcis	WP_007992958.1
Virgibacillus sp. CM-4	WP_021288888.1	Haloarcula sp. SL3	WP_053968146.1
Paenisporosarcina sp. HGH0030	WP_016426536.1	Haloferax mediterranei	WP_004056921.1

Fig. 14 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Bacillus sp. EB01	WP_043934015.1	Haloarcula argentinensis	WP_005534453.1
Bacillus panaciterrae	WP_028399695.1	Bacillus sp. FJAT- 22090	WP_053588542.1
Bacillus sp. 171095_106	WP_028410453.1	Halolamina pelagica	WP_054583766.1
Ornithinibacillus scapharcae	WP_010097123.1	Geobacillus sp. 12AMOR1	WP_047818914.1
Bacillus nakamurai	WP_061520043.1	Microcystis aeruginosa	WP_004163819.1
Jeotgalibacillus campisalis	WP_041060570.1	Halorubrum sp. T3	WP_017343453.1
Bacillus mojavenensis	WP_029441396.1	Exiguobacterium sp. NG55	WP_035387788.1
Anoxybacillus suryakundensis	WP_055440175.1	Halorubrum	WP_004598556.1
Bacillus sp. FF3	WP_042474379.1	Exiguobacterium marinum	WP_026826747.1
Bacillus sp. TH008	WP_046130688.1	Halorubrum aidingense	WP_007999743.1
Bacillus sp. AM 13(2015)	WP_059375200.1		
Bacillus pumilus	WP_044142126.1		
Bacillus sp. CMAA 1185	WP_046160765.1		
Bacillus sp. FJAT-18017	WP_053598618.1		
Bacillus firmus	WP_048011096.1		

Fig. 14 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Pseudomonas	WP_003106950.1	Brevundimonas diminuta	WP_003165630.1
Pseudomonas aeruginosa	WP_023131684.1	Erythrobacter sp. NAP1	WP_007164103.1
Pseudomonas aeruginosa group	WP_009877106.1	Erwinia persicina	WP_062742761.1
Microvirgula aerodenitrificans	WP_028498980.1	Leisingera sp. ANG-M1	WP_039168607.1
Burkholderia cepacia complex	WP_006484772.1	Shinella	WP_050742571.1
Burkholderia anthina	WP_059584467.1	Sphingomonas sp. KC8	WP_010125831.1
Burkholderia cenocepacia	WP_060211908.1	Pseudomonas taeanensis	WP_025166189.1
Burkholderia	WP_011547168.1	Caulobacter sp. OV484	WP_047404747.1
Burkholderia pseudomallei	WP_004549567.1	Pseudomonas sp. NBRC 111135	WP_054910491.1
Burkholderia lata	WP_011354276.1	Pseudomonas sp. Leaf15	WP_056858237.1
Burkholderia contaminans	WP_039366337.1	Ruegeria pomeroyi	WP_011047295.1
Burkholderia cepacia	WP_059525391.1	Candidatus Filomicrobium marinum	WP_046475955.1
Burkholderia thailandensis	WP_009897990.1	Ensifer sp. Br816	WP_018234899.1
Burkholderia oklahomensis	WP_010108308.1	Caulobacter	WP_056050097.1
Pseudomonas fluorescens	WP_016979925.1	Rhizobium sp. Leaf341	WP_062692519.1
Pseudomonas sp. 2-92(2010)	WP_028616070.1	Rhizobium	WP_062470505.1
Pseudomonas azotoformans	WP_061436824.1	Ensifer sojae	WP_034859346.1
Pseudomonas sp. FH1	WP_033901146.1	Ruegeria mobilis	WP_005628022.1
Pseudomonas thivervalensis	WP_053121148.1	Sedimentitalea nanhaiensis	WP_027263471.1
Pseudomonas synxantha	WP_057025331.1	Porphyrobacter cryptus	WP_027441928.1
Pseudomonas sp. CHM02	WP_025854584.1	Porphyrobacter sp. AAP60	WP_054117689.1
Pseudomonas mandelii	WP_033056094.1	Ewingella americana	WP_034789690.1
Pseudomonas fluorescens group	WP_043050251.1	Chromobacterium vaccinii	WP_046155509.1

Fig. 15

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Alcanivorax dieselolei	WP_014994845.1	Ruminococcus albus	WP_043538032.1
Nitrococcus mobilis	WP_005004372.1	Variovorax paradoxus	WP_042576834.1
Pseudomonas sp. 2(2015)	WP_045198124.1	Parvularcula bermudensis	WP_013300785.1
Pseudomonas sp. PH1b	WP_025129887.1	Rubellimicrobium thermophilum	WP_021097656.1
Pseudomonas sp. PAMC 25886	WP_010169498.1	Dechloromonas aromatica	WP_011289796.1
Pseudomonas putida	WP_023535597.1	Variovorax boronicumulans	WP_062477800.1
Pseudomonas helleri	WP_048388689.1	Sphingomonas sp. MM-1	WP_015457563.1
Pseudomonas sp. Os17	WP_060839803.1	Phaeobacter inhibens	WP_061049393.1
Pseudomonas sp. ABAC61	WP_058436409.1	Variovorax sp. Root473	WP_056580651.1
Pseudomonas protegens	WP_041752761.1	Silicibacter sp. TrichCH4B	WP_009177420.1
Pseudomonas sp. St29	WP_060843902.1	Phaeospirillum molischianum	WP_040566020.1
Vibrio	WP_029223919.1	Pseudomonas sp. PAMC 26793	WP_017477817.1
Zymobacter palmae	WP_027706238.1	Pseudomonas simiae	WP_047543395.1
Vibrio splendidus	WP_017095663.1	Sinorhizobium arboris	WP_027999396.1
Vibrio nigripulchritudo	WP_022598767.1	Caulobacter sp. AP07	WP_007669693.1
Vibrio vulnificus	WP_011081756.1	Porphyrobacter mercurialis	WP_039096260.1
Pseudomonas sp. ADP	WP_058489588.1	Oceanicola sp. S124	WP_010137633.1
Pseudomonas fuscovaginae	WP_054061580.1	Pseudogulbenkiania ferrooxidans	WP_021478802.1
Desulfovibrio desulfuricans	WP_012624972.1	Erythrobacter gangjinensis	WP_047005672.1
Pseudoalteromonas luteoviolacea	WP_063364351.1	Klebsiella oxytoca	WP_004131235.1
Pseudomonas entomophila	WP_011533710.1	Labrenzia aggregata	WP_006935802.1
Pseudomonas sp. KG01	WP_048731723.1	Caulobacter sp. K31	WP_012287297.1
Pseudomonas cichorii	WP_025259794.1	Erythrobacter longus	WP_051698842.1
Pseudomonas rhizosphaerae	WP_043188773.1	Pseudomonas endophytica	WP_055101787.1
Azospirillum lipoferum	WP_014188758.1	Providencia burhodogranariea	WP_008911142.1
Pseudomonas fulva	WP_042556657.1	Caulobacter sp. CCH5-E12	WP_062099535.1
Brenneria sp. EniD312	WP_009114600.1	Ruegeria atlantica	WP_058276921.1

Fig. 15 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Lonsdalea quercina	WP_026739756.1	Brevundimonas aveniformis	WP_029086159.1
Azospirillum sp. B506	WP_042693433.1	Phaeobacter gallaeciensis	WP_014879244.1
Pseudomonas monteilii	WP_060393461.1	Erythrobacter atlanticus	WP_048885888.1
Pseudomonas syringae	WP_017708113.1	Ensifer sp. USDA 6670	WP_029959387.1
Pseudomonas syringae group	WP_005762840.1	Hellea balneolensis	WP_026940740.1
Pseudomonas amygdali	WP_005738477.1	Sinorhizobium meliloti	WP_010968657.1
Pseudomonas savastanoi	WP_019741432.1	Sinorhizobium sp. CCBAU 05631	WP_037425973.1
Pseudomonas syringae group genomsp. 3	WP_054091058.1	Ruegeria sp. CECT 5091	WP_058284168.1
Microbulbifer variabilis	WP_020415350.1	Ruegeria sp. ANG-R	WP_039538859.1
Tolypothrix campylonemoides	WP_041041287.1	Caulobacter vibrioides	WP_035017242.1
Nodosilinea nodulosa	WP_017298636.1	Rhodobacteraceae bacterium KLH11	WP_008755607.1
Leptolyngbya sp. NIES-2104	WP_059001045.1	Caulobacter segnis	WP_013078409.1
Agrobacterium tumefaciens	WP_035225456.1	Klebsiella	WP_004871378.1
Calothrix sp. PCC 7103	WP_019493169.1	Yersinia	WP_050084882.1
Cellvibrio sp. OA-2007	WP_062064078.1	Pseudomonas libanensis	WP_057012799.1
Scytonema tolypothrichoides	WP_048868701.1	Rhodobacter sp. SW2	WP_008031693.1
Pantoea sp. RIT-PI-b	WP_049853162.1	Labrenzia sp. DG1229	WP_035899651.1
Stanieria cyanosphaera	WP_015195188.1	Ruegeria halocynthiae	WP_037310730.1
Pseudomonas chlororaphis	WP_009049359.1	Pantoea	WP_045815650.1
Runella limosa	WP_028525382.1	Mannheimia varigena	WP_025216860.1
Pedobacter sp. V48	WP_048904841.1	Enterobacteriaceae	WP_049084995.1
Pedobacter sp. PACM 27299	WP_062550966.1	Pseudomonas fragi	WP_016779407.1
Pantoea rodasii	WP_039334894.1	Caulobacter sp. Root655	WP_056724929.1
Crinalium epipsammum	WP_015201559.1	Acidovorax delafieldii	WP_060977469.1
Brenneria goodwinii	WP_048636391.1	Caulobacter henricii	WP_062145109.1
Pseudomonas frederiksbergensis	WP_039591223.1	Sinorhizobium fredii	WP_037432167.1

Fig. 15 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Snodgrassella alvi	WP_037473754.1	Rhizobium giardinii	WP_018324075.1
Pedobacter sp. R20-19	WP_029287121.1	Porphyrobacter sp. HL-46	WP_036800189.1
Pseudomonas agarici	WP_017133639.1	Erythrobacter marinus	WP_047093931.1
Bradyrhizobium	WP_024580698.1	Altererythrobacter marenensis	WP_047806000.1
Hassallia byssoidea	WP_039743314.1	Kordiimonas gwangyangensis	WP_020399032.1
Type-E symbiont of Plautia stali	WP_058962445.1	Pseudomonas sp. 313	WP_017639561.1
Pseudomonas kilonensis	WP_046062292.1	Yersinia intermedia	WP_005183468.1
Alcanivorax hongdengensis	WP_008930023.1	Ensifer	WP_025425846.1
Oscillatoria nigro-viridis	WP_015179369.1	Ruegeria conchae	WP_010442824.1
Microcoleus vaginatus	WP_006635331.1	Paenibacillus zanthoxyli	WP_025690613.1
Pseudomonas sp. GM60	WP_008035544.1	Labrenzia sp. CP4	WP_062491890.1
Pedobacter sp. Hv1	WP_055131283.1	Labrenzia	WP_031269713.1
Serratia plymuthica	WP_006316853.1	Novosphingobium barchaimii	WP_058735897.1
Serratia	WP_037395580.1	Xenophilus azovorans	WP_038209862.1
Pseudomonas sp. GM80	WP_008085601.1	Dysgonomonas capnocytophagoides	WP_026625288.1
Serratia sp. C-1	WP_062789569.1	Caulobacter sp. Root656	WP_057183767.1
Pseudomonas sp. 45MFCol3.1	WP_019648555.1	Thermopetrobacter sp. TC1	WP_038034810.1
Pseudomonas sp. GM48	WP_007992678.1	Thalassospira lucentensis	WP_022734083.1
Pseudomonas sp. GM18	WP_007937000.1	Arthrobacter sp. H14	WP_026535687.1
Synechocystis sp. PCC 7509	WP_028954191.1	Brevundimonas abyssalis	WP_021697031.1
Pseudomonas sp. QTF5	WP_030131028.1	Parvularcula oceani	WP_031555700.1
bacterium UASB14	WP_045505933.1	Blastomonas sp. AAP53	WP_017670274.1
Pseudomonas sp. GM79	WP_008074041.1	Labrenzia alexandrii	WP_055672130.1
Pseudomonas sp. CF161	WP_043230378.1	Pseudomonas deceptionensis	WP_048359292.1

Fig. 15 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Alcanivorax	WP_063521418.1	Type-D symbiont of <i>Plautia stali</i>	WP_058970253.1
<i>Pseudomonas</i> sp. Root329	WP_056741929.1	<i>Erythrobacter</i>	WP_050600626.1
<i>Gilliamella apicola</i>	WP_034883414.1	<i>Paludibacterium yongneupense</i>	WP_051229471.1
<i>Pseudomonas</i> sp. GM49	WP_007993749.1	<i>Caulobacter</i> sp. Root1472	WP_056761772.1
<i>Aquabacterium parvum</i>	WP_058086343.1	<i>Ensifer adhaerens</i>	WP_053248748.1
<i>Acidithiobacillus thiooxidans</i>	WP_024893728.1	<i>Sphingomonas</i> sp. 35-24ZXX	WP_033923881.1
<i>Pseudomonas</i> sp. GM41(2012)	WP_008154661.1	<i>Achromobacter</i> sp. RTa	WP_043546625.1
<i>Pseudomonas brassicacearum</i>	WP_025213967.1	<i>Pseudorhodobacter wandonensis</i>	WP_050522986.1
<i>Leptolyngbya boryana</i>	WP_017288016.1	<i>Aphanizomenon flos-aquae</i>	WP_039203516.1
<i>Pseudomonas</i> sp. 11/12A	WP_047527806.1	<i>Sphingomonas endophytica</i>	WP_058756259.1
<i>Pseudomonas</i> sp. GM102	WP_007905729.1	<i>Devosia</i> sp. A16	WP_055048936.1
<i>Candidatus Solibacter usitatus</i>	WP_011686428.1	<i>Rhizobium</i> sp. Root483D2	WP_060636130.1
<i>Myxosarcina</i> sp. Gl1	WP_036484294.1	<i>Ensifer</i> sp. WSM1721	WP_026622024.1
<i>Alcanivorax</i> sp. 19-m-6	WP_035233016.1	<i>Enterobacter cancerogenus</i>	WP_034824240.1
<i>Pseudomonas</i> sp. GM50	WP_008008459.1	<i>Cystobacter fuscus</i>	WP_002621816.1
<i>Acaryochloris</i> sp. CCMEE 5410	WP_010467794.1	<i>Sphingomonas</i> sp. Y57	WP_047167465.1
<i>Pseudomonas</i> sp. G5(2012)	WP_020800719.1	<i>Sinorhizobium</i> sp. PC2	WP_046119906.1
<i>Acaryochloris marina</i>	WP_012162817.1	<i>Sphingomonas jaspsi</i>	WP_037503921.1
<i>Pseudoalteromonas</i>	WP_042149186.1	<i>Thalassospira</i> sp. MCCC 1A01148	WP_062953912.1
<i>Pantoea</i> sp. A4	WP_026042421.1	<i>Ensifer</i> sp. TW10	WP_026613300.1
<i>Alcanivorax jadensis</i>	WP_035250216.1	<i>Fulvimarina pelagi</i>	WP_040488894.1
Bacteria	WP_009562838.1	<i>Rhizobium</i> sp. CF097	WP_037119901.1
<i>Pseudomonas</i> sp. RIT-PI-q	WP_059404196.1	<i>Pseudarthrobacter chlorophenolicus</i>	WP_015937239.1
<i>Serratia grimesii</i>	WP_037426347.1	<i>Devosia</i>	WP_055878182.1
<i>Scytonema millei</i>	WP_039714778.1	<i>Coccidioides immitis</i> RS	XP_001248209.2

Fig. 15 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Calothrix sp. 336/3	WP_035158367.1	Blastomonas sp. AAP25	WP_054134089.1
Chroococcidiopsis thermalis	WP_015152152.1	Sphingomonas sp. Ag1	WP_046409195.1
beta proteobacterium L13	WP_017510054.1	Oceanicaulis sp. HL-87	WP_036514352.1
Alcanivorax sp. HI0083	WP_063518558.1	Penicillium digitatum Pd1	XP_014534104.1
Pseudopedobacter saltans	WP_013633880.1	Maritalea myrionectae	WP_027835180.1
Pseudomonas gingeri	WP_017124151.1	Sinorhizobium sp. GL28	WP_058323580.1
Vogesella sp. EB	WP_047967847.1	Erythrobacter sp. SD-21	WP_006832002.1
Clostridiales bacterium VE202-28	WP_025484850.1	Sinorhizobium/Ensifer group	WP_057248140.1
Cellvibrio sp. BR	WP_007642494.1	Afifella pfennigii	WP_051631353.1
Hungatella hathewayi	WP_039892287.1	Croceicoccus naphthovorans	WP_047820461.1
Tatumella sp. UCD-D_suzukii	WP_025903659.1	Arthrobacter nitrophenolicus	WP_035752355.1
Tatumella ptyseos	WP_029990876.1	Sphingomonas	WP_056359867.1
Niabella aurantiaca	WP_018629826.1	Thalassospira	WP_037991166.1
Lachnoclostridium	WP_024296203.1	Anabaena cylindrica	WP_015215725.1
Draconibacterium sediminis	WP_045033031.1	Corynebacterium halotolerans	WP_048742456.1
Desulfovibrio frigidus	WP_031479260.1	Ensifer sp. ZNC0028	WP_043613157.1
Acinetobacter brisouii	WP_004902992.1	Brevundimonas sp. Leaf363	WP_056103760.1
Pseudorhodobacter aquimaris	WP_050528496.1	Serratia fonticola	WP_024485202.1
Rubrobacter aplysinae	WP_047866623.1	Altererythrobacter epoxidivorans	WP_061923692.1
Acinetobacter sp. ANC 3789	WP_004749213.1	alpha proteobacterium JLT2015	WP_038280972.1
Tatumella morbirosei	WP_038017563.1	Arthrobacter sp. Leaf137	WP_056079511.1
Altererythrobacter troitsensis	WP_057882776.1	Sphingomonas sp. Root710	WP_056378476.1
Dinoroseobacter shibae	WP_012177956.1	Sphingomonas wittichii	WP_037526704.1
Loktanella vestfoldensis	WP_026352351.1	Corynebacterium freneyi	WP_052054332.1

Fig. 15 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Sphingopyxis	WP_003044487.1	Sphingomonas sp. SRS2	WP_046195859.1
Acinetobacter	WP_005173592.1	Porphyrobacter sp. AAP82	WP_017664013.1
Sediminimonas qiaohouensis	WP_026756407.1	Agaricus bisporus var. bisporus H97	XP_006455303.1
[Clostridium clariflavum	WP_014254971.1	Agaricus bisporus var. burnettii JB137-S8	XP_007330894.1
uncultured Sulfuricurvum sp. RIFRC-1	WP_015653945.1	Erythrobacter vulgaris	WP_040963667.1
Lysinibacillus macroides	WP_053993407.1	Sphingomonas sp. Leaf231	WP_056631646.1
Dysgonomonas sp. HGC4	WP_050708384.1	Cucumibacter marinus	WP_029039849.1
Leisingera sp. ANG-M7	WP_039183947.1	alpha proteobacterium Mf 1.05b.01	WP_029638849.1
Sphingopyxis sp. A083	WP_058811316.1	Brevundimonas sp. Leaf280	WP_055755221.1
Clostridium sp. DL-VIII	WP_009170495.1	Sinorhizobium	WP_011974380.1
Lactococcus raffinolactis	WP_061774007.1	Arthrobacter enclensis	WP_058267449.1
Acinetobacter lwoffii	WP_004280839.1	Nocardia otitidiscaviarum	WP_039817058.1
Leisingera	WP_019294976.1	Citromicrobium	WP_010237878.1
Pantoea anthophila	WP_046102129.1	Rhizobium sp. OK665	WP_037105052.1
Pseudorhodobacter antarcticus	WP_050519835.1	Rhizobium sp. Root482	WP_056330571.1
Kaistia granuli	WP_018185327.1	Litoreibacter arenae	WP_021100138.1
Bradyrhizobium elkanii	WP_051003151.1	Bradyrhizobium tropiciagri	WP_050420370.1
Aquabacterium sp. NJ1	WP_052162578.1	Pseudomonas psychrotolerans	WP_058768510.1
Halothiobacillus neapolitanus	WP_012824911.1	Erythrobacter litoralis	WP_011414053.1
Dysgonomonas gadei	WP_006801167.1	Oceanicaulis alexandrii	WP_022700009.1
Type-F symbiont of Plautia stali	WP_058957646.1	Phaeobacter	WP_040172007.1
Roseibium sp. TrichSKD4	WP_009758811.1		
Leisingera sp. ANG-M6	WP_039194316.1	Labrenzia alba	WP_055675296.1

Fig. 15 (continued)

Microorganism	Genbank Accession	Microorganism	Genbank Accession
Bradyrhizobium viridifuturi	WP_050629432.1	Pseudomonas stutzeri	WP_045164245.1
Acinetobacter gerneri	WP_004870294.1	Brevundimonas naejangsanensis	WP_024353237.1
Acinetobacter sp. HR7	WP_034585714.1	Rhizobium sp. Leaf371	WP_062595152.1
Kaistia adipata	WP_029075359.1	Pseudomonas nitroreducens	WP_024762244.1
Pantoea sp. Sc1	WP_009089455.1	Sphingopyxis alaskensis	WP_041383077.1
Sphingopyxis terrae	WP_062902254.1	Phaeospirillum fulvum	WP_051185933.1
Bradyrhizobium embrapense	WP_050400635.1	Raoultella ornithinolytica	WP_041145659.1
Raoultella terrigena	WP_045858268.1	Ruegeria sp. TM1040	WP_011539677.1
Sinorhizobium americanum	WP_037378402.1	Shinella sp. DD12	WP_023515461.1
Leisingera sp. ANG-Vp	WP_039134607.1		
Erythrobacter sp. JL475	WP_034954745.1		

Fig. 15 (continued)