

**Table S2.** General information of predicted T2PKs and their  $\beta$ -ketosynthase pair  $KS_{\alpha}/KS_{\beta}$  protein references

Name of bacteria strain	$KS_{\alpha}$ accession	$KS_{\beta}$ accession
Streptococcus intermedius B196	WP_000883312.1	WP_000213426.1
Streptomyces sp. WM6391	WP_003973654.1	WP_003973655.1
Streptomyces sp. WM6391	WP_166680923.1	WP_003973890.1
Streptomyces viridochromogenes Tue57	WP_003997817.1	WP_003997816.1
Streptomyces griseoflavus Tu4000	WP_004922256.1	WP_004922259.1
Streptomyces mobaraensis	WP_004948216.1	WP_004948214.1
Streptomyces viridosporus T7A	WP_004991632.1	WP_004991631.1
Amycolatopsis azurea	WP_005158456.1	WP_005158459.1
Streptomyces pristinaespiralis strain=PR11	WP_005321657.1	WP_005321660.1
Saccharomonospora azurea	WP_005438761.1	WP_005438754.1
Saccharomonospora azurea SZMC	WP_005448206.1	WP_005448204.1
Saccharomonospora cyanea	WP_005456341.1	WP_005456342.1
Saccharomonospora glauca	WP_005464301.1	WP_005464302.1
Streptomyces sp. SID5476	WP_020665472.1	WP_005483388.1
Streptomyces rubiginosus	WP_006130548.1	WP_006130547.1
Streptomyces rubiginosus	WP_006134517.1	WP_006134518.1
Streptomyces griseoaurantiacus M045	WP_006140449.1	WP_006140448.1
Saccharomonospora xinjiangensis	WP_006240788.1	WP_006240787.1
Streptomyces tsukubensis strain=L20	WP_040914538.1	WP_006346907.1
Streptomyces reticuliscabiei	WP_006374278.1	WP_006374275.1
Streptomyces reticuliscabiei	WP_006380469.1	WP_006380468.1
Frankia sp. EUN1f	WP_006540198.1	WP_006540199.1
Streptomyces auratus	WP_006602370.1	WP_006602369.1
Streptomyces sioyaensis	WP_129247017.1	WP_006606507.1
Amycolatopsis decaplanina	WP_007031983.1	WP_007031984.1
Streptomyces sp. C	WP_007262351.1	WP_007262352.1
Streptomyces sp. C	WP_007268985.1	WP_007268986.1
Streptomyces sp. C	WP_007269013.1	WP_007269014.1
Streptomyces sp. SID5470	WP_007385254.1	WP_007385253.1
Streptomyces sp. SID5477	WP_007388628.1	WP_007388627.1
Streptomyces sp. SID5477	WP_007444672.1	WP_007444671.1
Micromonospora lupini	WP_007460639.1	WP_007460637.1
Micromonospora lupini	WP_007462140.1	WP_007462138.1
Streptomyces zinciresistens	WP_007492831.1	WP_007492829.1
Streptomyces zinciresistens	WP_007495833.1	WP_007495831.1
Ktedonobacter racemifer	WP_007917935.1	WP_007917933.1
Ktedonobacter racemifer	WP_007919164.1	WP_007919165.1
Streptomyces sp. SID8499	WP_164393459.1	WP_009189294.1
Streptomyces ipomoeae strain=88-35	WP_141581685.1	WP_009309194.1
Streptomyces ipomoeae strain=88-35	WP_009311420.1	WP_009311455.1
Streptomyces himastatinicus	WP_009714123.1	WP_009714124.1
Streptomyces himastatinicus	WP_009714489.1	WP_009714488.1
Frankia sp. QA3	WP_009739944.1	WP_009739945.1
Streptomyces chartreusis NRRL	WP_029180778.1	WP_010034349.1
Streptomyces chartreusis NRRL	WP_010048567.1	WP_010048568.1
Streptomyces sp. DfronAA-171	WP_010266693.1	WP_010266688.1
Streptomyces acidiscabies 84-104	WP_269149518.1	WP_010353750.1
Streptomyces acidiscabies strain=ST105	WP_010359669.1	WP_010359670.1
Streptomyces acidiscabies strain=FL01	WP_010359933.1	WP_010359931.1
Streptomyces sp. CAI-21	WP_175509159.1	WP_010644658.1
Streptomyces sp. SID5469	WP_037650150.1	WP_010983813.1
Streptomyces sp. SID5469	WP_010984270.1	WP_010984271.1
Streptomyces griseofuscus strain=NRRL	WP_037659220.1	WP_011113149.1
Photorhabdus sp. RW14-46	WP_011148295.1	WP_011148294.1
Thermobifida fusca	WP_061783561.1	WP_011291666.1
Frankia sp. CgIS1	WP_011438468.1	WP_011438467.1
Salinispora tropica CNT250	WP_012013727.1	WP_012013726.1
Catenulispora acidiphila	WP_012785306.1	WP_012785307.1
Thermomonospora curvata	WP_012853103.1	WP_012853102.1
Geodermatophilus obscurus	WP_243697708.1	WP_012946392.1
Streptomyces sp. LBUM	WP_037723186.1	WP_013002011.1
Cellulomonas flavigena	WP_013118542.1	WP_013118543.1
Nocardioopsis dassonvillei	WP_013155269.1	WP_013155268.1
Micromonospora sp. ANZ297	WP_013286647.1	WP_013286646.1
Micromonospora aurantiaca	WP_013287166.1	WP_013287165.1
Frankia inefficax	WP_157734836.1	WP_013422505.1
Micromonospora sp. L5	WP_013476209.1	WP_013476210.1
Micromonospora aurantiaca strain=S3	WP_013476563.1	WP_013476564.1
Micromonospora maris	WP_013733392.1	WP_013733391.1
Verrucosipora sp. FIM060022	WP_013734501.1	WP_013734500.1
Candidatus Frankia datiscaae	WP_050803296.1	WP_013872022.1
Candidatus Frankia datiscaae	WP_013873662.1	WP_013873663.1

Candidatus Frankia datisciae	WP_013874012.1	WP_013874013.1
Streptomyces sp. DpondAA-F4	WP_014044193.1	WP_014044192.1
Streptomyces sp. DpondAA-F4	WP_014048969.1	WP_014048970.1
Streptomyces sp. DpondAA-F4	WP_014050066.1	WP_014050067.1
Kitasatospora setae strain=NRRL	WP_014140290.1	WP_014140291.1
Streptomyces sp. SID7815	WP_014157321.1	WP_014157320.1
Streptomyces microflavus strain=CG	WP_014158007.1	WP_014158008.1
Streptomyces milbemycinicus	WP_014175362.1	WP_014175363.1
Streptomyces corchorusii	WP_059265785.1	WP_014669811.1
Streptomyces hygrosopicus subsp.	WP_041665124.1	WP_014672285.1
Modestobacter marinus strain=BC501	WP_014738228.1	WP_014738227.1
Nocardia brasiliensis strain=HUJEG-1	WP_141691707.1	WP_014982308.1
Nocardia brasiliensis strain=HUJEG-1	WP_014983838.1	WP_014983839.1
Streptomyces venezuelae ATCC	WP_071892241.1	WP_015037162.1
Streptomyces venezuelae ATCC	WP_015037977.1	WP_015037976.1
Saccharothrix espanaensis	WP_015102857.1	WP_015102858.1
Gloeocapsa sp. PCC	WP_015191118.1	WP_015191117.1
Streptomyces sp. NRRL	WP_015576416.1	WP_015576417.1
Actinoplanes sp. N902-109	WP_041832244.1	WP_015621176.1
Streptomyces davaonensis	WP_041819136.1	WP_015657243.1
Streptomyces davaonensis	WP_015657288.1	WP_015657287.1
Saccharomonospora viridis	WP_015787643.1	WP_015787644.1
Catenulipora acidiphila	WP_015792180.1	WP_015792181.1
Streptomyces sp. HGB0020	WP_016433755.1	WP_016433754.1
Streptomyces sp. HGB0020	WP_016435280.1	WP_016435279.1
Delftia lacustris	WP_016452923.1	WP_016446729.1
Streptomyces albus strain=DSM	WP_016468318.1	WP_016468317.1
Streptomyces albulus strain=NBRC	WP_016573122.1	WP_016573123.1
Streptomyces albulus strain=NBRC	WP_016573740.1	WP_016573739.1
Actinoalloteichus spitiensis	WP_016697498.1	WP_016697497.1
Streptomyces xiaopingdaonensis	WP_016905307.1	WP_016905308.1
Streptomyces xiaopingdaonensis	WP_237720196.1	WP_016909140.1
Streptomyces sp. SS	WP_017237282.1	WP_017237281.1
Streptomyces sp. SS	WP_017237473.1	WP_017237474.1
Nocardiopsis halophila	WP_017537041.1	WP_017537040.1
Nocardiopsis prasina	WP_017542867.1	WP_017542866.1
Nocardiopsis halotolerans	WP_017571012.1	WP_017571013.1
Nocardiopsis valliformis	WP_017579217.1	WP_017579218.1
Nocardiopsis ganjiahuensis	WP_026119444.1	WP_017588245.1
Nocardiopsis ganjiahuensis	WP_017588783.1	WP_017588782.1
Nocardiopsis alkaliphila	WP_017604194.1	WP_017604193.1
Actinopolyspora halophila	WP_211210319.1	WP_017973231.1
Streptomyces sp. SID8375	WP_018091670.1	WP_018091671.1
Streptomyces sp. SID4923	WP_018102924.1	WP_018102925.1
Streptomyces sp. SID4923	WP_018106313.1	WP_018106312.1
Salinispora vitiensis strain=CNT-148	WP_026184399.1	WP_018215379.1
Salinispora vitiensis strain=CNT-148	WP_018215680.1	WP_018215679.1
Salinispora pacifica CNR114	WP_018219508.1	WP_018219509.1
Salinispora mooreana strain=CNT-150	WP_026189949.1	WP_018255417.1
Salinispora mooreana strain=CNT-150	WP_018255698.1	WP_018255699.1
Streptomyces sp. SID8356	WP_202438644.1	WP_018488940.1
Frankia discariae	WP_018505689.1	WP_018505690.1
Streptomyces sp. SID5594	WP_018511392.1	WP_018511393.1
Streptomyces sp. SID8373	WP_018524507.1	WP_018524506.1
Streptomyces sp. SID8354	WP_018540028.1	WP_018540029.1
Streptomyces sp. SID8354	WP_018540899.1	WP_018540900.1
Streptomyces sp. LaPpAH-108	WP_078496022.1	WP_018547664.1
Streptomyces sp. LaPpAH-108	WP_018548404.1	WP_018548403.1
Streptomyces sp. SID4913	WP_018550720.1	WP_018550721.1
Streptomyces sp. SID4913	WP_202453302.1	WP_018554452.1
Streptomyces sp. BoleA5	WP_018556702.1	WP_018556703.1
Streptomyces sp. SID8377	WP_018563448.1	WP_018563447.1
Streptomyces sp. Tu	WP_037895618.1	WP_018567017.1
Salinispora arenicola strain=NBRC	WP_012182822.1	WP_018584209.1
Salinispora arenicola CNX891	WP_012182822.1	WP_018587215.1
Frankia elaeagni	WP_195905320.1	WP_018638250.1
Actinokineospora enzanensis	WP_018681693.1	WP_018681694.1
Actinokineospora enzanensis	WP_018681842.1	WP_018681841.1
Salinispora pacifica DSM	WP_018730474.1	WP_018730473.1
Salinispora pacifica DSM	WP_018735379.1	WP_018733389.1
Micromonospora sp. CNB394	WP_018784081.1	WP_018784082.1
Micromonospora sp. CNB394	WP_018788098.1	WP_018788099.1
Streptomyces sp. ICN441	WP_017948993.1	WP_018891018.1
Streptomyces prunicolor	WP_019061799.1	WP_019061798.1
Streptomyces hokutonensis	WP_019070470.1	WP_019070471.1
Streptomyces sp. TOR3209	WP_019326887.1	WP_019326888.1

Streptomyces sp. RT42	WP_029394634.1	WP_019330943.1
Streptomyces qinglanensis strain=SCSIO	WP_027759556.1	WP_019358450.1
Streptomyces sp. McG7	WP_026243822.1	WP_019524866.1
Streptomyces sp. SID8376	WP_019526893.1	WP_019526894.1
Streptomyces sulphureus	WP_019544135.1	WP_019544136.1
Streptomyces sulphureus	WP_019544762.1	WP_019544761.1
Streptomyces sulphureus	WP_245600938.1	WP_019549458.1
Nocardiopsis sp. CNS-639	WP_013155269.1	WP_019607826.1
Saccharomonospora saliphila	WP_019819353.1	WP_019819354.1
Saccharomonospora saliphila	WP_028662082.1	WP_019819615.1
Salinispora oceanensis strain=CNT-138	WP_162562124.1	WP_019869946.1
Salinispora oceanensis strain=CNT-029	WP_018730474.1	WP_019872374.1
Streptomyces purpureus	WP_028798083.1	WP_019890097.1
Streptomyces purpureus strain=JCM	WP_019891050.1	WP_019891051.1
Streptomyces sp. SID8381	WP_019982644.1	WP_019982643.1
Streptomyces canus 299MFCChir4.1	WP_028807426.1	WP_020115977.1
Streptomyces canus 299MFCChir4.1	WP_020119316.1	WP_020119317.1
Streptomyces sp. 303MFCol5.2	WP_028806148.1	WP_020125752.1
Streptomyces sp. 303MFCol5.2	WP_020130969.1	WP_020130970.1
Streptomyces sp. 351MFTsu5.1	WP_028809082.1	WP_020134379.1
Scissionella marina	WP_020497318.1	WP_020497317.1
Embleya scabrispora	WP_026218898.1	WP_020553752.1
Amycolatopsis balhimycina DSM	WP_026468181.1	WP_020639073.1
Amycolatopsis balhimycina DSM	WP_043791969.1	WP_020639559.1
Amycolatopsis nigrescens	WP_026361231.1	WP_020672329.1
Streptomyces rapamycinicus	WP_020867594.1	WP_020867595.1
Streptomyces collinus	WP_020939956.1	WP_020939957.1
Streptomyces collinus	WP_043475893.1	WP_020940810.1
Photorhabdus temperata	WP_051769661.1	WP_021325341.1
Propionibacterium acidifaciens	WP_021796846.1	WP_021796833.1
Streptomyces sp. PVA	WP_037787509.1	WP_023420526.1
Streptomyces roseochromogenus	WP_031225564.1	WP_023549569.1
Streptomyces exfoliatus DSM	WP_024756990.1	WP_024756989.1
Saccharomonospora piscinae strain=CNQ490	WP_024873794.1	WP_024873795.1
Nocardia nova SH22a	WP_025347408.1	WP_025347407.1
Kutzneria albida	WP_030111238.1	WP_025361007.1
Salinispora cortesiana	WP_025619232.1	WP_025619233.1
Nocardiopsis halotolerans	WP_017573716.1	WP_026123013.1
Nocardiopsis alba DSM	WP_017533710.1	WP_026124851.1
Streptomyces sp. CcalMP-8W	WP_026237417.1	WP_026237418.1
Streptomyces sp. SID8379	WP_026246029.1	WP_026246028.1
Actinokineospora enzanensis	WP_156893358.1	WP_026316506.1
Actinomadura atramentaria	WP_019635010.1	WP_026341945.1
Actinomadura rifamycini	WP_034517042.1	WP_026401552.1
Actinoalloteichus cyanogriseus strain=NRRL	WP_030105118.1	WP_026419127.1
Salinispora fenicalii	WP_027659908.1	WP_027659907.1
Salinispora fenicalii	WP_018720155.1	WP_027661146.1
Amycolatopsis thermoflava N1165	WP_027929273.1	WP_027929274.1
Salinispora pacifica CNR114	WP_026185194.1	WP_028193703.1
Streptomyces sp. 196	WP_202438644.1	WP_028419497.1
Streptomyces sp. DpondAA-D4	WP_028441963.1	WP_028441964.1
Nocardia sp. CNY236	WP_231390274.1	WP_028476866.1
Streptomyces sp. 142MFCol3.1	WP_028798843.1	WP_028798842.1
Streptomyces sp. 351MFTsu5.1	WP_020141375.1	WP_028810254.1
Streptomyces flavidovirens	WP_028810382.1	WP_028810381.1
Pseudonocardia spinosipora	WP_051342882.1	WP_028936629.1
Streptomyces acidiscabies strain=ST105	WP_223786235.1	WP_029184073.1
Streptomyces leeuwenhoekii	WP_029387171.1	WP_029387170.1
Nocardia brasiliensis IFM	WP_029892440.1	WP_029892441.1
Nocardia brasiliensis IFM	WP_148311041.1	WP_029901114.1
Streptomyces monomycini	WP_030019029.1	WP_030019028.1
Streptomyces sp. TN58	WP_030028304.1	WP_030028306.1
Streptomyces resistomycificus	WP_030044559.1	WP_030044558.1
Streptomyces pyridomyceticus strain=NRRL	WP_030256587.1	WP_030057822.1
Streptomyces baarnensis strain=NRRL	WP_030075921.1	WP_030075923.1
Streptomyces decoyicus	WP_053209086.1	WP_030083348.1
Streptomyces baarnensis strain=NRRL	WP_030087338.1	WP_030087340.1
Streptomyces californicus strain=FDAARGOS	WP_030119114.1	WP_030119115.1
Streptomyces californicus strain=FDAARGOS	WP_030119114.1	WP_030120248.1
Streptomyces flavovirens strain=NRRL	WP_030635159.1	WP_030123299.1
Streptomyces sp. NRRL	WP_030164869.1	WP_030164872.1
Streptomyces violaceorubidus	WP_030181358.1	WP_030181360.1
Streptomyces violaceorubidus	WP_030190096.1	WP_030190093.1
Streptomyces californicus strain=FDAARGOS	WP_030193709.1	WP_030193706.1
Streptomyces sp. NRRL	WP_030204351.1	WP_030204354.1
Streptomyces sp. NRRL	WP_030205685.1	WP_030205687.1

Streptomyces bikiniensis strain=NRRL	WP_030213844.1	WP_030213841.1
Streptomyces sp. NRRL	WP_030223160.1	WP_030223164.1
Streptomyces lavendulae subsp.	WP_030234407.1	WP_030234403.1
Streptomyces sp. NRRL	WP_030239734.1	WP_030239736.1
Streptomyces lavendulae subsp.	WP_030242182.1	WP_030242183.1
Streptomyces sp. NRRL	WP_030251317.1	WP_030251321.1
Streptacidiphilus jeojiense	WP_030253203.1	WP_030253202.1
Streptomyces sp. NRRL	WP_030265083.1	WP_030265080.1
Streptomyces violens	WP_030265810.1	WP_030265812.1
Kitasatospora psammotica	WP_078867236.1	WP_030282574.1
Streptomyces catenulae	WP_030282614.1	WP_030282615.1
Streptomyces catenulae	WP_030283701.1	WP_030283699.1
Kitasatospora psammotica	WP_030287692.1	WP_030287694.1
Streptomyces katrae strain=NRRL	WP_030302853.1	WP_030302851.1
Streptomyces sp. NRRL	WP_030314742.1	WP_030314744.1
Streptomyces sp. NRRL	WP_030319876.1	WP_030319877.1
Streptomyces flavochromogenes	WP_030324542.1	WP_030324544.1
Micromonospora parva	WP_030329369.1	WP_030329368.1
Streptomyces sp. NRRL	WP_030329569.1	WP_030329565.1
Micromonospora parva	WP_030332977.1	WP_030332978.1
Streptomyces sp. NRRL	WP_030340082.1	WP_030340080.1
Streptomyces sp. NRRL	WP_030340971.1	WP_030340969.1
Streptomyces sp. NRRL	WP_030342513.1	WP_030342511.1
Streptomyces scopuliridis RB72	WP_030349269.1	WP_030349268.1
Streptomyces roseovorticillatus strain=NRRL	WP_030369961.1	WP_030369962.1
Streptomyces rimosus subsp.	WP_032920569.1	WP_030372735.1
Streptomyces rimosus subsp.	WP_030373438.1	WP_030373437.1
Streptomyces sp. NRRL	WP_030381146.1	WP_030381145.1
Streptomyces sp. 3211.3	WP_030384549.1	WP_030384550.1
Kitasatospora purpeofusca	WP_030396292.1	WP_030396293.1
Kitasatospora purpeofusca	WP_030396589.1	WP_030396588.1
Kitasatospora purpeofusca	WP_051757018.1	WP_030398157.1
Streptomyces sp. NRRL	WP_030402551.1	WP_030402550.1
Streptomyces ardesiacus	WP_030402764.1	WP_030402765.1
Streptomyces sp. NRRL	WP_030409394.1	WP_030409395.1
Streptomyces sp. 9-7	WP_201802604.1	WP_030411157.1
Streptomyces sp. NRRL	WP_030420249.1	WP_030420248.1
Streptomyces sp. TP-A0875	WP_030420980.1	WP_030420981.1
Kitasatospora niigatensis	WP_030460038.1	WP_030460037.1
Kitasatospora sp. NRRL	WP_030461215.1	WP_030461214.1
Kitasatospora sp. NRRL	WP_030461724.1	WP_030461723.1
Lentzea aerocolonigenes	WP_030465055.1	WP_030465054.1
Lentzea albidocapillata	WP_030474579.1	WP_030474580.1
Micromonospora chokoriensis strain=NRRL	WP_084597712.1	WP_030486489.1
Micromonospora chokoriensis strain=NRRL	WP_030492080.1	WP_030492079.1
Micromonospora purpureochromogenes strain=NRRL	WP_030504433.1	WP_030504434.1
Nocardia sp. NRRL	WP_030515839.1	WP_030515840.1
Streptomyces albus subsp.	WP_030545955.1	WP_030545962.1
Streptomyces sp. KY75	WP_030562204.1	WP_030562206.1
Streptomyces anulatus strain=NRRL	WP_030587047.1	WP_030587044.1
Streptomyces anulatus strain=NRRL	WP_030590906.1	WP_030590908.1
Streptomyces griseoflavus strain=NRRL	WP_033022242.1	WP_030596607.1
Streptomyces fulvoviolaceus	WP_030600318.1	WP_030600316.1
Streptomyces achromogenes subsp.	WP_030616787.1	WP_030616784.1
Streptomyces achromogenes subsp.	WP_030619581.1	WP_030619584.1
Streptomyces achromogenes subsp.	WP_030620814.1	WP_030620811.1
Streptomyces albus subsp.	WP_030087338.1	WP_030628044.1
Streptomyces rimosus subsp.	WP_033014516.1	WP_030629358.1
Streptomyces griseolus strain=NRRL	WP_030630720.1	WP_030630722.1
Streptomyces rimosus subsp.	WP_032920569.1	WP_030641571.1
Streptomyces antibioticus strain=NRRL	WP_030649970.1	WP_030649972.1
Streptomyces sp. WAC05950	WP_030650395.1	WP_030650392.1
Streptomyces cinnamomensis	WP_199822245.1	WP_030654459.1
Streptomyces sp. NRRL	WP_030656652.1	WP_030656654.1
Streptomyces rimosus subsp.	WP_032917032.1	WP_030663942.1
Streptomyces cellulosa	WP_199923619.1	WP_030666352.1
Streptomyces sp. NRRL	WP_030673520.1	WP_030673522.1
Streptomyces cellulosa	WP_030678580.1	WP_030678583.1
Streptomyces cellulosa	WP_030683246.1	WP_030683248.1
Streptomyces globisporus subsp.	WP_030690529.1	WP_030690530.1
Streptomyces sp. NRRL	WP_030718891.1	WP_030718888.1
Streptomyces pluricolorscens	WP_229823766.1	WP_030720922.1
Streptomyces sp. NRRL	WP_030723401.1	WP_030723403.1
Streptomyces sp. NRRL	WP_030725721.1	WP_030725718.1
Streptomyces sp. NRRL	WP_030735445.1	WP_030735443.1
Streptomyces sp. NRRL	WP_030743825.1	WP_030743823.1

Streptomyces sp. NRRL	WP_030758655.1	WP_030758657.1
Streptomyces sp. NRRL	WP_030759912.1	WP_030759915.1
Streptomyces sp. NRRL	WP_030765726.1	WP_030765723.1
Streptomyces sp. NRRL	WP_030766484.1	WP_030766485.1
Streptomyces sp. DSM	WP_030783113.1	WP_030783116.1
Streptomyces sp. DSM	WP_030792818.1	WP_030792824.1
Streptomyces sp. NRRL	WP_030804488.1	WP_030804491.1
Streptomyces sp. NRRL	WP_030811870.1	WP_030811868.1
Streptomyces sp. NRRL	WP_030818022.1	WP_030818020.1
Streptomyces sp. XY152	WP_030818962.1	WP_030818960.1
Streptomyces sp. NRRL	WP_030821313.1	WP_030821309.1
Streptomyces sp. XY152	WP_030829985.1	WP_030829982.1
Streptomyces hygrosopicus subsp.	WP_030832485.1	WP_030832487.1
Streptomyces sp. NRRL	WP_030847760.1	WP_030847763.1
Streptomyces sp. NRRL	WP_030848316.1	WP_030848314.1
Streptomyces sp. NRRL	WP_030862888.1	WP_030862891.1
Streptomyces sp. NRRL	WP_030870430.1	WP_030870428.1
Streptomyces sp. NRRL	WP_030635159.1	WP_030877068.1
Streptomyces varsoviensis strain=NRRL	WP_030878087.1	WP_030878084.1
Streptomyces varsoviensis strain=NRRL	WP_030885550.1	WP_030885551.1
Streptomyces sp. XY66	WP_030818022.1	WP_030895697.1
Streptomyces virginiae	WP_030650395.1	WP_030897745.1
Streptomyces sp. NRRL	WP_030928994.1	WP_030928991.1
Streptomyces sp. NRRL	WP_030931343.1	WP_030931340.1
Streptomyces sp. NRRL	WP_030949619.1	WP_030949618.1
Streptomyces sp. NRRL	WP_030965475.1	WP_030965473.1
Streptomyces sp. PAN	WP_093746084.1	WP_030967838.1
Streptomyces sp. Osf17	WP_029394634.1	WP_030970827.1
Streptomyces sp. NRRL	WP_030975367.1	WP_030975369.1
Streptomyces sp. NRRL	WP_030983599.1	WP_030983597.1
Streptomyces sp. MC1	WP_030656652.1	WP_030986201.1
Streptomyces sp. NRRL	WP_030649970.1	WP_030988305.1
Streptomyces sp. NRRL	WP_030997655.1	WP_030997654.1
Streptomyces sp. NRRL	WP_019326887.1	WP_031016278.1
Streptomyces sp. NRRL	WP_031019662.1	WP_031019663.1
Streptomyces albus strain=CAS922	WP_164439430.1	WP_031027301.1
Streptomyces sp. VN1	WP_031039540.1	WP_031039542.1
Streptomyces sp. NRRL	WP_031042487.1	WP_031042484.1
Streptomyces sp. NRRL	WP_031043269.1	WP_031043271.1
Streptomyces sp. NRRL	WP_031044165.1	WP_031044161.1
Streptomyces pseudovenezuelae	WP_031059940.1	WP_031059938.1
Streptomyces sp. NRRL	WP_006134517.1	WP_031061038.1
Streptomyces sp. NRRL	WP_031065891.1	WP_031065894.1
Streptomyces ochraceiscleroticus	WP_031067204.1	WP_031067203.1
Streptomyces sp. NRRL	WP_031072975.1	WP_031072972.1
Streptomyces sp. NRRL	WP_031082067.1	WP_031082064.1
Streptomyces sp. NRRL	WP_031086835.1	WP_031086832.1
Streptomyces sp. NRRL	WP_031087132.1	WP_031087131.1
Streptomyces sp. NRRL	WP_031095948.1	WP_031095950.1
Streptomyces sp. MC1	WP_231407449.1	WP_031099715.1
Streptomyces sp. NRRL	WP_031104667.1	WP_031104668.1
Streptomyces sp. NRRL	WP_199808622.1	WP_031110852.1
Streptomyces sp. 2R	WP_031121791.1	WP_031121790.1
Streptomyces erythrochromogenes	WP_031157532.1	WP_031157534.1
Streptomyces durhamensis	WP_031169544.1	WP_031169546.1
Streptosporangium roseum strain=NRRL	WP_031172340.1	WP_031172338.1
Streptomyces durhamensis	WP_031173143.1	WP_031173141.1
Streptomyces seoulensis	WP_031184013.1	WP_031184014.1
Streptomyces ardesiacus	WP_031082067.1	WP_031184969.1
Streptomyces rimosus subsp.	WP_032914058.1	WP_031187263.1
Streptomyces bicolor strain=NRRL	WP_031485741.1	WP_031485739.1
Streptomyces bicolor strain=NRRL	WP_031488003.1	WP_031488004.1
Streptomyces megasporus	WP_031510405.1	WP_031510406.1
Streptomyces sp. NRRL	WP_031519573.1	WP_031519570.1
Streptomyces sp. HCCB10043	WP_006126304.1	WP_032770950.1
Streptomyces sp. ms115	WP_257134660.1	WP_032788923.1
Streptomyces viridochromogenes strain=NRRL	WP_033202498.1	WP_033202497.1
Streptomyces viridochromogenes strain=NRRL	WP_033205685.1	WP_033205682.1
Kitasatospora phosalacinea	WP_033213217.1	WP_033213216.1
Kitasatospora phosalacinea	WP_033219823.1	WP_033219822.1
Streptomyces virginiae strain=NRRL	WP_033225798.1	WP_033225797.1
Streptomyces albidoflavus strain=NRRL	WP_033239866.1	WP_033239865.1
Kitasatospora phosalacinea strain=NRRL	WP_033254140.1	WP_033254141.1
Kitasatospora phosalacinea strain=NRRL	WP_033255040.1	WP_033255039.1
Streptomyces atroolivaceus	WP_033304909.1	WP_033304910.1
Streptomyces iakyrus	WP_033313353.1	WP_033313354.1

<i>Streptomyces yerevanensis</i>	WP_033324412.1	WP_033324411.1
<i>Streptomyces yerevanensis</i>	WP_033324682.1	WP_033324681.1
<i>Dactylosporangium aurantiacum</i>	WP_033357105.1	WP_033357104.1
<i>Dactylosporangium aurantiacum</i>	WP_033358197.1	WP_033358198.1
<i>Kibdelosporangium aridum</i>	WP_084433585.1	WP_033387955.1
<i>Saccharothrix syringae</i>	WP_033434847.1	WP_033434846.1
<i>Kitasatospora</i> sp. MBT63	WP_033817610.1	WP_033817609.1
<i>Streptomyces</i> sp. G11C	WP_215221381.1	WP_033952009.1
<i>Actinospica robiniae</i>	WP_034260572.1	WP_034260574.1
<i>Amycolatopsis lurida</i>	WP_034310251.1	WP_034310253.1
<i>Actinomadura oligospora</i>	WP_026416406.1	WP_034489261.1
<i>Actinokineospora spheciospongiae</i>	WP_035279746.1	WP_035279749.1
<i>Azospirillum brasilense</i> strain=BR11019	WP_174442884.1	WP_035680613.1
<i>Frankia</i> sp. Allo2	WP_035731836.1	WP_035731839.1
<i>Kitasatospora azatica</i>	WP_035847285.1	WP_035847284.1
<i>Kitasatospora cheerisanensis</i>	WP_035869826.1	WP_035869829.1
<i>Modestobacter caceresii</i>	WP_036333923.1	WP_036333922.1
<i>Nocardia violaceofusca</i> NBRC	WP_036508177.1	WP_036508180.1
<i>Paenibacillus</i> sp. FSL	WP_051493803.1	WP_036697312.1
<i>Paenibacillus</i> sp. FSL	WP_235191802.1	WP_036723281.1
<i>Photorhabdus akhurstii</i> strain=DSM	WP_052105790.1	WP_036779564.1
<i>Photorhabdus stackebrandtii</i>	WP_239002557.1	WP_036844644.1
<i>Kibdelosporangium aridum</i> strain=A82846	WP_037268019.1	WP_037268020.1
<i>Kibdelosporangium aridum</i> strain=A82846	WP_037274676.1	WP_037274678.1
<i>Saccharomonospora viridis</i> strain=ATCC	WP_037308953.1	WP_037308956.1
<i>Amycolatopsis</i> sp. WAC	WP_052121280.1	WP_037347704.1
<i>Streptomyces aureus</i>	WP_037617932.1	WP_037617930.1
<i>Streptomyces aureus</i>	WP_037625473.1	WP_037625475.1
<i>Streptomyces aureus</i>	WP_037625488.1	WP_037625490.1
<i>Streptomyces griseorubens</i>	WP_033277091.1	WP_037638153.1
<i>Streptomyces bicolor</i> strain=NRRL	WP_031485366.1	WP_037641255.1
<i>Streptomyces griseorubens</i>	WP_033277712.1	WP_037643484.1
<i>Streptomyces griseofuscus</i>	WP_037653387.1	WP_037653386.1
<i>Streptomyces griseus</i> subsp.	WP_037671855.1	WP_037671854.1
<i>Streptomyces griseus</i> subsp.	WP_037679600.1	WP_037679602.1
<i>Streptomyces scabiei</i> strain=NCPPB	WP_037690153.1	WP_037690150.1
<i>Streptomyces scabiei</i> strain=NCPPB	WP_199924042.1	WP_037700064.1
<i>Streptomyces harbinensis</i>	WP_019432351.1	WP_037755474.1
<i>Streptomyces</i> sp. FXJ7.023	WP_031039540.1	WP_037760056.1
<i>Streptomyces</i> sp. SID8354	WP_018542709.1	WP_037813717.1
<i>Streptomyces</i> sp. NRRL	WP_030984774.1	WP_037839204.1
<i>Streptomyces</i> sp. NRRL	WP_037857064.1	WP_037857060.1
<i>Streptomyces</i> sp. NRRL	WP_031013741.1	WP_037881000.1
<i>Streptomyces</i> sp. NRRL	WP_030205618.1	WP_037890172.1
<i>Streptomyces</i> sp. PCS3-D2	WP_037922230.1	WP_037922231.1
<i>Streptomyces toyocaensis</i>	WP_037938360.1	WP_037938359.1
<i>Streptomyces</i> sp. PRh5	WP_037962532.1	WP_037962529.1
<i>Streptomyces albulus</i> strain=NK660	WP_016573122.1	WP_038523119.1
<i>Salinispora arenicola</i> CNS744	WP_038842796.1	WP_038842793.1
<i>Paenibacillus</i> sp. IHB	WP_047013851.1	WP_039301929.1
<i>Streptomyces</i> sp. 769	WP_039638401.1	WP_039638402.1
<i>Streptomyces</i> sp. MUSC	WP_039654977.1	WP_039654976.1
<i>Nocardia cerradoensis</i>	WP_039778997.1	WP_039778998.1
<i>Nocardia araoensis</i>	WP_039800143.1	WP_039800144.1
<i>Nocardia otitidiscaviarum</i> strain=NCTC1934	WP_039814768.1	WP_039814770.1
<i>Streptomyces</i> sp. 769	WP_040108248.1	WP_040108251.1
<i>Amycolatopsis nigrescens</i>	WP_020667139.1	WP_040405555.1
<i>Amycolatopsis nigrescens</i>	WP_020673770.1	WP_040406252.1
<i>Ktedonobacter racemifer</i>	WP_007907420.1	WP_040442429.1
<i>Nocardia vinacea</i>	WP_040692652.1	WP_040692654.1
<i>Nocardia takedensis</i>	WP_040713784.1	WP_040713786.1
<i>Nocardia veterana</i> strain=DSM	WP_040724439.1	WP_040724441.1
<i>Nocardia tenerifensis</i>	WP_246003098.1	WP_040741519.1
<i>Nocardia transvalensis</i>	WP_040753305.1	WP_040753306.1
<i>Nocardia pneumoniae</i>	WP_040781394.1	WP_040781396.1
<i>Nocardia paucivorans</i>	WP_040792242.1	WP_040792241.1
<i>Nocardia higoensis</i>	WP_040797408.1	WP_040797407.1
<i>Nocardia concava</i>	WP_040803422.1	WP_040803420.1
<i>Nocardia exalbida</i>	WP_040872019.1	WP_040872018.1
<i>Streptomyces vietnamensis</i>	WP_041131687.1	WP_041131688.1
<i>Streptomyces vietnamensis</i>	WP_041132762.1	WP_041132763.1
<i>Streptomyces</i> sp. AcH	WP_041993320.1	WP_041993322.1
<i>Streptomyces lydicamycinicus</i>	WP_042152338.1	WP_042152341.1
<i>Streptomyces lydicamycinicus</i>	WP_042157789.1	WP_042158824.1
<i>Streptomyces</i> sp. NBRC	WP_042164030.1	WP_042164029.1
<i>Streptomyces</i> sp. AVP053U2	WP_042173708.1	WP_042173710.1

Kibdelosporangium sp. MJ126-NF4	WP_042191302.1	WP_042191300.1
Kibdelosporangium sp. MJ126-NF4	WP_232328348.1	WP_042193149.1
Paenibacillus borealis	WP_042210952.1	WP_042210953.1
Nocardia brasiliensis strain=NCTC11294	WP_042254358.1	WP_042254357.1
Streptacidiphilus neutrinimicus	WP_042372855.1	WP_042372853.1
Streptacidiphilus melanogenes	WP_042387315.1	WP_042387314.1
Streptacidiphilus anmyonensis	WP_042418294.1	WP_042417968.1
Streptacidiphilus anmyonensis	WP_042418136.1	WP_042418139.1
Streptacidiphilus anmyonensis	WP_042431796.1	WP_042431797.1
Streptacidiphilus albus strain=NBRC	WP_034089980.1	WP_042439897.1
Streptomyces sp. NRRL	WP_043222236.1	WP_043222238.1
Streptomyces sp. NRRL	WP_043223691.1	WP_043223689.1
Streptomyces hydrogenans	WP_190224328.1	WP_043231807.1
Streptomyces violaceusniger Tu	WP_014055768.1	WP_043238495.1
Streptomyces vinaceus strain=NRRL	WP_030329569.1	WP_043248648.1
Streptomyces sp. CT34	WP_043263258.1	WP_043263257.1
Streptomyces sp. CT34	WP_043264772.1	WP_043264771.1
Micromonospora sp. XM-20-01	WP_043323617.1	WP_043323619.1
Streptomyces mutabilis strain=JCM	WP_191886786.1	WP_043379936.1
Streptomyces nodosus strain=ZJB2016050	WP_150478232.1	WP_043441484.1
Streptomyces nodosus strain=ZJB2016050	WP_043445958.1	WP_043445955.1
Streptomyces fulvoviolaceus	WP_030615795.1	WP_043456491.1
Streptomyces xinghaiensis strain=OlgR	WP_043461718.1	WP_043461717.1
Kitasatospora sp. MBT66	WP_030396589.1	WP_043476903.1
Streptomyces glaucescens strain=GLA.O	WP_159072834.1	WP_043505397.1
Streptomyces glaucescens strain=GLA.O	WP_043505415.1	WP_043505413.1
Nonomuraea candida	WP_052422960.1	WP_043622790.1
Nocardia vulneris	WP_156161394.1	WP_043663372.1
Nocardia vulneris	WP_043666495.1	WP_043666492.1
Streptomyces xylophagus	WP_043667173.1	WP_043667170.1
Nocardia abscessus	WP_043693297.1	WP_043693299.1
Kutzneria sp. 744	WP_043718729.1	WP_043718727.1
Kutzneria sp. 744	WP_198047787.1	WP_043718804.1
Nocardia asiatica	WP_043730177.1	WP_043730181.1
Amycolatopsis rifamycinica	WP_235190735.1	WP_043777863.1
Amycolatopsis orientalis DSM	WP_043832850.1	WP_043832848.1
Kitasatospora griseola	WP_043910450.1	WP_043910453.1
Kitasatospora griseola	WP_043910493.1	WP_043910492.1
Kitasatospora griseola	WP_043912009.1	WP_043912010.1
Streptomyces natalensis	WP_044366878.1	WP_044366877.1
Streptomyces cyaneogriseus	WP_044378745.1	WP_044378742.1
Streptomyces albulus strain=CK-15	WP_016573122.1	WP_044378892.1
Streptomyces cyaneogriseus	WP_044386965.1	WP_044386967.1
Amycolatopsis orientalis	WP_044852706.1	WP_044852707.1
Saccharothrix sp. ST-888	WP_045303801.1	WP_045303800.1
Lentzea aerocolonigenes strain=NRRL	WP_045309298.1	WP_045309299.1
Streptomyces sp. TN58	WP_199838695.1	WP_045321080.1
Streptomyces sp. cf124	WP_093790725.1	WP_045558718.1
Streptomyces sp. cf124	WP_045563495.1	WP_045563494.1
Streptomyces sp. FxanaA7	WP_045563578.1	WP_045563579.1
Streptomyces rubellomurinus	WP_045693276.1	WP_045693277.1
Streptomyces katrae	WP_045946966.1	WP_045946967.1
Photorhabdus luminescens NBAII	WP_052105790.1	WP_046396662.1
Streptomyces malaysiense	WP_046422180.1	WP_046422179.1
Streptomyces mangrovisoli	WP_046584971.1	WP_046584970.1
Streptomyces europaescabiei strain=96-14	WP_046704005.1	WP_046704004.1
Streptomyces humi	WP_046728249.1	WP_046728248.1
Streptomyces humi	WP_046729399.1	WP_046729400.1
Streptomyces yangpuensis	WP_157879752.1	WP_046778253.1
Streptomyces showdoensis	WP_046906201.1	WP_046906200.1
Streptomyces showdoensis	WP_046906673.1	WP_046906672.1
Streptomyces sp. 1222.2	WP_046912982.1	WP_046912983.1
Streptomyces lydicus strain=A02	WP_046923988.1	WP_046923989.1
Streptomyces lydicus strain=A02	WP_046924846.1	WP_046924845.1
Photorhabdus thracensis	WP_052760818.1	WP_046975013.1
Streptomyces sp. CNQ-509	WP_145783816.1	WP_047016599.1
Streptomyces sp. CNZ287	WP_047019019.1	WP_047019020.1
Hoeflea sp. IMCC20628	WP_156174538.1	WP_047031057.1
Delftia lacustris strain=LZ-C	WP_047219561.1	WP_047219560.1
Frankia sp. BMG5.30	WP_047221789.1	WP_047221788.1
Frankia coriariae	WP_047223900.1	WP_047223901.1
Nocardiopsis sp. RV163	WP_047868038.1	WP_047868039.1
Micromonospora sp. RV43	WP_047892979.1	WP_047892978.1
Micromonospora sp. RV43	WP_047894521.1	WP_047894522.1
Streptomyces sp. ADI91-18	WP_008742304.1	WP_047961193.1
Streptomyces sp. HNS054	WP_048456510.1	WP_048456509.1

<i>Streptomyces roseus</i>	WP_048480084.1	WP_048480085.1
<i>Streptomyces viridochromogenes</i> strain=NRRL	WP_048579125.1	WP_048579250.1
<i>Streptomyces viridochromogenes</i> strain=NRRL	WP_048582899.1	WP_048582898.1
<i>Nocardopsis</i> sp. SBT366	WP_049579151.1	WP_049579149.1
<i>Photorhabdus luminescens</i> strain=ATCC	WP_080985084.1	WP_049584498.1
<i>Kitasatospora xanthocidica</i> strain=MMS17-GH009	WP_049659039.1	WP_049659038.1
<i>Streptomyces caatingaensis</i>	WP_049714123.1	WP_049714124.1
<i>Streptomyces caatingaensis</i>	WP_049716247.1	WP_049716006.1
<i>Streptomyces caatingaensis</i>	WP_049717080.1	WP_049717079.1
<i>Streptomyces europaeiscabiei</i> strain=NCPBP	WP_050357095.1	WP_050357096.1
<i>Streptomyces acidiscabiei</i> strain=NCPBP	WP_050374529.1	WP_050374462.1
<i>Streptomyces acidiscabiei</i> strain=NCPBP	WP_050375860.1	WP_050375722.1
<i>Streptomyces rimosus</i> subsp.	WP_030668722.1	WP_050514942.1
<i>Frankia alni</i>	WP_041939496.1	WP_050997179.1
<i>Frankia</i> sp. QA3	WP_051054113.1	WP_051054534.1
<i>Actinokineospora enzanensis</i>	WP_033400372.1	WP_051114775.1
<i>Saccharothrix syringae</i>	WP_033430990.1	WP_051765703.1
<i>Streptomyces</i> sp. NRRL	WP_030808116.1	WP_051798617.1
<i>Streptomyces albus</i> subsp.	WP_031176402.1	WP_051803636.1
<i>Streptomyces griseus</i> subsp.	WP_030756043.1	WP_051804580.1
<i>Streptomyces flavochromogenes</i>	WP_030321431.1	WP_051820597.1
<i>Streptomyces microflavus</i>	WP_031124558.1	WP_051821916.1
<i>Streptomyces</i> sp. NRRL	WP_030905199.1	WP_051840077.1
<i>Streptomyces xanthophaeus</i>	WP_031151315.1	WP_051858854.1
<i>Streptomyces exfoliatus</i>	WP_051874446.1	WP_051874447.1
<i>Kitasatospora medicidica</i>	WP_035803277.1	WP_051967271.1
<i>Actinokineospora mzabensis</i> strain=CECT	WP_035280228.1	WP_052020894.1
<i>Actinokineospora mzabensis</i> strain=CECT	WP_181399936.1	WP_052021392.1
<i>Streptomyces</i> sp. MUSC	WP_039653137.1	WP_052269939.1
<i>Amycolatopsis taiwanensis</i>	WP_027941848.1	WP_052371535.1
<i>Streptomyces roseoverticillatus</i> strain=NRRL	WP_030366023.1	WP_052392594.1
<i>Streptomyces</i> sp. NRRL	WP_234343608.1	WP_052397602.1
<i>Streptomyces</i> sp. NRRL	WP_159011955.1	WP_052397638.1
<i>Streptomyces vietnamensis</i>	WP_041130148.1	WP_052499199.1
<i>Luteipulveratus mongoliensis</i>	WP_052596581.1	WP_052590400.1
<i>Streptomyces avicenniae</i>	WP_052852531.1	WP_052852530.1
<i>Streptomyces niger</i>	WP_052863077.1	WP_052863076.1
<i>Streptomyces ambofaciens</i> strain=DSM	WP_053125871.1	WP_053125868.1
<i>Streptomyces ambofaciens</i>	WP_053137069.1	WP_053137066.1
<i>Streptomyces resistomycificus</i>	WP_030038588.1	WP_053192394.1
<i>Streptomyces viridochromogenes</i> strain=NRRL	WP_048579125.1	WP_053198604.1
<i>Streptomyces decoyicus</i>	WP_030082856.1	WP_053209015.1
<i>Streptomyces antibioticus</i> strain=NRRL	WP_030656652.1	WP_053212743.1
<i>Streptomyces</i> sp. COG20	WP_222518234.1	WP_053560103.1
<i>Streptomyces</i> sp. H036	WP_030650395.1	WP_053625965.1
<i>Streptomyces cinnamomensis</i>	WP_030650395.1	WP_053628071.1
<i>Streptomyces</i> sp. MMG1064	WP_030818022.1	WP_053629579.1
<i>Streptomyces</i> sp. XY413	WP_053706443.1	WP_053631600.1
<i>Streptomyces</i> sp. MMG1064	WP_030821313.1	WP_053632822.1
<i>Streptomyces diastaticus</i> strain=SID7513	WP_030402764.1	WP_053637533.1
<i>Streptomyces</i> sp. NRRL	WP_031082067.1	WP_053637982.1
<i>Streptomyces</i> sp. NRRL	WP_053645746.1	WP_053645748.1
<i>Streptomyces</i> sp. NRRL	WP_053649916.1	WP_053649918.1
<i>Micromonospora</i> sp. NRRL	WP_053659925.1	WP_053659927.1
<i>Streptomyces</i> sp. NRRL	WP_053669415.1	WP_053669414.1
<i>Streptomyces</i> sp. WM4235	WP_053677109.1	WP_053677110.1
<i>Streptomyces</i> sp. XY66	WP_053631601.1	WP_053677305.1
<i>Streptomyces</i> sp. IGB124	WP_053631601.1	WP_053687225.1
<i>Streptomyces</i> sp. NRRL	WP_033022242.1	WP_053699786.1
<i>Streptomyces</i> sp. NRRL	WP_053700555.1	WP_053700554.1
<i>Streptomyces</i> sp. NRRL	WP_030342513.1	WP_053708057.1
<i>Saccharothrix</i> sp. NRRL	WP_053715019.1	WP_053715018.1
<i>Streptomyces</i> sp. WM6378	WP_053726116.1	WP_053726117.1
<i>Nocardia</i> sp. NRRL	WP_053735788.1	WP_053735789.1
<i>Nocardia</i> sp. NRRL	WP_053737651.1	WP_053737650.1
<i>Streptomyces</i> sp. NRRL	WP_053742204.1	WP_053742205.1
<i>Streptomyces</i> sp. NRRL	WP_053744419.1	WP_053744418.1
<i>Streptomyces</i> sp. MMG1533	WP_199830644.1	WP_053751140.1
<i>Streptomyces</i> sp. MMG1533	WP_053755072.1	WP_053755073.1
<i>Streptomyces</i> sp. AS58	WP_053757888.1	WP_053757887.1
<i>Streptomyces</i> sp. KS	WP_053789482.1	WP_053789481.1
<i>Streptomyces rimosus</i> subsp.	WP_032920569.1	WP_053804336.1
<i>Streptomyces</i> sp. NRRL	WP_053847565.1	WP_053847566.1
<i>Streptomyces</i> sp. NRRL	WP_053847746.1	WP_053847745.1
<i>Streptomyces</i> sp. TP-A0875	WP_030420249.1	WP_053912976.1
<i>Streptomyces chattanoogaensis</i>	WP_053921786.1	WP_053921787.1

<i>Streptomyces chattanoogensis</i>	WP_053926095.1	WP_053926096.1
<i>Streptomyces mutomycini</i>	WP_031095948.1	WP_053930101.1
<i>Alloactinosynnema</i> sp. L-07	WP_054044438.1	WP_054044441.1
<i>Streptomyces</i> sp. RLA2-12	WP_211179941.1	WP_054237211.1
<i>Kibdelosporangium phytohabitans</i> strain=DSM	WP_054292818.1	WP_054292817.1
<i>Frankia</i> sp. R43	WP_054566348.1	WP_054566347.1
<i>Streptomyces milbemycinicus</i>	WP_086859600.1	WP_055414292.1
<i>Streptomyces pactum</i> strain=ACT12	WP_055417860.1	WP_055417861.1
<i>Streptomyces pactum</i> strain=ACT12	WP_055422251.1	WP_055422252.1
<i>Streptomyces</i> sp. NBRC	WP_031082067.1	WP_055468989.1
<i>Streptomyces pathocidini</i>	WP_055471408.1	WP_055471409.1
<i>Streptomyces</i> sp. TP-A0356	WP_055490538.1	WP_055490537.1
<i>Nonomurea pusilla</i> strain=DSM	WP_055510056.1	WP_055510058.1
<i>Streptomyces ossamyceticus</i>	WP_055521571.1	WP_055521570.1
<i>Streptomyces ossamyceticus</i> strain=SAI-001	WP_055522074.1	WP_055522075.1
<i>Streptomyces graminilatus</i>	WP_055525529.1	WP_055525528.1
<i>Streptomyces graminilatus</i>	WP_055530720.1	WP_055530723.1
<i>Streptomyces neyagawaensis</i>	WP_055537377.1	WP_055537376.1
<i>Streptomyces neyagawaensis</i>	WP_240501046.1	WP_055537422.1
<i>Streptomyces neyagawaensis</i>	WP_157873121.1	WP_055538441.1
<i>Streptomyces kanamyceticus</i>	WP_055544267.1	WP_055544268.1
<i>Streptomyces kanamyceticus</i>	WP_055549691.1	WP_055549689.1
<i>Streptomyces kanamyceticus</i>	WP_055554168.1	WP_055554166.1
<i>Streptomyces atriruber</i>	WP_055568763.1	WP_055568762.1
<i>Streptomyces prasinopilosus</i>	WP_055573178.1	WP_055573179.1
<i>Streptomyces hirsutus</i>	WP_055593196.1	WP_055593195.1
<i>Streptomyces hirsutus</i>	WP_055593898.1	WP_055593899.1
<i>Streptomyces aureus</i> strain=NRRL	WP_055602213.1	WP_055602212.1
<i>Streptomyces prasinus</i> strain=ATCC	WP_055605500.1	WP_055605501.1
<i>Streptomyces phaeochromogenes</i>	WP_055613727.1	WP_055613726.1
<i>Streptomyces</i> sp. JHA19	WP_055624624.1	WP_055624623.1
<i>Streptomyces</i> sp. JHA19	WP_055624995.1	WP_055624994.1
<i>Streptomyces hirsutus</i> strain=NRRL	WP_055627791.1	WP_055627792.1
<i>Streptomyces hirsutus</i> strain=NRRL	WP_055631026.1	WP_055631025.1
<i>Streptomyces griseoruber</i>	WP_055637369.1	WP_055637368.1
<i>Streptomyces griseoruber</i>	WP_055637473.1	WP_055637472.1
<i>Streptomyces gardneri</i>	WP_055643854.1	WP_055643855.1
<i>Streptomyces gardneri</i>	WP_055645220.1	WP_055645219.1
<i>Streptomyces prasinus</i>	WP_055691196.1	WP_055691197.1
<i>Streptomyces prasinopilosus</i> strain=NRRL	WP_055573178.1	WP_055695347.1
<i>Streptomyces silaceus</i>	WP_055697661.1	WP_055697662.1
<i>Streptomyces torulosus</i>	WP_055522074.1	WP_055711344.1
<i>Streptomyces torulosus</i>	WP_055712865.1	WP_055712864.1
<i>Streptomyces niveiscabiei</i>	WP_206191172.1	WP_055719628.1
<i>Streptomyces</i> sp. V2	WP_109361111.1	WP_055720667.1
<i>Streptomyces niveiscabiei</i>	WP_055720945.1	WP_055720944.1
<i>Streptomyces</i> sp. V2	WP_055723264.1	WP_055723265.1
<i>Streptomyces</i> sp. Root66D1	WP_056556847.1	WP_056556843.1
<i>Streptomyces</i> sp. Root66D1	WP_056568706.1	WP_056568709.1
<i>Streptomyces</i> sp. Root431	WP_056639676.1	WP_056639673.1
<i>Streptomyces</i> sp. Tu10	WP_214299761.1	WP_056698536.1
<i>Streptomyces</i> sp. ADI97-07	WP_124283265.1	WP_056787794.1
<i>Streptomyces clavifer</i>	WP_056794282.1	WP_056794284.1
<i>Nocardia</i> sp. Root136	WP_056819518.1	WP_056819519.1
<i>Kitasatospora</i> sp. Root187	WP_057231757.1	WP_057231755.1
<i>Streptomyces</i> sp. Root264	WP_057577768.1	WP_057577767.1
<i>Streptomyces</i> sp. Root264	WP_057580839.1	WP_057580841.1
<i>Streptomyces</i> sp. Root1310	WP_057605536.1	WP_057605534.1
<i>Streptomyces</i> sp. Root369	WP_057608895.1	WP_057608896.1
<i>Streptomyces</i> sp. Root369	WP_057613879.1	WP_057613878.1
<i>Streptomyces hygrosopicus</i> subsp.	WP_058080278.1	WP_058080277.1
<i>Photorhabdus laumondii</i> subsp.	WP_011148295.1	WP_058589266.1
<i>Nocardia jinanensis</i>	WP_058854634.1	WP_058854635.1
<i>Streptomyces</i> sp. CdTB01	WP_058920528.1	WP_058920527.1
<i>Streptomyces</i> sp. CdTB01	WP_058923456.1	WP_058923457.1
<i>Streptomyces specialis</i>	WP_059008591.1	WP_059008590.1
<i>Streptomyces acidiscabies</i>	WP_050375860.1	WP_059043403.1
<i>Streptomyces acidiscabies</i>	WP_010353751.1	WP_059043575.1
<i>Streptomyces acidiscabies</i> strain=a10	WP_059044563.1	WP_059044489.1
<i>Streptomyces scabiei</i> strain=S58	WP_059083439.1	WP_059083438.1
<i>Streptomyces</i> sp. 3212.3	WP_059126997.1	WP_059126998.1
<i>Streptomyces</i> sp. 3212.3	WP_059130314.1	WP_059130315.1
<i>Streptomyces</i> sp. WAC05858	WP_059141951.1	WP_059141950.1
<i>Streptomyces antibioticus</i>	WP_059193539.1	WP_059193538.1
<i>Streptomyces canus</i>	WP_057613879.1	WP_059205882.1
<i>Streptomyces canus</i>	WP_059208347.1	WP_059208346.1

Streptomyces sp. FBKL.4005	WP_059247726.1	WP_059247725.1
Streptomyces sp. FBKL.4005	WP_094374188.1	WP_059248942.1
Streptomyces corchorusii	WP_059263828.1	WP_059263829.1
Streptomyces canus strain=C-509	WP_059301433.1	WP_059301432.1
Streptomyces azureus	WP_059417155.1	WP_059417154.1
Streptomyces azureus	WP_059417167.1	WP_059417168.1
Streptomyces azureus	WP_059418084.1	WP_059418083.1
Streptomyces sp. fd1-xmd	WP_078093526.1	WP_060179670.1
Pseudonocardia sp. EC080619-01	WP_060577482.1	WP_060577272.1
Streptomyces albus subsp.	WP_060731423.1	WP_060731351.1
Streptomyces sp. OK228	WP_097287362.1	WP_060895971.1
Streptomyces scabiei strain=96-08	WP_037723186.1	WP_060906657.1
Streptomyces hygrosopicus subsp.	WP_060944228.1	WP_060944227.1
Streptomyces hygrosopicus	WP_079106283.1	WP_060949427.1
Streptomyces sp. NBRC	WP_060952888.1	WP_060952889.1
Nocardiopsis alborubida	WP_061080669.1	WP_061080670.1
Nocardiopsis alborubida	WP_061082460.1	WP_061082459.1
Streptomyces sp. CCM	WP_061442547.1	WP_061442548.1
Streptomyces sp. CCM	WP_061443597.1	WP_061443598.1
Streptomyces bungoensis	WP_061918568.1	WP_061918570.1
Streptomyces bungoensis	WP_061928196.1	WP_061928195.1
Streptomyces hygrosopicus subsp.	WP_079079671.1	WP_062008684.1
Streptomyces griseorubiginosus strain=DSM	WP_062025897.1	WP_062025896.1
Streptomyces griseorubiginosus strain=DSM	WP_062026311.1	WP_062026310.1
Streptomyces canus strain=DSM	WP_062037427.1	WP_062037430.1
Streptomyces canus strain=DSM	WP_062040607.1	WP_062040610.1
Streptomyces sp. CC71	WP_062134916.1	WP_062134919.1
Streptomyces curacoi	WP_062155423.1	WP_062155425.1
Streptomyces griseorubiginosus	WP_062240986.1	WP_062240988.1
Streptomyces sp. BK205	WP_132835596.1	WP_062242513.1
Streptomyces sp. NBRC	WP_062646379.1	WP_062646378.1
Streptomyces sp. NRRL	WP_062667750.1	WP_062667752.1
Streptomyces sp. NRRL	WP_062674197.1	WP_062674195.1
Streptomyces regalis	WP_062705533.1	WP_062705535.1
Streptomyces regalis	WP_167364436.1	WP_062705836.1
Streptomyces regalis	WP_062715242.1	WP_062715240.1
Streptomyces caeruleatus	WP_062717647.1	WP_062717646.1
Streptomyces caeruleatus	WP_167366201.1	WP_062718364.1
Streptomyces cinereoruber subsp.	WP_062751469.1	WP_062751470.1
Streptomyces sp. WAC00288	WP_062757676.1	WP_062757674.1
Streptomyces qaidamensis	WP_062929168.1	WP_062929167.1
Nocardia africana strain=NCTC13184	WP_062966924.1	WP_062966926.1
Nocardia anaemiae	WP_062985829.1	WP_062985831.1
Nocardia mikamii	WP_063002435.1	WP_063002434.1
Nocardia kruczakiae	WP_063008750.1	WP_063008751.1
Nocardia nova strain=ATCC	WP_104407661.1	WP_063012014.1
Nocardia nova strain=ATCC	WP_063012016.1	WP_063025877.1
Amycolatopsis keratiniphila subsp.	WP_143253861.1	WP_063276278.1
Streptomyces sp. MJM8645	WP_244293576.1	WP_063346343.1
Streptomyces sp. MJM8645	WP_063350295.1	WP_063350294.1
Pseudoalteromonas luteoviolacea DSM	WP_063358305.1	WP_063358306.1
Pseudoalteromonas luteoviolacea S2607	WP_063371363.1	WP_063371364.1
Pseudoalteromonas luteoviolacea strain=NCIMB	WP_063379107.1	WP_063379106.1
Pseudoalteromonas luteoviolacea S4060-1	WP_063381924.1	WP_063381923.1
Streptomyces ambofaciens strain=DSM	WP_063483080.1	WP_063483079.1
Streptomyces sp. RTd22	WP_063730699.1	WP_063730700.1
Streptomyces sp. NRRL	WP_030673097.1	WP_063761226.1
Streptomyces albulus strain=B-3066	WP_064071254.1	WP_064071255.1
Micromonospora sp. NBRC	WP_064445763.1	WP_064445764.1
Streptomyces sp. SAT1	WP_064533819.1	WP_064533818.1
Streptomyces parvulus strain=JCM	WP_064729825.1	WP_064729824.1
Streptomyces parvulus strain=JCM	WP_064732208.1	WP_064732209.1
Nocardia nova strain=BJ06-0156	WP_063012016.1	WP_064904326.1
Nocardia sp. 852002-20019	WP_063012016.1	WP_064909732.1
Nocardia sp. 852002-51101	WP_063012016.1	WP_064927099.1
Streptomyces sp. H-KF8	WP_065002515.1	WP_065002516.1
Delftia sp. JD2	WP_047219561.1	WP_065346697.1
Photorhabdus namnaonensis	WP_082302633.1	WP_065391619.1
Acidithiobacillus ferrivorans strain=YL15	WP_065414055.1	WP_065414054.1
Streptomyces sp. PTY08712	WP_065482189.1	WP_065482186.1
Lentzea guizhouensis	WP_065913515.1	WP_065913514.1
Streptomyces sparsogenes DSM	WP_065965817.1	WP_065965816.1
Streptomyces hygrosopicus	WP_066028102.1	WP_066028101.1
Candidatus Desulfofervidus auxilii	WP_066062736.1	WP_066062739.1
Streptomyces thermoautotrophicus strain=HI1	WP_066890293.1	WP_066890288.1
Streptomyces sp. NBRC	WP_066927529.1	WP_066927527.1

Streptomyces sp. NBRC	WP_066939262.1	WP_066939265.1
Microtetraspora fusca	WP_066941725.1	WP_066941498.1
Streptomyces lushanensis	WP_066948014.1	WP_066947978.1
Streptomyces sp. NRRL	WP_066988336.1	WP_066988337.1
Streptomyces cellostaticus	WP_067005143.1	WP_067005141.1
Streptomyces cellostaticus	WP_067010752.1	WP_067010750.1
Streptomyces dysideae	WP_067021570.1	WP_067021572.1
Streptomyces dysideae	WP_067029502.1	WP_067029504.1
Streptomyces dysideae	WP_067033417.1	WP_067033419.1
Streptomyces sp. ERV7	WP_158942597.1	WP_067162616.1
Streptomyces longwoodensis	WP_067233052.1	WP_067233050.1
Streptomyces sp. DSM	WP_234359949.1	WP_067244867.1
Streptomyces sp. DSM	WP_067246164.1	WP_067247659.1
Streptomyces jeddahensis	WP_067283720.1	WP_067283724.1
Streptomyces jeddahensis	WP_067284954.1	WP_067284953.1
Micromonospora rifamycinica	WP_067303674.1	WP_067303671.1
Micromonospora rifamycinica	WP_067308427.1	WP_067308454.1
Streptomyces griseochromogenes strain=DSM	WP_067316072.1	WP_067316070.1
Streptomyces griseochromogenes strain=DSM	WP_067316333.1	WP_067316331.1
Micromonospora rosaria	WP_067359461.1	WP_067359411.1
Streptomyces mirabilis strain=P16B-1	WP_168498362.1	WP_067361020.1
Micromonospora rosaria	WP_067372613.1	WP_067372610.1
Streptomyces olivochromogenes	WP_067384735.1	WP_067384739.1
Streptomyces thermovulgaris	WP_086793185.1	WP_067397763.1
Streptomyces thermovulgaris	WP_236561229.1	WP_067398924.1
Streptomyces sampsonii strain=KJ40	WP_067409957.1	WP_067409955.1
Streptomyces lincolnensis strain=B48	WP_067442581.1	WP_067442579.1
Nocardia alba	WP_067445795.1	WP_067445793.1
Actinomadura macra	WP_067452422.1	WP_067452420.1
Nocardia alba	WP_132370335.1	WP_067458168.1
Nocardia amamiensis	WP_067462446.1	WP_067462449.1
Actinomadura hibisca	WP_067491182.1	WP_067491180.1
Actinoplanes sp. TFC3	WP_067499173.1	WP_067499172.1
Nocardia terpenica strain=IFM	WP_067582824.1	WP_067582827.1
Nocardia terpenica strain=IFM	WP_067592170.1	WP_067592167.1
Actinoplanes awajinensis subsp.	WP_269748325.1	WP_067687395.1
Nocardia yamanashiensis	WP_169815307.1	WP_067708357.1
Actinomadura formosensis	WP_067794013.1	WP_067794014.1
Nocardia beijingensis	WP_067798236.1	WP_067798240.1
Actinomadura kijaniata	WP_067813794.1	WP_067813796.1
Actinomadura chibensis	WP_067900683.1	WP_067900687.1
Actinomadura rubrobrunea	WP_067915615.1	WP_067915614.1
Nocardiopsis trehalosi	WP_067975235.1	WP_067975238.1
Nocardia mexicana	WP_068014611.1	WP_068014613.1
Nocardia mexicana	WP_068025260.1	WP_068025258.1
Rhodococcus sp. EPR-157	WP_197480983.1	WP_068380381.1
Pseudonocardia sp. HH130630-07	WP_068801047.1	WP_068801048.1
Micromonospora chalcea strain=LB41	WP_069088550.1	WP_069088551.1
Streptomyces griseus strain=BIG105	WP_069173814.1	WP_069173813.1
Streptomyces lydicus strain=103	WP_069569204.1	WP_069569205.1
Streptomyces sp. EN27	WP_069739084.1	WP_069739083.1
Streptomyces sp. EN23	WP_069743869.1	WP_069743870.1
Streptomyces sp. EN16	WP_069752447.1	WP_069752446.1
Streptomyces sp. LUP47B	WP_069759373.1	WP_069759374.1
Streptomyces sp. LUP47B	WP_069764407.1	WP_069764406.1
Streptomyces sp. LUP30	WP_079141676.1	WP_069768259.1
Streptomyces sp. LUP30	WP_069772248.1	WP_069772249.1
Streptomyces sp. LUP30	WP_069772986.1	WP_069772985.1
Streptomyces fodineus	WP_069779518.1	WP_069779519.1
Streptomyces sp. TP-A0874	WP_069814232.1	WP_069814231.1
Actinoalloteichus hymeniacidonis	WP_069848463.1	WP_069848465.1
Streptomyces subbrutilus strain=10-1-1	WP_069918767.1	WP_069918766.1
Streptomyces subbrutilus strain=10-1-1	WP_069924429.1	WP_069924428.1
Streptomyces agglomeratus strain=5-2-6	WP_069931167.1	WP_069931166.1
Streptomyces abyssalis	WP_070010966.1	WP_070010965.1
Streptomyces nanshensis	WP_070014825.1	WP_070014823.1
Streptomyces misionensis	WP_070024072.1	WP_070024070.1
Frankia sp. CgIM4	WP_070132435.1	WP_070132437.1
Frankia sp. CgIM4	WP_070132702.1	WP_070132700.1
Streptomyces nanshensis strain=SCSIO	WP_070199882.1	WP_070199883.1
Mycobacteroides saopaulense strain=8528	WP_070910380.1	WP_070910379.1
Frankia sp. BMG5.36	WP_241841482.1	WP_071046761.1
Frankia sp. BMG5.36	WP_071052027.1	WP_071052026.1
Frankia soli	WP_071066914.1	WP_071066857.1
Frankia sp. Cc1.17	WP_131803084.1	WP_071085077.1
Streptomyces albidoflavus strain=77	WP_067409957.1	WP_071330692.1

Streptomyces albidoflavus strain=OsiLf-2	WP_071337344.1	WP_071337345.1
Streptomyces colonosanans	WP_071364297.1	WP_071364298.1
Streptomyces monashensis	WP_071380424.1	WP_071380423.1
Nocardioopsis dassonvillei strain=NOCA502F	WP_013155269.1	WP_071622845.1
Streptomyces humi	WP_071659785.1	WP_071659786.1
Couchioplanes caeruleus strain=DSM	WP_071802703.1	WP_071802704.1
Amycolatopsis australiensis	WP_072478127.1	WP_072478128.1
Streptomyces atratus strain=OK807	WP_072484345.1	WP_072484346.1
Streptomyces atratus strain=OK807	WP_072484752.1	WP_072484753.1
Streptomyces atratus strain=OK807	WP_072488766.1	WP_072488765.1
Phormidismis priestleyi	WP_073068954.1	WP_073068955.1
Streptomyces sp. NBRC	WP_073215232.1	WP_073215229.1
Nocardioopsis flavescens	WP_073374285.1	WP_073375300.1
Nocardioopsis flavescens	WP_073378775.1	WP_073378774.1
Geodermatophilus nigrescens	WP_245794804.1	WP_073422200.1
Streptomyces noursei strain=JCM	WP_102923492.1	WP_073448207.1
Streptomyces phaeoluteigriseus strain=DSM	WP_073496213.1	WP_073496215.1
Chroogloeocystis siderophila	WP_073549750.1	WP_073549752.1
Streptomyces sp. CB02414	WP_073724194.1	WP_073724195.1
Streptomyces sp. TSRI0281	WP_073728615.1	WP_073728613.1
Streptomyces sp. CB02488	WP_073737891.1	WP_073737892.1
Streptomyces sp. CB02488	WP_073738919.1	WP_073738918.1
Streptomyces sp. CB02115	WP_050357095.1	WP_073743113.1
Streptomyces sp. CB02058	WP_073749549.1	WP_073749548.1
Streptomyces sp. CB03234	WP_073759807.1	WP_073759805.1
Streptomyces sp. MJM1172	WP_073775776.1	WP_073775774.1
Streptomyces sp. KCTC	WP_008742304.1	WP_073780068.1
Streptomyces uncialis	WP_073784277.1	WP_073784275.1
Streptomyces sp. CB01580	WP_073789517.1	WP_073789519.1
Streptomyces sp. CB03578	WP_008742304.1	WP_073798812.1
Kitasatospora sp. CB01950	WP_073812888.1	WP_073812889.1
Streptomyces sp. CB02261	WP_073814418.1	WP_073814416.1
Kitasatospora sp. CB01950	WP_073815772.1	WP_073815774.1
Micromonospora sp. TSRI0369	WP_073828438.1	WP_073828439.1
Micromonospora sp. CB01531	WP_073836262.1	WP_073836263.1
Streptomyces sp. CB01249	WP_073865378.1	WP_073865379.1
Streptomyces sp. CB01249	WP_018102924.1	WP_073865476.1
Streptomyces sp. CB01249	WP_073865800.1	WP_073865799.1
Saccharothrix sp. CB00851	WP_143193283.1	WP_073892161.1
Streptomyces sp. PanSC9	WP_073893212.1	WP_073893209.1
Streptomyces sp. CB02009	WP_073905106.1	WP_073905104.1
Streptomyces sp. CB00455	WP_073918212.1	WP_073918210.1
Streptomyces sp. CB02400	WP_073931335.1	WP_073931336.1
Streptomyces sp. CB02400	WP_073934957.1	WP_073934958.1
Streptomyces sp. TSRI0107	WP_073938881.1	WP_073938882.1
Streptomyces sp. TSRI0107	WP_073943900.1	WP_073943901.1
Streptomyces kebangsaanensis	WP_073947344.1	WP_073947343.1
Streptomyces kebangsaanensis	WP_073948911.1	WP_073948910.1
Streptomyces kebangsaanensis	WP_073950879.1	WP_073950877.1
Streptomyces sp. CB02460	WP_073969085.1	WP_073969086.1
Streptomyces sp. CB02460	WP_073969204.1	WP_073969203.1
Streptomyces sp. CB02460	WP_073969575.1	WP_073969574.1
Micromonospora carbonacea strain=DSM	WP_178064915.1	WP_074473059.1
Streptomyces qinglanensis	WP_074998190.1	WP_074998189.1
Streptomyces qinglanensis	WP_074999498.1	WP_074999499.1
Geodermatophilus obscurus strain=DSM	WP_244274396.1	WP_075015570.1
Streptomyces mirabilis strain=OK461	WP_075030274.1	WP_075030273.1
Streptomyces mirabilis strain=OK461	WP_054237210.1	WP_075033379.1
Actinophytocola xanthii	WP_075125738.1	WP_075125737.1
Actinophytocola xinjiangensis	WP_075131671.1	WP_075131672.1
Actinophytocola xinjiangensis	WP_075137290.1	WP_075137239.1
Pseudonocardia sp. Ae717	WP_075334873.1	WP_075334874.1
Streptomyces acidiscabies strain=98-48	WP_075735622.1	WP_075735598.1
Streptomyces acidiscabies strain=98-48	WP_010359933.1	WP_075737219.1
Actinoalloteichus sp. GBA129-24	WP_075740184.1	WP_075740185.1
Streptomyces acidiscabies	WP_075824540.1	WP_075824531.1
Rhodococcus sp. KRD197	WP_206509240.1	WP_075838339.1
Saccharomonospora sp. CUA-673	WP_075845424.1	WP_075845423.1
Gordonia sp. CNJ-863	WP_084813215.1	WP_075863512.1
Actinokineospora bangkokensis	WP_084793925.1	WP_075974933.1
Actinokineospora bangkokensis	WP_075978765.1	WP_075978764.1
Streptomyces sp. IMTB	WP_076097293.1	WP_076097295.1
Paenibacillus sp. FSL	WP_051493803.1	WP_076161945.1
Microbispora rosea strain=ATCC	WP_076441724.1	WP_076441726.1
Micromonospora avicenniae	WP_076472672.1	WP_076472671.1
Frankia sp. CcI156	WP_063578334.1	WP_076804642.1

Frankia sp. CcI156	WP_076807833.1	WP_076807831.1
Frankia asymbiotica	WP_076814634.1	WP_076814632.1
Frankia sp. CcI49	WP_054566348.1	WP_076834376.1
Frankia sp. BMG5.30	WP_047223900.1	WP_076843945.1
Streptomyces sp. IB2014	WP_076966780.1	WP_076966779.1
Streptomyces sp. M1013	WP_076974590.1	WP_076974589.1
Streptomyces sp. M1013	WP_076976120.1	WP_076976119.1
Streptomyces sp. M1013	WP_076976334.1	WP_076976333.1
Actinosynnema sp. ALI-1.44	WP_076985337.1	WP_076985336.1
Actinosynnema sp. ALI-1.44	WP_076986395.1	WP_076986396.1
Actinosynnema sp. ALI-1.44	WP_076988639.1	WP_076988640.1
Actinosynnema sp. ALI-1.44	WP_076992002.1	WP_076992003.1
Saccharothrix sp. ALI-22-I	WP_077006628.1	WP_077006627.1
Streptomyces sp. MP131-18	WP_077057273.1	WP_077057272.1
Streptomyces sp. JHA26	WP_077796592.1	WP_077796591.1
Streptomyces sp. JHA26	WP_077801382.1	WP_077801381.1
Streptomyces sp. JHA26	WP_077801396.1	WP_077801397.1
Micromonospora sp. Rc5	WP_077940053.1	WP_077940054.1
Streptomyces tsukubensis strain=AT3	WP_077963682.1	WP_077963680.1
Streptomyces tsukubensis strain=AT3	WP_077967196.1	WP_077967194.1
Mycobacteroides salmoniphilum	WP_078331071.1	WP_078331072.1
Mycobacteroides salmoniphilum strain=CCUG	WP_078287962.1	WP_078361898.1
Streptomyces monomycini	WP_030017831.1	WP_078623966.1
Streptomyces antibioticus strain=DSM	WP_030786368.1	WP_078632698.1
Streptomyces antibioticus strain=DSM	WP_030785031.1	WP_078633842.1
Streptomyces hygroscopicus strain=XM201	WP_078640274.1	WP_078647271.1
Marinactinospora thermotolerans	WP_078760759.1	WP_078760758.1
Streptomyces sp. NRRL	WP_030744951.1	WP_078854392.1
Streptomyces sp. SGAir0924	WP_046249270.1	WP_078855271.1
Streptomyces sp. Osf17	WP_019326887.1	WP_078855578.1
Streptomyces caatingaensis	WP_049718467.1	WP_078871539.1
Streptomyces sp. NRRL	WP_030874476.1	WP_078872695.1
Streptomyces sp. NRRL	WP_031022574.1	WP_078912212.1
Embleya scabrispora strain=NF3	WP_078975343.1	WP_078975342.1
Embleya scabrispora strain=NF3	WP_078981475.1	WP_078981474.1
Streptomyces sp. WM6372	WP_053692530.1	WP_078988640.1
Streptomyces ambofaciens	WP_053125893.1	WP_079029946.1
Streptomyces prasinopilosus	WP_055571856.1	WP_079039717.1
Streptomyces thermoautotrophicus strain=UBT1	WP_067068863.1	WP_079046114.1
Streptomyces puniscabiei	WP_055705675.1	WP_079048716.1
Streptomyces yokosukanensis	WP_067133488.1	WP_079071718.1
Streptomyces prasinopilosus strain=NRRL	WP_055693209.1	WP_079104816.1
Streptomyces sp. CC71	WP_031022574.1	WP_079126812.1
Streptomyces ambofaciens strain=DSM	WP_063480893.1	WP_079155320.1
Streptomyces sp. CB02009	WP_073904102.1	WP_079188282.1
Streptomyces antioxidans	WP_240529221.1	WP_079343856.1
Streptomyces sp. Ag109	WP_079432362.1	WP_079432361.1
Streptomyces sp. Ag109	WP_079432341.1	WP_079432411.1
Streptomyces sp. 3214.6	WP_231976244.1	WP_079657760.1
Streptomyces sp. 3214.6	WP_079659606.1	WP_079659604.1
Streptomyces sp. 3214.6	WP_079663810.1	WP_079663811.1
Saccharomonospora piscinae strain=LRS4.154	WP_081190237.1	WP_081190533.1
Streptomyces sp. M41	WP_081220469.1	WP_081220470.1
Streptomyces viridosporus	WP_081239924.1	WP_081239925.1
Streptomyces sp. Sge12	WP_053174054.1	WP_081524509.1
Propionibacterium acidifaciens DSM	WP_021796846.1	WP_081660474.1
Streptacidiphilus jiangxiensis	WP_042441868.1	WP_082014654.1
Tsukamurella pulmonis	WP_269451335.1	WP_082756879.1
Dietzia timorensis strain=ID05-A0528	WP_082908487.1	WP_082908486.1
Mycobacteroides saopaulense strain=CCUG	WP_083017079.1	WP_083017081.1
Streptomyces gilvosporeus	WP_083108816.1	WP_083108817.1
Kitasatospora albolonga	WP_084751608.1	WP_084751611.1
Streptomyces sp. CB03238	WP_084902849.1	WP_084902967.1
Streptomyces sp. CB03238	WP_084903485.1	WP_084903488.1
Thermoactinospora rubra	WP_084963796.1	WP_084963797.1
Frankia casuarinae strain=Cg70.9	WP_085002875.1	WP_085002874.1
Frankia sp. KB5	WP_085016129.1	WP_085016130.1
Streptomyces sp. Amel2xC10	WP_085209679.1	WP_085209680.1
Streptomyces sp. Amel2xC10	WP_085210490.1	WP_085210493.1
Streptomyces sp. Amel2xC10	WP_085213169.1	WP_085213167.1
Streptomyces sp. 13-12-16	WP_085572938.1	WP_085572937.1
Streptomyces glebosus strain=JCM	WP_085923414.1	WP_085923413.1
Streptomyces platensis	WP_085926831.1	WP_085926832.1
Streptomyces africanus	WP_086564502.1	WP_086564503.1
Streptomyces griseocarneus strain=KCC	WP_086567723.1	WP_086567721.1
Streptosporangium minutum	WP_086575008.1	WP_086575006.1

<i>Streptomyces swartbergensis</i>	WP_086599041.1	WP_086599040.1
<i>Streptomyces swartbergensis</i>	WP_086601886.1	WP_086601887.1
<i>Lentzea kentuckyensis</i>	WP_086665222.1	WP_086665223.1
<i>Amycolatopsis pretoriensis</i>	WP_086670573.1	WP_086670571.1
<i>Amycolatopsis pretoriensis</i>	WP_086672727.1	WP_086672725.1
<i>Streptomyces</i> sp. S-9	WP_006134517.1	WP_086684531.1
<i>Streptomyces recifensis</i>	WP_086694999.1	WP_086695000.1
<i>Streptomyces tricolor</i>	WP_086697814.1	WP_086697815.1
<i>Streptomyces variabilis</i>	WP_189363632.1	WP_086700968.1
<i>Streptomyces</i> sp. PAM3C	WP_048456510.1	WP_086705190.1
<i>Streptomyces angustmyceticus</i>	WP_086717501.1	WP_086717502.1
<i>Streptomyces angustmyceticus</i>	WP_086719605.1	WP_086719606.1
<i>Streptomyces carpinensis</i>	WP_086725662.1	WP_086725661.1
<i>Streptomyces glaucescens</i>	WP_086733037.1	WP_086733038.1
<i>Streptomyces glaucescens</i>	WP_169731582.1	WP_086741425.1
<i>Streptomyces brasiliiscabiei</i> strain=IBSBF	WP_086752286.1	WP_086752285.1
<i>Streptomyces galilaeus</i> strain=JCM	WP_150473373.1	WP_086767588.1
<i>Streptomyces bobili</i>	WP_086768531.1	WP_086768529.1
<i>Streptomyces</i> sp. SID6137	WP_085565362.1	WP_086805943.1
<i>Streptomyces cacaoi</i> strain=DSM	WP_212767218.1	WP_086818425.1
<i>Streptomyces</i> sp. NRRL	WP_041131687.1	WP_086821982.1
<i>Streptomyces</i> sp. NRRL	WP_086830456.1	WP_086830455.1
<i>Amycolatopsis kentuckyensis</i>	WP_086840976.1	WP_086840974.1
<i>Streptomyces viridochromogenes</i> strain=NRRL	WP_086866000.1	WP_086866001.1
<i>Streptomyces viridochromogenes</i> strain=NRRL	WP_086866092.1	WP_086866091.1
<i>Streptomyces cangkringensis</i> strain=DSM	WP_167442331.1	WP_086879605.1
<i>Streptomyces</i> sp. CS159	WP_087789537.1	WP_087789538.1
<i>Streptomyces</i> sp. CS159	WP_087790738.1	WP_087790737.1
<i>Streptomyces</i> sp. CS159	WP_007389922.1	WP_087793153.1
<i>Streptomyces</i> sp. CS113	WP_087806871.1	WP_087806870.1
<i>Streptomyces</i> sp. CS113	WP_087807240.1	WP_087807241.1
<i>Streptomyces albireticuli</i> strain=MDJK11	WP_087924979.1	WP_087924980.1
<i>Streptomyces albireticuli</i> strain=MDJK11	WP_087929393.1	WP_087929394.1
<i>Photorhabdus luminescens</i> subsp.	WP_088373856.1	WP_088373855.1
<i>Micromonospora wenchangensis</i>	WP_088642267.1	WP_088642266.1
<i>Micromonospora wenchangensis</i>	WP_088647535.1	WP_088647534.1
<i>Streptomyces</i> sp. 2114.4	WP_088796353.1	WP_088796350.1
<i>Micromonospora zamorensis</i>	WP_088948354.1	WP_088951776.1
<i>Micromonospora purpureochromogenes</i> strain=DSM	WP_172894301.1	WP_088961753.1
<i>Micromonospora purpureochromogenes</i> strain=DSM	WP_088961663.1	WP_088964572.1
<i>Micromonospora siamensis</i>	WP_088971805.1	WP_088971804.1
<i>Micromonospora coxensis</i>	WP_088974809.1	WP_088974808.1
<i>Micromonospora echinospira</i>	WP_088984230.1	WP_088984229.1
<i>Micromonospora echinospira</i>	WP_088985096.1	WP_088985097.1
<i>Micromonospora chokoriensis</i>	WP_088988926.1	WP_088988927.1
<i>Micromonospora chokoriensis</i>	WP_088989434.1	WP_088989435.1
<i>Micromonospora echinaurantiaca</i>	WP_088994003.1	WP_088994002.1
<i>Micromonospora echinofusca</i>	WP_088999964.1	WP_088999965.1
<i>Micromonospora viridifaciens</i>	WP_089008024.1	WP_089008023.1
<i>Micromonospora inositola</i>	WP_089013913.1	WP_089013914.1
<i>Micromonospora coriariae</i>	WP_089020793.1	WP_089020794.1
<i>Streptomyces hyaluromycini</i>	WP_150134227.1	WP_089101201.1
<i>Streptomyces hyaluromycini</i>	WP_089107660.1	WP_089107661.1
<i>Micromonospora</i> sp. NBS	WP_089154218.1	WP_089154217.1
<i>Rhodococcus kyotonensis</i>	WP_089250814.1	WP_089250816.1
<i>Asanoa hainanensis</i>	WP_089251876.1	WP_089251874.1
<i>Geodermatophilus pulveris</i>	WP_245821126.1	WP_089305776.1
<i>Actinomadura mexicana</i>	WP_089311843.1	WP_089311844.1
<i>Actinomadura mexicana</i>	WP_089314644.1	WP_089314773.1
<i>Geodermatophilus saharensis</i>	WP_089405513.1	WP_089405330.1
<i>Streptomyces</i> sp. NBS	WP_089509018.1	WP_089509017.1
<i>Streptomyces</i> sp. NBS	WP_089512944.1	WP_089512945.1
<i>Lentzea albida</i>	WP_089922472.1	WP_089922473.1
<i>Lentzea xinjiangensis</i>	WP_089950895.1	WP_089950896.1
<i>Lentzea xinjiangensis</i>	WP_089956976.1	WP_089956974.1
<i>Lentzea albidocapillata</i> subsp.	WP_090009138.1	WP_090009136.1
<i>Lentzea fradiae</i>	WP_090045589.1	WP_090045588.1
<i>Lentzea fradiae</i>	WP_090059926.1	WP_090059928.1
<i>Lentzea jiangxiensis</i>	WP_090100733.1	WP_090100735.1
<i>Micromonospora marina</i>	WP_091042831.1	WP_091042834.1
<i>Micromonospora marina</i>	WP_091049122.1	WP_091049119.1
<i>Micromonospora humi</i>	WP_091056021.1	WP_091056024.1
<i>Micromonospora citrea</i>	WP_091095206.1	WP_091095204.1
<i>Geodermatophilus dictyosporus</i>	WP_244524299.1	WP_091113448.1
<i>Micromonospora eburnea</i>	WP_091118126.1	WP_091118127.1
<i>Geodermatophilus africanus</i>	WP_091158100.1	WP_091158102.1

Micromonospora narathiwatensis	WP_091192504.1	WP_091192506.1
Micromonospora matsumotoense	WP_141723169.1	WP_091250258.1
Micromonospora chaiyaphumensis	WP_091258826.1	WP_091258824.1
Frankia sp. CH37	WP_226931902.1	WP_091283392.1
Amycolatopsis xylanica	WP_143047009.1	WP_091287568.1
Micromonospora halophytica	WP_091293378.1	WP_091293376.1
Amycolatopsis xylanica	WP_091297629.1	WP_091297626.1
Amycolatopsis xylanica	WP_245757699.1	WP_091298216.1
Micromonospora halophytica	WP_091298406.1	WP_091298409.1
Micromonospora chersina	WP_091305841.1	WP_091305844.1
Micromonospora aurantiaca strain=DSM	WP_013286647.1	WP_091327386.1
Micromonospora aurantiaca strain=DSM	WP_047892979.1	WP_091331605.1
Geodermatophilus telluris	WP_245692583.1	WP_091368510.1
Micromonospora saelicesensis	WP_091394937.1	WP_091394934.1
Micromonospora tulbaghiaie	WP_091417730.1	WP_091417737.1
Micromonospora yangpuensis	WP_091436053.1	WP_091436055.1
Micromonospora yangpuensis	WP_091438698.1	WP_091438695.1
Actinokineospora iranica	WP_175482876.1	WP_091451475.1
Micromonospora inyonensis	WP_091462051.1	WP_091462048.1
Micromonospora inyonensis	WP_232625125.1	WP_091462877.1
Micromonospora sedimnicola	WP_091573943.1	WP_091573944.1
Micromonospora sedimnicola	WP_091574137.1	WP_091574138.1
Micromonospora krabiensis	WP_091589011.1	WP_091589010.1
Micromonospora mirobrigensis	WP_091605592.1	WP_091607008.1
Micromonospora peucetia	WP_091630575.1	WP_091630576.1
Micromonospora pallida	WP_091641740.1	WP_091641736.1
Micromonospora pallida	WP_245730673.1	WP_091645126.1
Micromonospora auratinigra	WP_091660957.1	WP_091660953.1
Micromonospora auratinigra	WP_157740289.1	WP_091661644.1
Prauserella marina strain=CGMCC	WP_091800463.1	WP_091800460.1
Blastococcus endophyticus	WP_091948740.1	WP_091948737.1
Micromonospora phaseoli	WP_092380119.1	WP_092380395.1
Amycolatopsis arida	WP_092535592.1	WP_092535589.1
Actinoplanes derwentensis	WP_092554644.1	WP_092554646.1
Actinopolyspora mزابensis	WP_092627511.1	WP_092627510.1
Quadrisphaera sp. DSM	WP_143028719.1	WP_092861287.1
Saccharopolyspora antimicrobica strain=CPC	WP_093156778.1	WP_093156777.1
Thermostaphylospora chromogena	WP_093257256.1	WP_093257257.1
Saccharopolyspora shandongensis	WP_093260295.1	WP_093260293.1
Saccharopolyspora shandongensis	WP_093260318.1	WP_093260316.1
Thermostaphylospora chromogena	WP_093262519.1	WP_093262518.1
Micromonospora sediminimaris	WP_093402662.1	WP_093402663.1
Streptomyces sp. 2114.2	WP_003973891.1	WP_093456931.1
Streptomyces sp. 2114.2	WP_003973654.1	WP_093456994.1
Streptomyces melanosporofaciens	WP_093465610.1	WP_093470579.1
Streptomyces sp. 1222.5	WP_093471999.1	WP_093472001.1
Streptomyces sp. 1222.5	WP_093478210.1	WP_093478212.1
Streptomyces sp. 2323.1	WP_093481892.1	WP_093481891.1
Streptomyces sp. 2112.2	WP_093486102.1	WP_093486104.1
Streptomyces sp. Ag109	WP_093497982.1	WP_093497983.1
Streptomyces sp. Ag109	WP_093502892.1	WP_093502894.1
Streptomyces sp. Ag109	WP_177233132.1	WP_093503883.1
Streptomyces sp. DvalAA-43	WP_093551853.1	WP_093551851.1
Amycolatopsis rubida	WP_244287150.1	WP_093573244.1
Streptomyces sp. TverLS-915	WP_093581507.1	WP_093581506.1
Geodermatophilus amargosae	WP_093581999.1	WP_093582001.1
Streptomyces jietaisiensis	WP_006140449.1	WP_093590517.1
Lentzea waywayandensis	WP_030474579.1	WP_093600023.1
Streptomyces sp. 3213.3	WP_093627737.1	WP_093627738.1
Streptomyces sp. SceaMP-e96	WP_093640007.1	WP_093640010.1
Streptomyces sp. 2314.4	WP_093481892.1	WP_093648575.1
Streptomyces sp. 2314.4	WP_093486102.1	WP_093649214.1
Streptomyces wuyuanensis	WP_093652934.1	WP_093652935.1
Streptomyces radiopugnans	WP_093657618.1	WP_093657620.1
Streptomyces radiopugnans	WP_093658100.1	WP_093658102.1
Streptomyces sp. DconLS	WP_037653387.1	WP_093678048.1
Streptomyces sp. 2231.1	WP_093478210.1	WP_093696115.1
Streptomyces sp. 2231.1	WP_093471999.1	WP_093698568.1
Streptomyces sp. 2131.1	WP_093710231.1	WP_093710232.1
Streptomyces sp. DII66	WP_093719771.1	WP_093719772.1
Streptomyces sp. DvalAA-14	WP_093735141.1	WP_093735142.1
Streptomyces sp. DvalAA-14	WP_161302157.1	WP_093736425.1
Streptomyces sp. DvalAA-14	WP_093742392.1	WP_093742394.1
Streptomyces sp. PAN	WP_030950128.1	WP_093747306.1
Streptomyces sp. PAN	WP_093748212.1	WP_093748213.1
Streptomyces sp. DvalAA-19	WP_093751039.1	WP_093751041.1

Streptomyces sp. DvalAA-19	WP_018488939.1	WP_093755968.1
Streptomyces sp. F-7	WP_093764049.1	WP_093764048.1
Streptomyces sp. F-7	WP_093768355.1	WP_093768354.1
Streptomyces sp. yr375	WP_093771493.1	WP_093771495.1
Streptomyces sp. yr375	WP_093771960.1	WP_093771958.1
Streptomyces sp. cf124	WP_045563578.1	WP_093792519.1
Streptomyces sp. Wb2n-11	WP_141662808.1	WP_093798140.1
Streptomyces sp. Wb2n-11	WP_093798910.1	WP_093803294.1
Streptomyces sp. PpalLS-921	WP_028441963.1	WP_093822361.1
Streptomyces sp. SolWspMP-5a-2	WP_093829545.1	WP_093829448.1
Streptomyces aidingensis	WP_093838732.1	WP_093838733.1
Streptomyces sp. ScaeMP-6W	WP_067409957.1	WP_093846860.1
Streptomyces pini	WP_093848771.1	WP_093848770.1
Streptomyces pini	WP_093852155.1	WP_093852154.1
Streptomyces pini	WP_093852581.1	WP_093852582.1
Streptomyces sp. KS	WP_093868481.1	WP_093868480.1
Streptomyces sp. TLI	WP_093872456.1	WP_093872455.1
Streptosporangium canum	WP_093885431.1	WP_093885432.1
Streptomyces sp. Ncost-T10-10d	WP_093897574.1	WP_093897573.1
Streptomyces sp. Ncost-T10-10d	WP_093897912.1	WP_093897913.1
Streptomyces sp. LaPpAH-199	WP_030329569.1	WP_093901177.1
Streptomyces sp. cf386	WP_093906549.1	WP_093906548.1
Streptomyces sp. cf386	WP_093908608.1	WP_093908607.1
Streptomyces sp. cf386	WP_093909747.1	WP_093909746.1
Amycolatopsis vastitatis	WP_093947113.1	WP_093947112.1
Streptomyces phaeoluteigriseus strain=DSM	WP_073491120.1	WP_094103200.1
Streptomyces katrae	WP_045951096.1	WP_094192051.1
Streptomyces diastatochromogenes	WP_094217092.1	WP_094217093.1
Streptomyces sp. FBKL.4005	WP_059247965.1	WP_094374614.1
Streptomyces kasugaensis	WP_094791590.1	WP_094791589.1
Nocardiosis dassonvillei strain=HZNU	WP_094804934.1	WP_094804933.1
Plantactinospora sp. KBS50	WP_095565328.1	WP_095565327.1
Streptomyces albireticuli	WP_095578862.1	WP_095578863.1
Streptomyces albireticuli	WP_095584670.1	WP_095584671.1
Streptomyces sp. SA15	WP_095748905.1	WP_095748904.1
Streptomyces sp. SA15	WP_095755417.1	WP_095755416.1
Streptomyces sp. SA15	WP_095755558.1	WP_095755557.1
Streptomyces xinghaiensis	WP_019711493.1	WP_095757315.1
Streptomyces sp. OV198	WP_095851261.1	WP_095851260.1
Streptomyces sp. OV198	WP_054237210.1	WP_095853661.1
Streptomyces sp. TLI	WP_095872102.1	WP_095872101.1
Streptomyces sp. Tue6028	WP_095937951.1	WP_095937952.1
Streptomyces sp. 2323.1	WP_096212264.1	WP_096212263.1
Glutamicibacter sp. BW80	WP_096288719.1	WP_096288721.1
Streptomyces sp. WZ.A104	WP_096624034.1	WP_096624036.1
Orenia metallireducens strain=MSL47	WP_172431980.1	WP_097019111.1
Streptomyces sp. Ag82	WP_257027502.1	WP_097215209.1
Streptomyces sp. Ag82	WP_097222663.1	WP_097222664.1
Streptomyces sp. 1331.2	WP_097235009.1	WP_097235010.1
Nocardia amikacinintolerans	WP_097244053.1	WP_097244052.1
Streptomyces sp. Ag109	WP_097253870.1	WP_097253871.1
Streptomyces sp. TLI	WP_097259582.1	WP_097259581.1
Streptomyces sp. TLI	WP_097268561.1	WP_097268563.1
Streptomyces sp. OK228	WP_054237210.1	WP_097285463.1
Streptomyces sp. rh34	WP_097871790.1	WP_097871792.1
Streptomyces sp. ms184	WP_097875785.1	WP_097875786.1
Streptomyces sp. st140	WP_229823766.1	WP_097883651.1
Streptomyces sp. b84	WP_097910303.1	WP_097910304.1
Streptomyces sp. rh195	WP_097936146.1	WP_097936149.1
Streptomyces sp. or20	WP_097962957.1	WP_097962956.1
Streptomyces sp. f51	WP_030720920.1	WP_097972628.1
Streptomyces sp. MBT59	WP_200735332.1	WP_097985612.1
Streptomyces sp. sk226	WP_030119114.1	WP_098011552.1
Streptomyces sp. st115	WP_030087338.1	WP_098025996.1
Streptomyces sp. st115	WP_257137580.1	WP_098026439.1
Priestia megaterium strain=AFS080677	WP_098563550.1	WP_098563549.1
Nocardia terpenica strain=NC	WP_098693463.1	WP_098693464.1
Micromonospora sp. WMMA1996	WP_098744379.1	WP_098744381.1
Streptomyces sp. Ru87	WP_098753873.1	WP_098753855.1
Bacillus cereus strain=AFS057148	WP_098796878.1	WP_098796876.1
Bacillus wiedmannii strain=AFS048126	WP_180235969.1	WP_098831824.1
Streptomyces sp. ScaeMP-e48	WP_031124558.1	WP_099126841.1
Micromonospora sp. WMMA2032	WP_099160558.1	WP_099160559.1
Micromonospora sp. WMMA2032	WP_099160719.1	WP_099160720.1
Streptomyces sp. SID4921	WP_099171225.1	WP_099171224.1
Streptomyces sp. SID4921	WP_202472708.1	WP_099177863.1

<i>Streptomyces cinnamomeus</i>	WP_099202809.1	WP_099202810.1
<i>Streptomyces</i> sp. SID4919	WP_099284577.1	WP_099284576.1
<i>Streptomyces dengpaensis</i>	WP_099506612.1	WP_099506611.1
<i>Streptomyces</i> sp. TLI	WP_099900489.1	WP_099900487.1
<i>Streptomyces</i> sp. TLI	WP_099905963.1	WP_099905965.1
<i>Streptomyces</i> sp. JV178	WP_099963791.1	WP_099963790.1
<i>Streptomyces</i> sp. JV178	WP_099968520.1	WP_099968519.1
<i>Streptomyces</i> sp. Alain-F2R5	WP_100044745.1	WP_100044744.1
<i>Streptomyces</i> sp. Alain-F2R5	WP_100044756.1	WP_100044757.1
<i>Streptomyces</i> sp. Alain-F2R5	WP_100046655.1	WP_100046656.1
<i>Streptomyces peucetius</i> subsp.	WP_100109703.1	WP_100109702.1
<i>Streptomyces carminius</i>	WP_100200351.1	WP_100200352.1
<i>Streptomyces</i> sp. CB01373	WP_100569053.1	WP_100569052.1
<i>Streptomyces</i> sp. CB01201	WP_100577896.1	WP_100577895.1
<i>Streptomyces</i> sp. CB02120-2	WP_008742304.1	WP_100581074.1
<i>Kitasatospora</i> sp. CB02891	WP_100584261.1	WP_100584260.1
<i>Kitasatospora</i> sp. CB02891	WP_100586108.1	WP_100586109.1
<i>Kitasatospora</i> sp. CB02891	WP_100586140.1	WP_100586139.1
<i>Streptomyces</i> sp. CB01635	WP_100598568.1	WP_100598569.1
<i>Streptomyces</i> sp. CB02959	WP_100601780.1	WP_100601779.1
<i>Streptomyces</i> sp. CB02959	WP_100607836.1	WP_100607837.1
<i>Streptomyces</i> sp. M56	WP_069866999.1	WP_100805800.1
<i>Streptomyces barkulensis</i>	WP_101256770.1	WP_101256769.1
<i>Streptomyces barkulensis</i>	WP_101258072.1	WP_101258071.1
<i>Streptomyces barkulensis</i>	WP_101258549.1	WP_101258548.1
<i>Streptomyces</i> sp. TLI	WP_143676493.1	WP_101390533.1
<i>Streptomyces mirabilis</i> strain=P16B-1	WP_101399151.1	WP_101399153.1
<i>Streptomyces</i> sp. CMB-StM0423	WP_101420561.1	WP_101420560.1
<i>Streptomyces</i> sp. CMB-StM0423	WP_159072350.1	WP_101426476.1
<i>Nocardia fluminea</i>	WP_101469010.1	WP_101469009.1
<i>Nonomuraea indica</i>	WP_101789086.1	WP_101789087.1
<i>Frankia canadensis</i>	WP_101830502.1	WP_101830503.1
<i>Frankia canadensis</i>	WP_165818404.1	WP_101832165.1
<i>Streptomyces</i> sp. SMS	WP_102637044.1	WP_102637045.1
<i>Micromonospora gifhornensis</i>	WP_204291686.1	WP_102656305.1
<i>Streptomyces eurocidicus</i> strain=NRRL	WP_102917436.1	WP_102917435.1
<i>Streptomyces diastaticus</i> strain=deep-sea	WP_102932866.1	WP_102932867.1
<i>Streptomyces malaysiensis</i> strain=F913	WP_069866999.1	WP_102936968.1
<i>Streptomyces</i> sp. SM5	WP_103493044.1	WP_103493045.1
<i>Streptomyces</i> sp. SM5	WP_103493677.1	WP_103493678.1
<i>Streptomyces</i> sp. SM10	WP_103514755.1	WP_103514756.1
<i>Streptomyces</i> sp. SM10	WP_103515120.1	WP_103515119.1
<i>Streptomyces</i> sp. SM10	WP_103515321.1	WP_103515320.1
<i>Streptomyces</i> sp. SM11	WP_181009377.1	WP_103533379.1
<i>Streptomyces</i> sp. SM1	WP_103542132.1	WP_103542131.1
<i>Streptomyces populi</i>	WP_103548176.1	WP_103548175.1
<i>Streptomyces populi</i>	WP_103549087.1	WP_103549088.1
<i>Actinomadura rubteroloni</i>	WP_103565108.1	WP_103565109.1
<i>Actinomadura rubteroloni</i>	WP_103565512.1	WP_103565511.1
<i>Streptomyces</i> sp. Ru71	WP_103779486.1	WP_103779488.1
<i>Streptomyces</i> sp. Ru71	WP_103781755.1	WP_103781756.1
<i>Streptomyces</i> sp. Ru62	WP_103812006.1	WP_103812005.1
<i>Streptomyces</i> sp. Ru62	WP_103813457.1	WP_103813458.1
<i>Streptomyces</i> sp. Ru62	WP_103815541.1	WP_103815543.1
<i>Streptomyces</i> sp. Ru62	WP_103817976.1	WP_103817975.1
<i>Streptomyces</i> sp. Ru73	WP_103830958.1	WP_103830959.1
<i>Streptomyces</i> sp. Ru72	WP_103839815.1	WP_103839814.1
<i>Streptomyces</i> sp. Ru72	WP_103840017.1	WP_103840018.1
<i>Streptomyces</i> sp. Ru72	WP_258053649.1	WP_103843394.1
<i>Thermomonospora echinospora</i>	WP_103936126.1	WP_103936314.1
<i>Thermomonospora echinospora</i>	WP_103936558.1	WP_103936559.1
<i>Thermomonospora echinospora</i>	WP_103944056.1	WP_103943994.1
<i>Micromonospora chalcea</i>	WP_104115206.1	WP_104115205.1
<i>Nocardia nova</i> strain=MDA3397	WP_063012016.1	WP_104366605.1
<i>Nocardia nova</i> strain=MDA3139	WP_104377506.1	WP_104377507.1
<i>Nocardia nova</i>	WP_104393203.1	WP_104393204.1
<i>Chroococcidiopsis</i> sp. TS-821	WP_104547153.1	WP_104547152.1
<i>Streptomyces</i> sp. MH60	WP_104631721.1	WP_104631722.1
<i>Streptomyces tibetensis</i> strain=XZ	WP_104781720.1	WP_104781721.1
<i>Streptomyces tibetensis</i> strain=XZ	WP_104783700.1	WP_104783697.1
<i>Streptomyces</i> sp. QL37	WP_104791178.1	WP_104791179.1
<i>Kitasatospora</i> sp. MMS16-BH015	WP_104817022.1	WP_104817021.1
<i>Kitasatospora</i> sp. MMS16-BH015	WP_158702293.1	WP_104817616.1
<i>Phototrabdus akhurstii</i> strain=0813-124	WP_217470356.1	WP_105395333.1
<i>Phototrabdus luminescens</i> strain=H4	WP_105398013.1	WP_105398014.1
<i>Streptomyces geranii</i>	WP_105973315.1	WP_105973316.1

<i>Streptomyces geranii</i>	WP_105975306.1	WP_105975337.1
<i>Actinopolyspora mortivallis</i> strain=M5A	WP_258174921.1	WP_106112961.1
<i>Pseudosporangium ferrugineum</i>	WP_106128966.1	WP_106128965.1
<i>Prauserella shujinwangii</i>	WP_245900404.1	WP_106176888.1
<i>Glaciihabitans tibetensis</i>	WP_106209762.1	WP_106209760.1
<i>Nonomuraea fuscirosea</i>	WP_106243241.1	WP_106243243.1
<i>Stenomitos frigidus</i>	WP_106259046.1	WP_106259044.1
<i>Geodermatophilus tzadiensis</i>	WP_245887941.1	WP_106279385.1
<i>Actinocorallia populi</i>	WP_106396533.1	WP_106396534.1
<i>Streptomyces</i> sp. DH-12	WP_106415493.1	WP_106415492.1
<i>Streptomyces</i> sp. 111WW2	WP_003973654.1	WP_106517740.1
<i>Saccharothrix carnea</i>	WP_106618840.1	WP_106618841.1
<i>Saccharothrix carnea</i>	WP_106619810.1	WP_106619811.1
<i>Saccharothrix carnea</i>	WP_106620276.1	WP_106620277.1
<i>Nocardia</i> sp. MDA0666	WP_106956536.1	WP_106956537.1
<i>Streptomyces dioscori</i>	WP_107016218.1	WP_107016219.1
<i>Micromonospora</i> sp. MH33	WP_107077917.1	WP_107077916.1
<i>Streptomyces pristinaespiralis</i> strain=PR11	WP_005310680.1	WP_107082425.1
<i>Streptomyces acidiscabies</i> strain=NCPBP	WP_223786235.1	WP_107085617.1
<i>Streptomyces acidiscabies</i>	WP_199849143.1	WP_107115968.1
<i>Micromonospora</i> sp. RP3T	WP_107160341.1	WP_107160339.1
<i>Plantactinospora</i> sp. BB1	WP_107256409.1	WP_107256407.1
<i>Plantactinospora</i> sp. BC1	WP_107256409.1	WP_107267143.1
<i>Streptomyces</i> sp. P3	WP_107442671.1	WP_107442670.1
<i>Streptomyces</i> sp. P3	WP_107445216.1	WP_107445217.1
<i>Streptomyces</i> sp. A244	WP_107456074.1	WP_107456073.1
<i>Streptomyces</i> sp. A244	WP_107459502.1	WP_107459504.1
<i>Streptomyces</i> sp. MA5143a	WP_107464819.1	WP_107464818.1
<i>Streptomyces</i> sp. MA5143a	WP_107465653.1	WP_107465654.1
<i>Streptomyces chartreusis</i> strain=NA02069	WP_107905484.1	WP_107905483.1
<i>Staphylococcus pasteurii</i> strain=SNUC	WP_181300407.1	WP_108000234.1
<i>Streptomyces</i> sp. VMFN-G11Ma	WP_108007559.1	WP_108007558.1
<i>Streptomyces</i> sp. MG	WP_128803851.1	WP_108009527.1
<i>Vitiosangium</i> sp. GDMCC	WP_199243092.1	WP_108073782.1
<i>Streptomyces lunaelactis</i> strain=MM109	WP_108153308.1	WP_108153309.1
<i>Priestia megaterium</i> strain=YC4-R4	WP_108674901.1	WP_108674902.1
<i>Streptomyces nigra</i>	WP_108707145.1	WP_108707144.1
<i>Streptomyces nigra</i>	WP_055624995.1	WP_108708751.1
<i>Streptomyces fragilis</i>	WP_108952140.1	WP_108952141.1
<i>Streptomyces fragilis</i>	WP_108955851.1	WP_108955850.1
<i>Streptomyces coelicoflavus</i>	WP_108986595.1	WP_108986594.1
<i>Streptomyces coelicoflavus</i>	WP_054099032.1	WP_108989577.1
<i>Streptomyces coelicoflavus</i>	WP_007389922.1	WP_108989927.1
<i>Streptomyces rishiriensis</i>	WP_109000726.1	WP_109000725.1
<i>Streptomyces rishiriensis</i>	WP_109002379.1	WP_109002378.1
<i>Streptomyces rubrogriseus</i> strain=SID7739	WP_164275126.1	WP_109033054.1
<i>Streptomyces rubrogriseus</i>	WP_109033412.1	WP_109033411.1
<i>Streptomyces cinereoruber</i> subsp.	WP_062757676.1	WP_109186476.1
<i>Streptomyces</i> sp. CS014	WP_065482189.1	WP_109197470.1
<i>Streptomyces</i> sp. CS207	WP_019326887.1	WP_109202715.1
<i>Streptomyces</i> sp. CS207	WP_031022574.1	WP_109203818.1
<i>Streptomyces orinoci</i>	WP_109282265.1	WP_109282264.1
<i>Streptomyces spongiicola</i>	WP_109293752.1	WP_109293753.1
<i>Streptomyces spongiicola</i> strain=531S	WP_109294138.1	WP_109294139.1
<i>Streptomyces</i> sp. V2	WP_206301464.1	WP_109361765.1
<i>Streptomyces</i> sp. V2	WP_055720945.1	WP_109362493.1
<i>Streptomyces</i> sp. NWU339	WP_109382200.1	WP_109382201.1
<i>Streptomyces</i> sp. ICBB	WP_109447051.1	WP_109447053.1
<i>Streptomyces</i> sp. ICBB	WP_109449791.1	WP_109449793.1
<i>Streptomyces</i> sp. Act143	WP_109493384.1	WP_109493383.1
<i>Nocardia aurea</i>	WP_109525860.1	WP_109525859.1
<i>Streptomyces</i> sp. NWU49	WP_004991632.1	WP_109539514.1
<i>Lentzea deserti</i>	WP_109640593.1	WP_109640592.1
<i>Streptomyces</i> sp. CG	WP_109780050.1	WP_109780049.1
<i>Streptomyces</i> sp. CG	WP_109781804.1	WP_109781803.1
<i>Micromonospora</i> sp. 4G51	WP_109802655.1	WP_109802654.1
<i>Streptomyces</i> sp. ID38640	WP_208686743.1	WP_109887866.1
<i>Micromonospora</i> sp. S4605	WP_109905887.1	WP_109905885.1
<i>Streptomyces</i> sp. ZEA17I	WP_018488939.1	WP_109915546.1
<i>Streptomyces</i> sp. ZEA17I	WP_109915912.1	WP_109915913.1
<i>Streptomyces</i> sp. CS090A	WP_109977735.1	WP_109977734.1
<i>Geodermatophilus normandii</i>	WP_110007464.1	WP_110004746.1
<i>Nocardiosis</i> sp. L17-MgMaSL7	WP_110049626.1	WP_110049625.1
<i>Photorhabdus luminescens</i> strain=H3	WP_110091535.1	WP_110091534.1
<i>Nocardia tenerifensis</i>	WP_169335857.1	WP_110293355.1
<i>Modestobacter versicolor</i>	WP_110554062.1	WP_110554061.1

Micromonospora arborensis	WP_110566543.1	WP_110566545.1
Micromonospora arborensis	WP_110567639.1	WP_110567641.1
Streptomyces griseosporus	WP_110627869.1	WP_110627868.1
Streptomyces actuosus strain=ATCC	WP_110629348.1	WP_110629347.1
Streptomyces tateyamensis	WP_110667375.1	WP_110667373.1
Streptomyces sp. NTH33	WP_111005337.1	WP_111005330.1
Micromonospora deserti	WP_111134650.1	WP_111134649.1
Micromonospora craterilacus	WP_111216202.1	WP_111216204.1
Thermosporothrix hazakensis	WP_111321236.1	WP_111321234.1
Thermosporothrix hazakensis	WP_111324257.1	WP_111324258.1
Thermosporothrix hazakensis	WP_111326601.1	WP_111326599.1
Streptomyces sp. AC1-42W	WP_111334951.1	WP_111334952.1
Streptomyces sp. AC1-42W	WP_111339868.1	WP_111339867.1
Streptomyces sp. SID8358	WP_237512734.1	WP_111381788.1
Kitasatospora sp. SolWspMP-SS2h	WP_111551610.1	WP_111551609.1
Kitasatospora sp. SolWspMP-SS2h	WP_111556639.1	WP_111556638.1
Streptomyces sp. SID69	WP_111583916.1	WP_111583915.1
Streptomyces sp. Amel2xB2	WP_111603706.1	WP_111603705.1
Streptomyces sp. PsTaAH-137	WP_111660971.1	WP_111660970.1
Actinomadura craniellae	WP_111869757.1	WP_111869756.1
Actinomadura craniellae	WP_111870333.1	WP_111870332.1
Frankia sp. Ea1.12	WP_112105928.1	WP_112105929.1
Lentzea atacamensis strain=DSM	WP_109640593.1	WP_112229177.1
Phytoactinopolyspora halophila	WP_112260291.1	WP_112260290.1
Lentzea terrae	WP_112263578.1	WP_112263577.1
Lentzea terrae	WP_198681114.1	WP_112271893.1
Streptomyces cadmiisoli	WP_053757888.1	WP_112440642.1
Streptomyces sp. ICC1	WP_112448184.1	WP_112448183.1
Streptomyces triticisoli	WP_112466236.1	WP_112466235.1
Streptomyces sp. ST1020	WP_205123745.1	WP_112474084.1
Streptomyces sp. ST1020	WP_055720945.1	WP_112474855.1
Streptomyces sp. ST1020	WP_112474931.1	WP_112474930.1
Streptomyces sp. ST1020	WP_109361111.1	WP_112475779.1
Micromonospora noduli	WP_091394937.1	WP_112581710.1
Micromonospora noduli strain=ONO23	WP_091394932.1	WP_112603715.1
Micromonospora saelicesensis strain=PSN01	WP_091394937.1	WP_112626178.1
Micromonospora saelicesensis strain=GAR05	WP_091394937.1	WP_112672539.1
Micromonospora saelicesensis strain=PSN13	WP_091394932.1	WP_112677784.1
Micromonospora noduli strain=GUI43	WP_091394937.1	WP_112698630.1
Micromonospora noduli strain=Lupac	WP_112725944.1	WP_112725943.1
Micromonospora noduli strain=ONO86	WP_091394937.1	WP_112733820.1
Photorhabdus sp. S8-52	WP_112878039.1	WP_112878038.1
Photorhabdus bodei strain=M-CN4	WP_146747460.1	WP_112896048.1
Streptomyces reniochaliniae	WP_114013654.1	WP_114013653.1
Sphaerisporangium album	WP_245966846.1	WP_114031973.1
Streptomyces sp. SDR-06	WP_114035345.1	WP_114035344.1
Streptomyces globosus	WP_114059252.1	WP_114059253.1
Streptomyces atratus	WP_114242776.1	WP_114242775.1
Streptomyces sp. Go-475	WP_114255097.1	WP_114255098.1
Marinitenerispora sediminis strain=TPS81	WP_114400211.1	WP_114400212.1
Streptomyces corynorhini	WP_114626095.1	WP_114626090.1
Micromonospora aurantiaca strain=110B	WP_013286647.1	WP_114920547.1
Staphylococcus saccharolyticus strain=NCTC11807	WP_115314166.1	WP_115314167.1
Streptomyces sp. M7	WP_115507358.1	WP_115507357.1
Streptomyces sp. M7	WP_055624995.1	WP_115509460.1
Streptomyces sp. CB09001	WP_061443597.1	WP_115743049.1
Streptomyces sp. CB09001	WP_115744195.1	WP_115744194.1
Thermomonospora umbrina	WP_245974719.1	WP_116021922.1
Thermomonospora umbrina	WP_116023049.1	WP_116023048.1
Thermomonospora umbrina	WP_116026043.1	WP_116026044.1
Amycolatopsis palatopharyngis	WP_116041231.1	WP_116041229.1
Amycolatopsis palatopharyngis	WP_116041251.1	WP_116041249.1
Asanoa ferruginea strain=NBRC	WP_116073514.1	WP_116073512.1
Kutzneria buriramensis	WP_116177172.1	WP_116177171.1
Kutzneria buriramensis	WP_246016019.1	WP_116178916.1
Kutzneria buriramensis	WP_116178951.1	WP_116178952.1
Kutzneria buriramensis	WP_116180680.1	WP_116180681.1
Streptomyces olivoreticuli	WP_116211873.1	WP_116211872.1
Streptomyces spongiicola strain=531S	WP_109293752.1	WP_116427086.1
Streptomyces sp. AcE210	WP_116500500.1	WP_116500502.1
Micromonospora sp. B006	WP_116506214.1	WP_116506213.1
Streptomyces sp. AcE210	WP_116509049.1	WP_116509047.1
Nocardiosis sp. TNDT3	WP_013155269.1	WP_117198246.1
Allorhizocola rhizosphaerae	WP_117209813.1	WP_117209812.1
Geodermatophilus sp. LHW52908	WP_117375887.1	WP_117376099.1
Micromonospora sp. MW-13	WP_117669219.1	WP_117669218.1

Streptomyces sp. CC0208	WP_118082540.1	WP_118082541.1
Photorhabdus sp. CRClA-P01	WP_118985878.1	WP_118985877.1
Streptomyces sporangiiformans	WP_119105152.1	WP_119105153.1
Micromonospora radialis	WP_119572476.1	WP_119572477.1
Bailinahaonella thermotolerans	WP_119924852.1	WP_119924851.1
Amycolatopsis panacis	WP_120026462.1	WP_120026463.1
Catellatospora citrea	WP_120316080.1	WP_120316081.1
Micromonospora globbae	WP_120327066.1	WP_120326771.1
Micromonospora tulbaghiaie strain=CNY-010	WP_120569626.1	WP_120569627.1
Micromonospora musae	WP_120682125.1	WP_120682127.1
Micromonospora musae strain=MS1-9	WP_120689804.1	WP_120689805.1
Streptomyces hungungensis	WP_120723490.1	WP_120723489.1
Micromonospora endolithica	WP_120731080.1	WP_120731262.1
Streptomyces klenkii	WP_120759148.1	WP_120759146.1
Micromonospora costii	WP_120781487.1	WP_120781486.1
Micromonospora pisi	WP_121160318.1	WP_121160319.1
Saccharothrix variisporea	WP_121229662.1	WP_121229664.1
Actinokineospora cianjurenensis	WP_121394613.1	WP_121394614.1
Micromonospora sp. M71	WP_121398735.1	WP_121398734.1
Streptomyces fungicidicus	WP_004922256.1	WP_121548931.1
Micromonospora sp. CV4	WP_121653756.1	WP_121653755.1
Micromonospora sp. BL4	WP_121653756.1	WP_121677805.1
Micromonospora sp. BL1	WP_121685260.1	WP_121685259.1
Streptomyces sp. E5N298	WP_076976334.1	WP_121700878.1
Streptomyces sp. E5N91	WP_121712212.1	WP_121712214.1
Streptomyces sp. E5N91	WP_121715898.1	WP_121715896.1
Streptomyces sp. E2N171	WP_048456510.1	WP_121720169.1
Streptomyces sp. E2N166	WP_121748947.1	WP_121748946.1
Streptomyces sp. E2N166	WP_121749198.1	WP_121749197.1
Streptomyces sp. S1	WP_121831483.1	WP_121831482.1
Streptomyces sp. S1	WP_121832940.1	WP_121832941.1
Streptomyces shenzhenensis	WP_121893553.1	WP_121893552.1
Streptomyces triticirhizae	WP_122185569.1	WP_122185570.1
Nocardia stercoris	WP_199742856.1	WP_122189133.1
Actinomadura harenae	WP_122195402.1	WP_122195401.1
Streptomyces sp. I5	WP_175446885.1	WP_122212972.1
Streptomyces sp. Tu	WP_122614441.1	WP_122614442.1
Streptomyces sp. Tu	WP_122616219.1	WP_122616218.1
Streptomyces sp. CJ	WP_250568901.1	WP_123082844.1
Micromonospora aurantiaca strain=ATCC	WP_123109326.1	WP_123109325.1
Micromonospora sp. PPF5-17	WP_123242886.1	WP_123242895.1
Streptomyces sp. PanSC9	WP_185091700.1	WP_123440886.1
Streptomyces sp. PanSC19	WP_123457063.1	WP_123457064.1
Streptomyces sp. ADI92-24	WP_123466905.1	WP_123466903.1
Streptomyces sp. 2132.2	WP_123517551.1	WP_123517553.1
Streptomyces sp. 840.1	WP_123524032.1	WP_123524031.1
Streptomyces sp. 840.1	WP_123529087.1	WP_123529089.1
Streptomyces sp. 840.1	WP_123531824.1	WP_123531822.1
Micromonospora sp. HM5-17	WP_123554299.1	WP_123554301.1
Micromonospora sp. HM5-17	WP_123561601.1	WP_123561603.1
Kitasatospora cineracea strain=DSM	WP_123563725.1	WP_123563726.1
Kitasatospora niigatensis	WP_123564145.1	WP_123564146.1
Saccharothrix sp. 6-C	WP_123741987.1	WP_123741986.1
Kitasatospora niigatensis	WP_123821150.1	WP_123821151.1
Streptomyces sp. TLI	WP_123963413.1	WP_123963412.1
Streptomyces sp. Ag109	WP_123976897.1	WP_123976898.1
Streptomyces sp. Ag109	WP_123977770.1	WP_123977771.1
Streptomyces sp. A2-16	WP_123990545.1	WP_123990544.1
Streptomyces sp. ADI98-10	WP_233436053.1	WP_124265852.1
Streptomyces sp. ADI96-02	WP_124270535.1	WP_124270536.1
Streptomyces sp. ADI96-15	WP_033952008.1	WP_124272857.1
Streptomyces sp. ADI93-02	WP_099177864.1	WP_124277447.1
Streptomyces sp. ADI93-02	WP_124278790.1	WP_124278791.1
Streptomyces sp. NL15-2K	WP_124436671.1	WP_124436672.1
Streptomyces sp. NL15-2K	WP_124440019.1	WP_124440018.1
Streptomyces sp. ADI95-17	WP_124721961.1	WP_124721960.1
Streptomyces sp. ADI95-17	WP_124723609.1	WP_124723610.1
Micromonospora inaquosa	WP_124772628.1	WP_124772693.1
Micromonospora inaquosa	WP_124776089.1	WP_124776087.1
Micromonospora ureilytica strain=LB19	WP_124815318.1	WP_124815316.1
Micromonospora arida	WP_124858863.1	WP_124858864.1
Micromonospora arida	WP_124861448.1	WP_124861445.1
Streptomyces sp. RP5T	WP_125190136.1	WP_125190128.1
Streptomyces sp. RP5T	WP_125193959.1	WP_125193960.1
Streptomyces griseofuscus strain=199	WP_037653387.1	WP_125209755.1
Streptomyces sp. WAC	WP_125494557.1	WP_125494558.1

<i>Streptomyces thermoviolaceus</i>	WP_125497133.1	WP_125497132.1
<i>Streptomyces</i> sp. WAC	WP_125509061.1	WP_125509059.1
<i>Streptomyces</i> sp. WAC	WP_125514616.1	WP_125514615.1
<i>Streptomyces</i> sp. WAC	WP_125524878.1	WP_125524879.1
<i>Streptomyces</i> sp. WAC	WP_125525194.1	WP_125525195.1
<i>Streptomyces</i> sp. Tu102	WP_229914763.1	WP_125527439.1
<i>Streptomyces</i> sp. WAC	WP_032920569.1	WP_125532186.1
<i>Streptomyces</i> sp. VITNK9	WP_192341333.1	WP_125536430.1
<i>Streptomyces</i> sp. WAC06273	WP_031022574.1	WP_125538230.1
<i>Lapidilactobacillus mulanensis</i>	WP_225417367.1	WP_125578831.1
<i>Streptomyces</i> sp. W1SF4	WP_241253730.1	WP_125595235.1
<i>Streptomyces</i> sp. WAC07061	WP_125602222.1	WP_125602225.1
<i>Streptomyces</i> sp. WAC07061	WP_125604356.1	WP_125604358.1
<i>Streptomyces</i> sp. WAC04770	WP_125614988.1	WP_125614985.1
<i>Streptomyces</i> sp. WAC04770	WP_018488939.1	WP_125616609.1
<i>Actinomadura</i> sp. WAC	WP_034517042.1	WP_125617880.1
<i>Streptomyces</i> sp. WAC	WP_125626636.1	WP_125626635.1
<i>Streptomyces</i> sp. H23	WP_134653694.1	WP_125628859.1
<i>Streptomyces</i> sp. WAC06614	WP_125640586.1	WP_125640589.1
<i>Streptomyces</i> sp. WAC06614	WP_125650142.1	WP_125650144.1
<i>Streptomyces</i> sp. WAC08241	WP_125662680.1	WP_125662683.1
<i>Streptomyces</i> sp. WAC08241	WP_125668324.1	WP_125668323.1
<i>Amycolatopsis</i> sp. WAC	WP_125737581.1	WP_125737582.1
<i>Streptomyces</i> sp. WAC01280	WP_125740676.1	WP_125740678.1
<i>Streptomyces</i> sp. WAC01280	WP_024758999.1	WP_125747832.1
<i>Streptomyces geysiriensis</i>	WP_086878133.1	WP_125772650.1
<i>Streptomyces</i> sp. WAC05458	WP_031022574.1	WP_125774073.1
<i>Streptomyces</i> sp. WAC07149	WP_125815159.1	WP_125815160.1
<i>Streptomyces</i> sp. WAC07149	WP_125815181.1	WP_125815182.1
<i>Streptomyces</i> sp. WAC07149	WP_125817957.1	WP_125817956.1
<i>Streptomyces</i> sp. W1SF4	WP_125602222.1	WP_125820056.1
<i>Streptomyces</i> sp. WAC	WP_125938071.1	WP_125938072.1
<i>Streptomyces</i> sp. WAC	WP_125939062.1	WP_125939063.1
<i>Streptomyces aquilus</i>	WP_126269602.1	WP_126269601.1
<i>Streptomyces</i> sp. BK042	WP_126274146.1	WP_126274147.1
<i>Delftia acidovorans</i>	WP_126312206.1	WP_126312207.1
<i>Streptomyces cyaneochromogenes</i>	WP_126394749.1	WP_126394751.1
<i>Streptomyces cyaneochromogenes</i>	WP_126395123.1	WP_126395124.1
<i>Streptomyces cyaneochromogenes</i>	WP_126395647.1	WP_126395646.1
<i>Dictyobacter aurantiacus</i>	WP_160145892.1	WP_126596805.1
<i>Dictyobacter aurantiacus</i>	WP_126602790.1	WP_126602788.1
<i>Dictyobacter alpinus</i>	WP_126627698.1	WP_126627697.1
<i>Dictyobacter alpinus</i>	WP_126628849.1	WP_126628848.1
<i>Embleya hyalina</i>	WP_126638620.1	WP_126638621.1
<i>Streptomyces</i> sp. WAC05374	WP_126884917.1	WP_126884918.1
<i>Streptomyces</i> sp. WAC	WP_126899582.1	WP_126899581.1
<i>Streptomyces</i> sp. WAC	WP_126899782.1	WP_126899783.1
<i>Streptomyces luteovorticillatus</i> strain=CGMCC	WP_126917069.1	WP_126917070.1
<i>Streptomyces griseoviridis</i> strain=K61	WP_127182399.1	WP_127175914.1
<i>Streptomyces griseoviridis</i> strain=K61	WP_127177166.1	WP_127177167.1
<i>Streptomyces</i> sp. WAC08401	WP_127434763.1	WP_127434762.1
<i>Streptomyces</i> sp. WAC05458	WP_019326887.1	WP_127436414.1
<i>Streptomyces vinaceusdrappus</i>	WP_019326887.1	WP_127438225.1
<i>Streptomyces</i> sp. WAC04189	WP_031022574.1	WP_127438570.1
<i>Streptomyces geysiriensis</i>	WP_031022574.1	WP_127441722.1
<i>Streptomyces</i> sp. WAC08452	WP_031022574.1	WP_127443915.1
<i>Streptomyces</i> sp. WAC08452	WP_019326887.1	WP_127444815.1
<i>Streptomyces</i> sp. San01	WP_127830234.1	WP_127830233.1
<i>Streptomyces</i> sp. San01	WP_127832824.1	WP_127832823.1
<i>Streptomyces</i> sp. beijingensis strain=ES4-1	WP_128175808.1	WP_128175810.1
<i>Streptomyces cavernae</i>	WP_128379334.1	WP_128379333.1
<i>Streptomyces cyaneus</i>	WP_128434717.1	WP_128434718.1
<i>Streptomyces cyaneus</i>	WP_164905120.1	WP_128437320.1
<i>Streptomyces inhibens</i>	WP_128512699.1	WP_128512700.1
<i>Streptomyces triticagri</i>	WP_233521763.1	WP_128557676.1
<i>Streptomyces triticagri</i>	WP_128558613.1	WP_128558612.1
<i>Streptomyces triticagri</i>	WP_128559485.1	WP_128559484.1
<i>Streptomyces murinus</i> strain=DSM	WP_128790635.1	WP_128790634.1
<i>Streptomyces</i> sp. MG	WP_128802957.1	WP_128802956.1
<i>Streptomyces</i> sp. S063	WP_069739084.1	WP_128818484.1
<i>Streptomyces lavendulae</i> subsp.	WP_128849742.1	WP_128849744.1
<i>Streptomyces roseicoloratus</i>	WP_128976624.1	WP_128976623.1
<i>Streptomyces</i> sp. M3	WP_099171225.1	WP_129260499.1
<i>Streptomyces</i> sp. M3	WP_099177864.1	WP_129264028.1
<i>Streptomyces</i> sp. TM32	WP_129281023.1	WP_129281022.1
<i>Streptomyces</i> sp. TM32	WP_129282708.1	WP_129282709.1

Streptomyces sp. GZWMJZ-114	WP_129287944.1	WP_129287945.1
Streptomyces sp. L2	WP_129308360.1	WP_129308361.1
Streptomyces sp. L2	WP_129308650.1	WP_129308651.1
Streptomyces sp. F001	WP_129797859.1	WP_129797858.1
Streptomyces sp. F001	WP_129800975.1	WP_129800976.1
Streptomyces albidoflavus strain=Ma1	WP_129812819.1	WP_129812817.1
Streptomyces albidoflavus strain=CGMCC	WP_129819353.1	WP_129819355.1
Streptomyces albidoflavus strain=CR46	WP_129862756.1	WP_129862757.1
Ktedonosporobacter rubrisoli	WP_129887962.1	WP_129887961.1
Ktedonosporobacter rubrisoli	WP_129892622.1	WP_129892621.1
Micromonospora kangleipakensis	WP_130337203.1	WP_130337201.1
Streptomyces sp. BK022	WP_130339064.1	WP_130339062.1
Nocardiosis sp. CNZ304	WP_130395408.1	WP_130395407.1
Micromonospora violae	WP_130400934.1	WP_130400935.1
Micromonospora violae	WP_130406886.1	WP_130406884.1
Streptomyces sp. BK239	WP_130437924.1	WP_130437925.1
Streptomyces sp. BK239	WP_130443013.1	WP_130443011.1
Krasilnikovia cinnamomea	WP_130510370.1	WP_130510371.1
Streptomyces tsukubensis strain=L20	WP_006345757.1	WP_130584695.1
Streptomyces netropsis	WP_130876635.1	WP_130876722.1
Verrucospora sp. NA02020	WP_131054095.1	WP_131054101.1
Micromonospora zingiberis	WP_131303148.1	WP_131303149.1
Staphylococcus warneri strain=G25	WP_131541437.1	WP_131541438.1
Streptomyces sp. COG20	WP_128840240.1	WP_131543631.1
Streptomyces sp. KM273126	WP_131559527.1	WP_131559525.1
Actinomadura roseirufa	WP_131737005.1	WP_131737006.1
Actinomadura roseirufa	WP_131738759.1	WP_131738760.1
Actinomadura fibrosa	WP_131757091.1	WP_131757090.1
Actinomadura fibrosa	WP_131759900.1	WP_131759899.1
Frankia symbiont of	WP_131784537.1	WP_131784536.1
Frankia symbiont of	WP_131786676.1	WP_131786679.1
Frankia symbiont of	WP_131786686.1	WP_131786685.1
Actinomadura sp. KC345	WP_243716588.1	WP_131875865.1
Actinomadura sp. KC345	WP_131883302.1	WP_131883303.1
Actinomadura rubrisoli	WP_131893028.1	WP_131893030.1
Actinomadura rubrisoli	WP_131893723.1	WP_131893721.1
Actinomadura rubrisoli	WP_131900641.1	WP_131900639.1
Actinomadura bangladeshensis	WP_131936493.1	WP_131936491.1
Actinomadura bangladeshensis	WP_131936815.1	WP_131936813.1
Actinomadura sp. GC306	WP_131949719.1	WP_131949720.1
Actinomadura sp. KC06	WP_131966084.1	WP_131966083.1
Actinomadura sp. 6K520	WP_131977338.1	WP_131977335.1
Actinomadura sp. 7K534	WP_132044904.1	WP_132044906.1
Actinocrispum wychmicini	WP_132113506.1	WP_132113504.1
Actinomadura sp. 7K507	WP_132148316.1	WP_132148314.1
Micromonospora sp. KC606	WP_132179407.1	WP_132179409.1
Micromonospora sp. KC606	WP_132184486.1	WP_132184487.1
Micromonospora sp. KC721	WP_132262619.1	WP_132262621.1
Micromonospora sp. KC721	WP_132264794.1	WP_132264796.1
Nonomurea longispora	WP_132332363.1	WP_132332362.1
Micromonospora sp. KC213	WP_132264794.1	WP_132335047.1
Micromonospora sp. KC213	WP_132336561.1	WP_132336559.1
Micromonospora sp. 15K316	WP_132347538.1	WP_132347540.1
Photorhabdus kharii subsp.	WP_132356070.1	WP_132356069.1
Micromonospora sp. KC723	WP_132387675.1	WP_132387677.1
Micromonospora sp. KC207	WP_132397860.1	WP_132397862.1
Pseudonocardia endophytica	WP_132430751.1	WP_132430752.1
Pseudonocardia endophytica	WP_132430915.1	WP_132430913.1
Nonomurea diastatica	WP_132517216.1	WP_132517214.1
Nonomurea mesophila	WP_132630443.1	WP_132630442.1
Streptomyces vinaceus strain=JCM	WP_189998650.1	WP_132760193.1
Streptomyces hainanensis	WP_132818641.1	WP_132818640.1
Streptomyces sp. BK205	WP_062240986.1	WP_132837437.1
Tamarichabitans halophyticus	WP_132875351.1	WP_132876126.1
Photorhabdus tasmaniensis	WP_242688624.1	WP_133813223.1
Labedaea rhizosphaerae	WP_133851942.1	WP_133851941.1
Streptomyces sp. BK208	WP_133887352.1	WP_133887351.1
Streptomyces sp. BK208	WP_133890048.1	WP_133890047.1
Actinophytocola oryzae	WP_133908935.1	WP_133908936.1
Streptomyces sp. 846.5	WP_133996028.1	WP_133996026.1
Streptomyces bluensis	WP_134027759.1	WP_134027761.1
Mycobacteroides salmoniphilum strain=DE	WP_134065552.1	WP_134065551.1
Mycobacteroides salmoniphilum strain=CCUG	WP_134086665.1	WP_134086664.1
Mycobacteroides salmoniphilum strain=CCUG	WP_134086665.1	WP_134207057.1
Streptomyces sp. H23	WP_134655752.1	WP_134655751.1
Streptomyces sp. S501	WP_033248917.1	WP_134664616.1

Amycolatopsis sp. CFH	WP_051729294.1	WP_134668720.1
Saccharomonospora xinjiangensis strain=31sw	WP_134714643.1	WP_134714645.1
Amycolatopsis nivea	WP_051729294.1	WP_134728117.1
Streptomyces sp. MZ04	WP_135329920.1	WP_135329921.1
Streptomyces sp. MZ04	WP_245238837.1	WP_135331620.1
Streptomyces palmae	WP_135340789.1	WP_135340788.1
Streptomyces palmae	WP_135341669.1	WP_135341668.1
Streptomyces bauhiniae	WP_130339064.1	WP_135787859.1
Streptomyces griseoluteus	WP_130339064.1	WP_135792021.1
Streptomyces griseoluteus	WP_135792285.1	WP_135792286.1
Streptomyces sp. CRPSP2-6A1	WP_037653387.1	WP_136100703.1
Streptomyces sp. A0958	WP_136202484.1	WP_136202485.1
Streptomyces sp. A0958	WP_136203446.1	WP_136203447.1
Streptomyces sp. A1136	WP_136214077.1	WP_136214078.1
Streptomyces sp. A1136	WP_136215367.1	WP_136215366.1
Streptomyces sp. A1136	WP_136216020.1	WP_136216021.1
Streptomyces sp. A1547	WP_136226549.1	WP_136226550.1
Streptomyces sp. A0592	WP_206309831.1	WP_136228654.1
Streptomyces sp. A0592	WP_136231059.1	WP_136231060.1
Streptomyces sp. McG7	WP_019526893.1	WP_136237292.1
Streptomyces sp. A1277	WP_136315127.1	WP_136315126.1
Streptomyces sp. A1277	WP_136318374.1	WP_136318375.1
Streptomyces sp. A0642	WP_136326871.1	WP_136326872.1
Streptomyces sp. A0642	WP_136330634.1	WP_136330633.1
Streptomyces sp. BPSDS2	WP_137233345.1	WP_137233346.1
Streptomyces galbus strain=JCM	WP_137300846.1	WP_137300847.1
Streptomyces lasalocidi	WP_137310037.1	WP_137310038.1
Gandjariella thermophila	WP_137812875.1	WP_137812874.1
Gandjariella thermophila	WP_225978476.1	WP_137814812.1
Gandjariella thermophila	WP_137815058.1	WP_137815126.1
Streptomyces sp. SGAir0924	WP_086878133.1	WP_137961521.1
Streptomyces montanus	WP_138046985.1	WP_138046984.1
Streptomyces marianii	WP_138053169.1	WP_138053170.1
Streptomyces marianii	WP_138056710.1	WP_138056709.1
Nonomurea sp. KC401	WP_138200424.1	WP_138200423.1
Saccharomonospora piscinae	WP_138381504.1	WP_138381505.1
Nostoc sp. PA-18-2419	WP_138500853.1	WP_138500855.1
Nonomurea turkmeniaca	WP_138672224.1	WP_138672230.1
Nonomurea zeae	WP_170246614.1	WP_138689348.1
Modestobacter excelsi	WP_246078525.1	WP_138732795.1
Modestobacter altitudinis	WP_138760059.1	WP_138760058.1
Streptomyces sp. DASNCL29	WP_138916868.1	WP_138916869.1
Micromonospora orduensis	WP_139582323.1	WP_139582325.1
Photorhabdus luminescens subsp.	WP_139654589.1	WP_139654588.1
Streptomyces mimosae	WP_139666200.1	WP_139666201.1
Thermomonospora catenisporea	WP_140179309.1	WP_140179311.1
Streptomyces griseorubiginosus strain=BTU6	WP_141203706.1	WP_141203707.1
Streptomyces griseorubiginosus strain=BTU6	WP_062242515.1	WP_141206042.1
Streptomyces griseorubiginosus strain=BTU6	WP_141208233.1	WP_141208232.1
Streptomyces gardneri strain=JCM	WP_141292396.1	WP_141292395.1
Streptomyces gardneri strain=JCM	WP_229917567.1	WP_141301191.1
Streptomyces spinoverrucosus strain=JCM	WP_141310956.1	WP_141310955.1
Streptomyces spinoverrucosus strain=JCM	WP_141313561.1	WP_141313560.1
Streptomyces spinoverrucosus strain=JCM	WP_141314473.1	WP_141314471.1
Streptomyces sp. 6-11-2	WP_141360115.1	WP_141360116.1
Streptomyces ipomoeae	WP_141574218.1	WP_141574217.1
Actinomadura sp. WMMA1423	WP_141576736.1	WP_141576735.1
Actinomadura sp. WMMA1423	WP_141586980.1	WP_141579099.1
Actinomadura sp. WMMA1423	WP_141585747.1	WP_141585745.1
Nocardia bhagyanarayanae	WP_141810632.1	WP_141810633.1
Micromonospora sp. A202	WP_141909553.1	WP_141912696.1
Actinoallomurus bryophytorum	WP_141960628.1	WP_141960626.1
Saccharothrix saharensis	WP_141983139.1	WP_141983138.1
Amycolatopsis cihanbeyliensis	WP_141995448.1	WP_141995447.1
Streptomyces sp. SLBN-31	WP_142142237.1	WP_142142236.1
Streptomyces sp. SLBN-134	WP_142167773.1	WP_142167774.1
Streptomyces calvus strain=JCM	WP_142191738.1	WP_142191739.1
Streptomyces sp. SLBN-118	WP_142212319.1	WP_142212318.1
Streptomyces sp. SLBN-118	WP_142212346.1	WP_142212345.1
Streptomyces sp. SLBN-118	WP_142213056.1	WP_142213055.1
Streptomyces cavourensis strain=JCM	WP_114932167.1	WP_142229551.1
Thermopolyspora flexuosa strain=JCM	WP_142258115.1	WP_142258116.1
Streptomyces sp. SLBN-115	WP_028806148.1	WP_142269139.1
Streptomyces sp. SLBN-115	WP_142268398.1	WP_142269842.1
Geodermatophilus aqueductus	WP_142457132.1	WP_142457131.1
Microbisporea hainanensis	WP_142617084.1	WP_142617085.1

Asanoa ishikariensis	WP_090801855.1	WP_143050020.1
Streptomyces sp. CB03234	WP_143608579.1	WP_143608583.1
Streptomyces sp. 130	WP_143620281.1	WP_143620283.1
Streptomyces alkaliphilus strain=IF17	WP_143621340.1	WP_143621337.1
Streptomyces sp. RLB1-9	WP_054237210.1	WP_143627296.1
Streptomyces sp. 1-11	WP_143630951.1	WP_143630952.1
Streptomyces alkaliterrae	WP_228449519.1	WP_143646041.1
Streptomyces platensis	WP_085922255.1	WP_143658798.1
Catellatospora sichuanensis	WP_144121436.1	WP_144121437.1
Streptomyces sp. SAJ15	WP_144382243.1	WP_144382242.1
Streptomyces sp. SAJ15	WP_260868042.1	WP_144386837.1
Amycolatopsis rhizosphaerae	WP_144590985.1	WP_144590986.1
Amycolatopsis acidicola	WP_144748138.1	WP_144748139.1
Streptomyces sp. HF10	WP_145485853.1	WP_145485854.1
Streptomyces sp. CFMR	WP_018488939.1	WP_145499183.1
Streptomyces brevispora	WP_145767880.1	WP_145767881.1
Streptomyces brevispora	WP_145767977.1	WP_145767976.1
Micromonospora taraxaci	WP_145780252.1	WP_145780253.1
Micromonospora taraxaci	WP_145781505.1	WP_145781507.1
Kitasatospora atroaurantiaca	WP_145791433.1	WP_145791430.1
Micromonospora sagamiensis strain=JCM	WP_145818208.1	WP_145818206.1
Micromonospora sagamiensis strain=JCM	WP_091462876.1	WP_145818961.1
Streptomyces sp. T12	WP_145825860.1	WP_145825861.1
Streptomyces sp. T12	WP_145830566.1	WP_145830567.1
Streptomyces capillispiralis strain=JCM	WP_167531889.1	WP_145870550.1
Streptomyces capillispiralis strain=JCM	WP_145870906.1	WP_145870905.1
Streptomyces sp. BK340	WP_145875966.1	WP_145875967.1
Streptomyces sp. BK340	WP_145885175.1	WP_145885174.1
Kitasatospora viridis	WP_145903334.1	WP_145903335.1
Micromonospora sp. HM134	WP_145919797.1	WP_145919798.1
Streptomyces misionensis strain=66	WP_146463428.1	WP_146463426.1
Streptomyces misionensis strain=66	WP_146466907.1	WP_146466906.1
Streptomyces qinzhouensis	WP_146482919.1	WP_146482920.1
Streptomyces sp. PsTaAH-130	WP_243878016.1	WP_146609828.1
Streptomyces sp. ISID311	WP_093481892.1	WP_147245380.1
Marinitenerispora sediminis	WP_233515556.1	WP_147281106.1
Nocardia pseudobrasiliensis	WP_067999258.1	WP_147288138.1
Streptomyces sp. wa22	WP_147960596.1	WP_147960595.1
Streptomyces sp. wa22	WP_147964244.1	WP_147964243.1
Streptomyces sp. col6	WP_147971641.1	WP_147971642.1
Streptomyces sp. ms191	WP_147981408.1	WP_147981407.1
Streptomyces sp. gb1	WP_147983109.1	WP_147983108.1
Streptomyces sp. gb1	WP_099177864.1	WP_147983694.1
Streptomyces sp. t39	WP_147992355.1	WP_147992354.1
Streptomyces sp. uw30	WP_147993786.1	WP_147993787.1
Streptomyces sp. uw30	WP_147994510.1	WP_147994511.1
Streptomyces sp. adm13	WP_148003503.1	WP_148003504.1
Streptomyces sp. me109	WP_148009391.1	WP_148009390.1
Streptomyces sp. me109	WP_148010172.1	WP_148010171.1
Streptomyces sp. or43	WP_148016255.1	WP_148016254.1
Streptomyces sp. or43	WP_148018246.1	WP_148018247.1
Streptomyces sp. or43	WP_148021793.1	WP_148021792.1
Streptomyces sp. SUK	WP_153813958.1	WP_148025026.1
Streptomyces lavendulae	WP_241670902.1	WP_148026727.1
Streptomyces sp. TLI	WP_260327433.1	WP_148096491.1
Actinomadura syzygii	WP_148349757.1	WP_148349758.1
Micromonospora sp. AP08	WP_148425427.1	WP_148425428.1
Micromonospora sp. AP08	WP_148426615.1	WP_148426614.1
Nonomurea sp. PA05	WP_148438170.1	WP_148438169.1
Micromonospora sp. WP24	WP_148482152.1	WP_148482153.1
Streptomyces sp. CB01881	WP_148641379.1	WP_148641380.1
Streptomyces sp. CB01881	WP_148646230.1	WP_148646229.1
Actinomadura decatromicini	WP_148767276.1	WP_148767275.1
Micromonospora sp. MP36	WP_148799482.1	WP_148799480.1
Streptomyces sp. sk2.1	WP_148832703.1	WP_148832705.1
Streptomyces sp. sk2.1	WP_148835999.1	WP_148835998.1
Streptomyces parvus strain=C05	WP_065482189.1	WP_148902330.1
Streptomyces sp. TRM49041	WP_149179179.1	WP_149179180.1
Streptomyces sp. TRM49041	WP_149183033.1	WP_149183034.1
Actinomadura sp. K4S16	WP_149256852.1	WP_149256853.1
Actinomadura sp. K4S16	WP_149256982.1	WP_149256981.1
Streptomyces marokkonensis	WP_149550133.1	WP_149550132.1
Streptomyces marokkonensis	WP_149552789.1	WP_149552788.1
Streptomyces cacaoi strain=OABC16	WP_149561864.1	WP_149561865.1
Streptomyces tailanensis	WP_149824364.1	WP_149824366.1
Streptomyces tailanensis	WP_149828764.1	WP_149828765.1

<i>Streptomyces tailanensis</i>	WP_149829895.1	WP_149829896.1
<i>Streptomyces tendae</i> strain=139	WP_150155855.1	WP_150155856.1
<i>Streptomyces venezuelae</i>	WP_071892241.1	WP_150162374.1
<i>Streptomyces venezuelae</i>	WP_150162919.1	WP_150162918.1
<i>Streptomyces</i> sp. SID339	WP_150163893.1	WP_150163892.1
<i>Streptomyces venezuelae</i> strain=ATCC	WP_150181778.1	WP_150181777.1
<i>Streptomyces venezuelae</i> strain=ATCC	WP_150211420.1	WP_150211421.1
<i>Streptomyces venezuelae</i> strain=ATCC	WP_150213302.1	WP_150213300.1
<i>Streptomyces filamentosus</i> strain=JCM	WP_150235358.1	WP_150235357.1
<i>Streptomyces albofaciens</i>	WP_150244925.1	WP_150244928.1
<i>Nocardiosis deserti</i>	WP_150253963.1	WP_150253962.1
<i>Streptomyces venezuelae</i> strain=ATCC	WP_150255519.1	WP_150255517.1
<i>Streptomyces venezuelae</i> strain=ATCC	WP_223834581.1	WP_150265320.1
<i>Nocardia colli</i>	WP_223885192.1	WP_150403202.1
<i>Streptomyces galilaeus</i> strain=JCM	WP_150469827.1	WP_150469828.1
<i>Streptomyces coeruleorubidus</i> strain=JCM	WP_150483079.1	WP_150483080.1
<i>Streptomyces nitrosporeus</i> strain=JCM	WP_150487670.1	WP_150487669.1
<i>Streptomyces nitrosporeus</i> strain=JCM	WP_150491408.1	WP_150491409.1
<i>Streptomyces chartreusis</i> strain=JCM	WP_125525194.1	WP_150498506.1
<i>Streptomyces</i> sp. Tu102	WP_125524878.1	WP_150499755.1
<i>Streptomyces venezuelae</i> strain=ATCC	WP_071892241.1	WP_150502076.1
<i>Streptomyces chartreusis</i> strain=JCM	WP_107905484.1	WP_150502529.1
<i>Streptomyces spectabilis</i> strain=JCM	WP_150511642.1	WP_150511641.1
<i>Streptomyces subbrutillus</i> strain=JCM	WP_150521138.1	WP_150521139.1
<i>Micromonospora aurantiaca</i> strain=ALFB5	WP_151012618.1	WP_151012616.1
<i>Micromonospora aurantiaca</i> strain=ALFB5	WP_013286647.1	WP_151015611.1
<i>Micromonospora</i> sp. AMSO12t	WP_151456460.1	WP_151456461.1
<i>Micromonospora</i> sp. AMSO31t	WP_151463704.1	WP_151463703.1
<i>Streptomyces triticiradicis</i>	WP_151470286.1	WP_151470285.1
<i>Streptomyces triticiradicis</i>	WP_151470299.1	WP_151470298.1
<i>Streptomyces triticiradicis</i>	WP_151472907.1	WP_151472906.1
<i>Micromonospora</i> sp. ALFpr18c	WP_151491224.1	WP_151491225.1
<i>Micromonospora noduli</i> strain=ALFpr19a	WP_151496888.1	WP_151496886.1
<i>Micromonospora noduli</i> strain=ALFpr19a	WP_112587248.1	WP_151497372.1
<i>Micromonospora</i> sp. AMSO1212t	WP_151500701.1	WP_151500702.1
<i>Actinomadura montaniterrae</i>	WP_151538092.1	WP_151538078.1
<i>Actinomadura montaniterrae</i>	WP_225991831.1	WP_151541927.1
<i>Actinomadura rudentiformis</i>	WP_151565834.1	WP_151565835.1
<i>Streptomyces</i> sp. SS1-1	WP_151785927.1	WP_151785928.1
<i>Streptomyces phaeolivaceus</i>	WP_152170392.1	WP_152170391.1
<i>Streptomyces mobaraensis</i> strain=US-43	WP_152263811.1	WP_152263812.1
<i>Nocardiosis potens</i>	WP_017596465.1	WP_152523152.1
<i>Streptomyces spongiae</i>	WP_152776070.1	WP_152776069.1
<i>Streptomyces phyllanthi</i>	WP_152781321.1	WP_152781323.1
<i>Streptomyces acidicola</i>	WP_152861110.1	WP_152861109.1
<i>Streptomyces</i> sp. SYP-A7193	WP_153177960.1	WP_153177961.1
<i>Streptomyces</i> sp. SYP-A7193	WP_007389922.1	WP_153182491.1
<i>Streptomyces fagopyri</i>	WP_153287540.1	WP_153287539.1
<i>Streptomyces fagopyri</i>	WP_153289590.1	WP_153289589.1
<i>Nocardia</i> sp. SYP-A9097	WP_153807015.1	WP_153807014.1
<i>Micromonospora terminaliae</i>	WP_154227277.1	WP_154227276.1
<i>Amycolatopsis pithecellobii</i>	WP_154756759.1	WP_154756758.1
<i>Micromonospora palomenae</i>	WP_170285275.1	WP_154936512.1
<i>Micromonospora palomenae</i>	WP_154936426.1	WP_154938701.1
<i>Streptomyces taklimakanensis</i>	WP_155071892.1	WP_155071891.1
<i>Streptomyces taklimakanensis</i>	WP_155074180.1	WP_155072797.1
<i>Micromonospora</i> sp. CP22	WP_155220234.1	WP_155220236.1
<i>Salinispora cortesiana</i>	WP_025617617.1	WP_155251559.1
<i>Salinispora fenicalii</i>	WP_188116063.1	WP_155255780.1
<i>Micromonospora</i> sp. WMMC415	WP_155331894.1	WP_155331895.1
<i>Catellatospora vulcania</i>	WP_155374711.1	WP_155374712.1
<i>Catellatospora paridis</i>	WP_155386714.1	WP_155386713.1
<i>Actinomadura</i> sp. NEAU-AAG7	WP_156214142.1	WP_156214143.1
<i>Actinomadura litoris</i>	WP_156217180.1	WP_156217181.1
<i>Streptomyces ficellus</i>	WP_156691295.1	WP_156691294.1
<i>Nonomuraea typhae</i>	WP_246266817.1	WP_157245971.1
<i>Nonomuraea typhae</i>	WP_157254571.1	WP_157254640.1
<i>Nocardia terrae</i>	WP_157390918.1	WP_157390919.1
<i>Kibdelosporangium</i> sp. MJ126-NF4	WP_042191460.1	WP_157528722.1
<i>Frankia inefficax</i>	WP_013425862.1	WP_157735500.1
<i>Laceyella sacchari</i>	WP_132221331.1	WP_158283288.1
<i>Methylomusa anaerophila</i>	WP_126307985.1	WP_158618690.1
<i>Saccharothrix deserti</i>	WP_158848663.1	WP_158848665.1
<i>Amycolatopsis anabasis</i>	WP_158884910.1	WP_158884908.1
<i>Streptomyces lateritius</i>	WP_189602561.1	WP_158988099.1
<i>Streptomyces lateritius</i>	WP_158988524.1	WP_158988523.1

Streptomyces tendae strain=UTMC	WP_159328470.1	WP_159328471.1
Streptomyces caniferus	WP_159473871.1	WP_159473868.1
Streptomyces caniferus	WP_159478719.1	WP_159478716.1
Streptomyces libani subsp.	WP_109887868.1	WP_159490936.1
Streptomyces sp. GS7	WP_159505120.1	WP_159505121.1
Streptomyces sp. Tu	WP_159529846.1	WP_159529848.1
Streptomyces sp. Tu	WP_159538148.1	WP_159538146.1
Streptomyces sp. Tu	WP_159538178.1	WP_159538180.1
Streptomyces mexicanus strain=Marseille-Q0842	WP_159661994.1	WP_159661993.1
Streptomyces mexicanus strain=Marseille-Q0842	WP_159663618.1	WP_159663620.1
Streptomyces sp. Tu	WP_159682378.1	WP_159682377.1
Streptomyces sp. HF10	WP_159699921.1	WP_159699918.1
Streptomyces tubercidicus	WP_159746361.1	WP_159746362.1
Streptomyces tubercidicus	WP_159748644.1	WP_159748645.1
Streptomyces sp. HM190	WP_159768434.1	WP_159768437.1
Streptomyces sp. NHF165	WP_030874476.1	WP_159789036.1
Nocardia sp. CY41	WP_159848012.1	WP_159848015.1
Rathayibacter sp. VKM	WP_159907406.1	WP_159907408.1
Nocardioopsis sp. FR26	WP_160049992.1	WP_159943633.1
Streptomyces sp. BA2	WP_160502148.1	WP_160502149.1
Streptomyces sp. BA2	WP_202122577.1	WP_160507967.1
Amycolatopsis sp. SID8362	WP_160697638.1	WP_160697637.1
Streptomyces sp. HUCO-GS316	WP_161066589.1	WP_161066588.1
Streptomyces sp. HUCO-GS316	WP_202425755.1	WP_161067909.1
Actinomadura rayongensis	WP_161101230.1	WP_161101231.1
Actinomadura rayongensis	WP_161106078.1	WP_161106077.1
Actinomadura rayongensis	WP_161106409.1	WP_161106410.1
Nocardioopsis alba strain=SID5840	WP_161110395.1	WP_161110396.1
Streptomyces sp. SID4982	WP_161148505.1	WP_161148504.1
Streptomyces sp. SID4985	WP_161180910.1	WP_161180909.1
Streptomyces sp. SID2999	WP_161190151.1	WP_161190152.1
Streptomyces sp. SID3915	WP_161197420.1	WP_161197419.1
Streptomyces sp. SID1328	WP_161204293.1	WP_161204292.1
Streptomyces sp. SID2563	WP_161210564.1	WP_161210565.1
Streptomyces sp. SID2563	WP_161212763.1	WP_161212762.1
Streptomyces sp. SID8352	WP_161227971.1	WP_161227970.1
Streptomyces sp. SID2888	WP_150478232.1	WP_161239947.1
Streptomyces sp. SID2119	WP_161263857.1	WP_161263858.1
Streptomyces sp. SID8374	WP_161280649.1	WP_161280648.1
Streptomyces sp. SID161	WP_161297626.1	WP_161297627.1
Streptomyces sp. SID5789	WP_161328193.1	WP_161328192.1
Streptomyces sp. SID486	WP_161297626.1	WP_161332912.1
Streptomyces sp. SID5606	WP_064732208.1	WP_161341991.1
Streptomyces sp. SID5643	WP_161366023.1	WP_161366024.1
Streptomyces sp. RK23	WP_167308249.1	WP_161378582.1
Streptomyces yatensis strain=DSM	WP_211123038.1	WP_161563367.1
Streptacidiphilus jiangxiensis	WP_042454702.1	WP_161791316.1
Tengunoibacter tsumagoiensis	WP_161975583.1	WP_161975582.1
Dictyobacter kobayashii	WP_126551648.1	WP_161977431.1
Phytoactinopolyspora mesophila	WP_162449572.1	WP_162449573.1
Streptomyces sp. ICC1	WP_112447600.1	WP_162688489.1
Streptomyces sp. I5	WP_199218562.1	WP_163041662.1
Actinomadura bangladeshensis strain=SID10258	WP_163057843.1	WP_163057841.1
Actinomadura bangladeshensis strain=SID10258	WP_239067383.1	WP_163058962.1
Fodinicola acaciae	WP_163507024.1	WP_163507023.1
Pyxidicoccus trucidator	WP_164016412.1	WP_164016414.1
Streptomyces coelicoflavus strain=SID14172	WP_087789537.1	WP_164140188.1
Streptomyces coelicoflavus strain=SID14172	WP_164141212.1	WP_164141210.1
Streptomyces coelicoflavus strain=SID14172	WP_164142652.1	WP_164142651.1
Streptomyces sp. 604F	WP_033952008.1	WP_164179765.1
Streptomyces bauhiniiae strain=SID7754	WP_164193204.1	WP_164193201.1
Streptomyces anulatus strain=SID9598	WP_164217722.1	WP_164217719.1
Streptomyces cyaneofuscatus strain=SID10855	WP_164239016.1	WP_164239018.1
Streptomyces coelicoflavus strain=SID14163	WP_164246430.1	WP_164246429.1
Streptomyces coelicoflavus strain=SID14163	WP_164248100.1	WP_164248103.1
Streptomyces rochei strain=SID8161	WP_019326887.1	WP_164288174.1
Streptomyces rochei strain=SID8161	WP_203614059.1	WP_164289359.1
Streptomyces sp. SID11385	WP_164291522.1	WP_164291521.1
Streptomyces sp. SID13588	WP_203674380.1	WP_164296350.1
Streptomyces sp. SID12501	WP_164316087.1	WP_164316086.1
Streptomyces sp. S12	WP_164442018.1	WP_164337809.1
Streptomyces sp. OM5714	WP_153177960.1	WP_164383244.1
Streptomyces sp. OM5714	WP_164387087.1	WP_164387086.1
Streptomyces sp. SID9727	WP_164404360.1	WP_164404359.1
Streptomyces sp. SS06011	WP_222514322.1	WP_164419096.1
Streptomyces sp. SS06011	WP_164419751.1	WP_164419752.1

Streptomyces sp. SID9913	WP_164442018.1	WP_164442017.1
Streptomyces tendae strain=VITAKN	WP_167308249.1	WP_164459790.1
Streptomyces sp. SID14515	WP_164616396.1	WP_164616395.1
Streptomyces sp. SID9124	WP_164634852.1	WP_164634877.1
Modestobacter sp. KNN46-3	WP_241176062.1	WP_164702725.1
Streptomyces scabichelini	WP_165263515.1	WP_165263516.1
Streptomyces boncukensis	WP_206441616.1	WP_165298627.1
Streptomyces boncukensis	WP_165299957.1	WP_165299958.1
Streptomyces ureilyticus	WP_165340506.1	WP_165340505.1
Streptomyces ureilyticus	WP_165345028.1	WP_165345027.1
Actinopolyspora sp. BKK2	WP_242687707.1	WP_165633801.1
Streptomyces sp. KO7888	WP_007389922.1	WP_165687632.1
Frankia canadensis	WP_101830070.1	WP_165818212.1
Streptomyces sp. YIM	WP_165984168.1	WP_165984167.1
Streptomyces sp. JB150	WP_165995227.1	WP_165995225.1
Apibacter sp. B2966	WP_166004750.1	WP_166004752.1
Phytoactinopolyspora limicola strain=HAJB-30	WP_246222641.1	WP_166354896.1
Catellatospora methionotrophica strain=NBRC	WP_166382497.1	WP_166382495.1
Micromonospora chalcea strain=N18	WP_262419428.1	WP_166455922.1
Streptomyces sp. VN1	WP_166625242.1	WP_166625241.1
Modestobacter marinus	WP_166756069.1	WP_166754228.1
Streptomyces liangshanensis strain=QMT-12	WP_208298549.1	WP_167024699.1
Streptomyces xanthochromogenes	WP_161244447.1	WP_167153301.1
Mesorhizobium helmanticense	WP_245437225.1	WP_167434547.1
Nocardia brasiliensis strain=AUSMDU00024985	WP_167466294.1	WP_167461247.1
Nocardia brasiliensis strain=AUSMDU00024985	WP_167462335.1	WP_167462336.1
Nocardia arthritidis strain=AUSMDU00012717	WP_167473076.1	WP_167473075.1
Nocardia arthritidis strain=AUSMDU00012717	WP_167476512.1	WP_167476511.1
Nocardia terpenica strain=AUSMDU00012715	WP_167485614.1	WP_167485615.1
Nocardia terpenica strain=AUSMDU00012715	WP_167485798.1	WP_167485797.1
Streptomyces viridodiataticus	WP_266544412.1	WP_167742636.1
Streptomyces sp. 2BBP-J2	WP_093764049.1	WP_167744081.1
Streptomyces sp. SBST2-5	WP_167990015.1	WP_167990014.1
Micromonospora sp. HSS6-12	WP_168001713.1	WP_168001714.1
Planosporangium flavigriseum strain=NBRC	WP_168079964.1	WP_168079963.1
Planosporangium mesophilum	WP_168115852.1	WP_168115851.1
Streptomyces thermoviolaceus	WP_168132039.1	WP_168132040.1
Streptomyces galbus strain=I339	WP_168372031.1	WP_168372032.1
Streptomyces sp. RPA4-5	WP_085923414.1	WP_168477797.1
Streptomyces sp. RPA4-5	WP_168478849.1	WP_168478848.1
Streptomyces sp. RPA4-2	WP_168529083.1	WP_168529084.1
Streptomyces physcomitrii	WP_210430380.1	WP_168539917.1
Streptomyces sp. R302	WP_206325924.1	WP_169089042.1
Streptomyces sp. HNM0575	WP_206322633.1	WP_169136276.1
Streptomyces sp. GMY02	WP_009189295.1	WP_169439434.1
Streptomyces sp. HNM0574	WP_206323875.1	WP_169443022.1
Streptomyces sp. PKU-MA01144	WP_017948993.1	WP_170813344.1
Streptomyces morookaense	WP_171078909.1	WP_171078758.1
Streptomyces morookaense	WP_171079282.1	WP_171079283.1
Streptomyces morookaense	WP_171081940.1	WP_171081942.1
Streptomyces gossypisoli	WP_197972293.1	WP_171108193.1
Streptomyces gossypisoli	WP_171115565.1	WP_171115564.1
Streptomyces sp. S3	WP_171141337.1	WP_171141338.1
Streptomyces sp. S3	WP_171146481.1	WP_171146482.1
Flexivirga aerilata	WP_212755279.1	WP_171152344.1
Streptomyces sp. I05A-00742	WP_212764256.1	WP_171166008.1
Streptomyces sp. I05A-00742	WP_171168724.1	WP_171168726.1
Paenibacillus phytohabitans strain=LMG	WP_171717784.1	WP_171717785.1
Streptomyces griseofuscus strain=199	WP_125212812.1	WP_172624370.1
Kibdelosporangium persicum	WP_173134616.1	WP_173134612.1
Paenibacillus tritici	WP_173139927.1	WP_173139925.1
Streptomyces sp. CWH03	WP_173261898.1	WP_173261901.1
Streptomyces fulvorobeus	WP_173316616.1	WP_173316617.1
Micromonospora maritima	WP_174530268.1	WP_174530269.1
Micromonospora chalcea	WP_174536982.1	WP_174536981.1
Streptomyces samsunensis strain=SA31	WP_174885060.1	WP_174885061.1
Candidatus Frankia nodulisporulans	WP_163549377.1	WP_175084283.1
Paraburkholderia caffeinitolerans	WP_175197137.1	WP_175197138.1
Streptomyces sp. TRM64462	WP_175410020.1	WP_175410021.1
Streptomyces hawaiiensis	WP_175433906.1	WP_175433907.1
Streptomyces hawaiiensis	WP_175434054.1	WP_175434055.1
Streptomyces sp. CAI-24	WP_217689166.1	WP_175451492.1
Streptomyces sp. KAI	WP_217684964.1	WP_175463094.1
Streptomyces sp. KAI-26	WP_217689166.1	WP_175513483.1
Streptomyces sp. CAI-85	WP_175521098.1	WP_175521099.1
Streptomyces sp. CAI-155	WP_217689166.1	WP_175536986.1

Nonomuraea montanisoli	WP_175591912.1	WP_175591913.1
Nonomuraea rhodomycinica	WP_175599160.1	WP_175599159.1
Verrucospora sp. NA02020	WP_131057750.1	WP_176092684.1
Streptomyces sp. NA04227	WP_176096748.1	WP_176096750.1
Streptomyces sp. NA02536	WP_004922256.1	WP_176119037.1
Streptomyces sp. NA03103	WP_125628858.1	WP_176153823.1
Amycolatopsis sp. Hca4	WP_176176748.1	WP_176176749.1
Streptomyces sp. NA02950	WP_176179940.1	WP_176179941.1
Kitasatospora sp. NA04385	WP_176190095.1	WP_176190096.1
Kitasatospora sp. NA04385	WP_176191890.1	WP_176191891.1
Streptomyces sp. CAI-17	WP_176395821.1	WP_176395822.1
Streptomyces chartreusis strain=NA02069	WP_107902708.1	WP_176575509.1
Streptomyces sp. Ncost-T6T-1	WP_093811925.1	WP_176711186.1
Streptomyces sp. DconLS	WP_093681164.1	WP_176736154.1
Amycolatopsis mediterranei strain=HP-130	WP_013227255.1	WP_176742108.1
Streptomyces rectiverticillatus	WP_179079816.1	WP_179079817.1
Streptomyces rectiverticillatus	WP_179081681.1	WP_179081682.1
Streptomyces sp. BR123	WP_179174084.1	WP_179174083.1
Streptomyces sp. 2R	WP_031124558.1	WP_179280715.1
Actinopolyspora biskrensis	WP_179537234.1	WP_179537235.1
Spinactinospora alkalitolerans	WP_179641629.1	WP_179641630.1
Amycolatopsis endophytica	WP_179775604.1	WP_179775605.1
Micromonospora jinlongensis	WP_218907406.1	WP_179779764.1
Actinomadura citrea strain=JCM	WP_179834171.1	WP_179834172.1
Actinomadura citrea strain=JCM	WP_179835412.1	WP_179835411.1
Actinomadura citrea	WP_179837912.1	WP_179837913.1
Actinomadura luteofluorescens	WP_179842412.1	WP_179842411.1
Actinomadura luteofluorescens	WP_179842460.1	WP_179842459.1
Streptomyces sp. Rer75	WP_179937478.1	WP_179937477.1
Salinispora sp. H7-4	WP_218941259.1	WP_180196951.1
Delftia acidovorans strain=B804	WP_180317316.1	WP_180317317.1
Streptomyces sp. NEAU-sy36	WP_180330497.1	WP_180330498.1
Staphylococcus haemolyticus strain=SH	WP_180552055.1	WP_180552054.1
Mycobacteroides sp. LB1	WP_180747735.1	WP_180747734.1
Clostridium diolis strain=WST	WP_106884491.1	WP_181246099.1
Streptomyces alkaliterrae strain=OF3	WP_228449519.1	WP_181354603.1
Streptomyces sp. WAC00263	WP_054237210.1	WP_181650708.1
Streptomyces himalayensis subsp.	WP_181656945.1	WP_181656946.1
Nocardia gipuzkoensis	WP_181723859.1	WP_181723858.1
Streptomyces sp. PIP175	WP_181785808.1	WP_181785809.1
Streptomyces sp. WELS2	WP_181795443.1	WP_181795444.1
Streptomyces sp. WELS2	WP_181796544.1	WP_181796543.1
Streptomyces himalayensis	WP_181656945.1	WP_181862801.1
Streptomyces sp. SCUT-3	WP_182311834.1	WP_182311833.1
Streptomyces sp. SCUT-3	WP_182313743.1	WP_182313742.1
Streptacidiphilus sp. PB12-B1b	WP_182445006.1	WP_182445005.1
Streptacidiphilus sp. P02-A3a	WP_182449877.1	WP_182449876.1
Streptomyces sp. GMR22	WP_182470205.1	WP_182470204.1
Streptomyces alkaliphilus	WP_143621340.1	WP_182605770.1
Streptomyces calidiresistens	WP_182663095.1	WP_182663097.1
Streptomyces murinus strain=DSM	WP_037653387.1	WP_182788191.1
Streptomyces durbertensis	WP_182853643.1	WP_182853644.1
Streptomyces sp. gCLA4	WP_183065919.1	WP_183065920.1
Actinoplanes campanulatus strain=NBRC	WP_183216028.1	WP_183216030.1
Nonomuraea dietziae	WP_183651365.1	WP_183651367.1
Prauserella isguenensis	WP_183658609.1	WP_183658611.1
Roseospora visakhapatnamensis	WP_184045010.1	WP_184045012.1
Nocardiosis mwathae	WP_184078163.1	WP_184078165.1
Micromonospora parathelypteridis strain=CGMCC	WP_184187678.1	WP_184187675.1
Streptomyces olivoverticillatus	WP_184350984.1	WP_184350985.1
Roseospora goensis	WP_184433368.1	WP_184433366.1
Saccharopolyspora gloriosae	WP_184479478.1	WP_184479477.1
Micromonospora polyrhachis	WP_184537878.1	WP_184537879.1
Streptosporangium becharensense	WP_184540167.1	WP_184540165.1
Streptomyces paradoxus	WP_184562546.1	WP_184562544.1
Streptomyces paradoxus	WP_184564496.1	WP_184564494.1
Streptomyces violarus strain=JCM	WP_184594715.1	WP_184594716.1
Sphaerisporangium krabiense strain=NBRC	WP_239139067.1	WP_184617871.1
Streptomyces netropsis strain=JCM	WP_184736800.1	WP_184736798.1
Streptomyces albaduncus strain=JCM	WP_184761959.1	WP_184761960.1
Streptomyces griseostramineus strain=JCM	WP_184822519.1	WP_184822521.1
Kutzneria kofuensis	WP_184869175.1	WP_184869174.1
Sphaerisporangium siamense strain=NBRC	WP_239122659.1	WP_184884727.1
Actinomadura livida strain=JCM	WP_184885680.1	WP_184885678.1
Streptomyces luteogriseus	WP_184916075.1	WP_184916079.1
Planomonospora venezuelensis	WP_184939892.1	WP_184939891.1

<i>Kitasatospora kifunensis</i>	WP_184943549.1	WP_184941332.1
<i>Nonomuraea endophytica</i>	WP_221340366.1	WP_184960755.1
<i>Streptomyces echinatus</i>	WP_184961137.1	WP_184961139.1
<i>Nonomuraea endophytica</i>	WP_184970423.1	WP_184970425.1
<i>Streptomyces caelestis</i> strain=JCM	WP_184988227.1	WP_184988230.1
<i>Actinoplanes digitatis</i> strain=NBRC	WP_184999081.1	WP_184995638.1
<i>Crossiella cryophila</i>	WP_185001993.1	WP_185001992.1
<i>Streptomyces</i> sp. AK010	WP_185012317.1	WP_185012318.1
<i>Streptomyces</i> sp. AK010	WP_185014455.1	WP_185014456.1
<i>Actinomadura coerulea</i> strain=JCM	WP_185023857.1	WP_185023858.1
<i>Streptomyces candidus</i>	WP_185031413.1	WP_185031415.1
<i>Actinoplanes octamycinicus</i> strain=NBRC	WP_185043613.1	WP_185043612.1
<i>Nonomuraea jabiensis</i>	WP_185076174.1	WP_185076173.1
<i>Nonomuraea rubra</i>	WP_185110978.1	WP_185110979.1
<i>Streptomyces</i> sp. Ag109	WP_079424047.1	WP_185117339.1
<i>Pseudoalteromonas luteoviolacea</i>	WP_142046477.1	WP_185843442.1
<i>Streptomyces</i> sp. TYQ1024	WP_185943432.1	WP_185943431.1
<i>Streptomyces</i> sp. PSKA01	WP_186285191.1	WP_186285190.1
<i>Streptomyces</i> sp. PSKA01	WP_186288038.1	WP_186288037.1
<i>Actinomadura alba</i>	WP_187245481.1	WP_187245366.1
<i>Nocardiosis alba</i> ATCC	WP_014908193.1	WP_187294569.1
<i>Actinoplanes lobatus</i> strain=NBRC	WP_188119222.1	WP_188119223.1
<i>Lentzea indica</i>	WP_167969141.1	WP_188134520.1
<i>Nonomuraea</i> sp. SYSU	WP_188190198.1	WP_188190199.1
<i>Streptomyces</i> sp. CBMA291	WP_223183841.1	WP_188267078.1
<i>Streptomyces</i> sp. CBMA152	WP_223185214.1	WP_188275488.1
<i>Streptomyces</i> sp. CBMA152	WP_188276710.1	WP_188276711.1
<i>Streptomyces</i> sp. CBMA29	WP_188280342.1	WP_188280343.1
<i>Streptomyces</i> sp. TRM68416	WP_188287448.1	WP_188287449.1
<i>Streptomyces</i> sp. CBMA123	WP_188309032.1	WP_188309031.1
<i>Verrucosipora sonchi</i>	WP_189043807.1	WP_189043809.1
<i>Longimycelium tulufanense</i>	WP_189057074.1	WP_189057076.1
<i>Longimycelium tulufanense</i>	WP_189060662.1	WP_189060701.1
<i>Streptomyces kronopolitis</i>	WP_189096347.1	WP_189096348.1
<i>Streptomyces kronopolitis</i>	WP_189100854.1	WP_189100962.1
<i>Streptomyces camponoticapitis</i>	WP_189106460.1	WP_189106461.1
<i>Streptomyces camponoticapitis</i>	WP_189111435.1	WP_189111436.1
<i>Nonomuraea cavernae</i>	WP_189128782.1	WP_189128783.1
<i>Streptomyces lacrimifluminis</i>	WP_229695048.1	WP_189145902.1
<i>Streptomyces lacrimifluminis</i>	WP_189151475.1	WP_189151474.1
<i>Lentzea pudingi</i>	WP_189159209.1	WP_189159208.1
<i>Sphaerisporangium melleum</i>	WP_229691441.1	WP_189165476.1
<i>Pilimelia anulata</i>	WP_189170565.1	WP_189170566.1
<i>Streptomyces albiflavescens</i>	WP_189185730.1	WP_189185729.1
<i>Streptomyces albiflavescens</i>	WP_189188626.1	WP_189188625.1
<i>Streptomyces albiflavescens</i>	WP_189192252.1	WP_189192251.1
<i>Micromonospora fulviviridis</i>	WP_189196657.1	WP_189196656.1
<i>Streptomyces purpureus</i> strain=JCM	WP_189200064.1	WP_189200062.1
<i>Couchioplanes caeruleus</i>	WP_189207320.1	WP_189207321.1
<i>Couchioplanes caeruleus</i>	WP_189207926.1	WP_189207927.1
<i>Actinokineospora fastidiosa</i>	WP_189212772.1	WP_189212773.1
<i>Streptomyces ruber</i>	WP_229820870.1	WP_189215810.1
<i>Streptomyces ruber</i>	WP_189215975.1	WP_189215974.1
<i>Saccharothrix coeruleofusca</i>	WP_189225176.1	WP_189225175.1
<i>Saccharothrix coeruleofusca</i>	WP_189227508.1	WP_189227509.1
<i>Streptomyces flaveolus</i>	WP_189228664.1	WP_189228665.1
<i>Streptomyces flaveolus</i>	WP_189229595.1	WP_189229596.1
<i>Streptosporangium pseudovulgare</i>	WP_189249556.1	WP_189249557.1
<i>Lentzea flava</i>	WP_189258525.1	WP_189258524.1
<i>Streptomyces fuscichromogenes</i>	WP_189260618.1	WP_189260619.1
<i>Streptomyces fuscichromogenes</i>	WP_189267208.1	WP_189267209.1
<i>Kitasatospora griseola</i> strain=JCM	WP_189270815.1	WP_189270816.1
<i>Kitasatospora griseola</i> strain=JCM	WP_043910450.1	WP_189270846.1
<i>Kitasatospora griseola</i> strain=JCM	WP_100584261.1	WP_189273022.1
<i>Streptomyces atratus</i> strain=JCM	WP_189278137.1	WP_189278139.1
<i>Streptomyces fumigatiscleroticus</i>	WP_189287034.1	WP_189287033.1
<i>Streptomyces albospinus</i>	WP_189299924.1	WP_189299922.1
<i>Streptomyces cinerochromogenes</i>	WP_189304898.1	WP_189304895.1
<i>Streptomyces cinerochromogenes</i>	WP_189307151.1	WP_189307153.1
<i>Streptomyces brasiliensis</i>	WP_189313271.1	WP_189313272.1
<i>Streptomyces flaveus</i>	WP_189324913.1	WP_189324914.1
<i>Actinoplanes ianthinogenes</i> strain=NBRC	WP_189330336.1	WP_189330337.1
<i>Streptomyces gancidicus</i>	WP_006134517.1	WP_189406846.1
<i>Streptomyces gancidicus</i>	WP_006130548.1	WP_189408133.1
<i>Streptomyces abikoensis</i>	WP_189451468.1	WP_189451467.1
<i>Streptomyces kurssanovii</i>	WP_189471842.1	WP_189471844.1

<i>Streptomyces kurssanovii</i>	WP_229835354.1	WP_189473747.1
<i>Streptomyces narbonensis</i>	WP_189507698.1	WP_189507696.1
<i>Streptomyces narbonensis</i>	WP_229833118.1	WP_189513450.1
<i>Paludibacterium paludis</i> strain=BCRC	WP_189532434.1	WP_189532432.1
<i>Streptomyces gelaticus</i>	WP_189541718.1	WP_189541719.1
<i>Streptomyces gelaticus</i>	WP_189545377.1	WP_189545376.1
<i>Streptomyces lavendofoliae</i>	WP_189554001.1	WP_189554000.1
<i>Streptomyces pilosus</i> strain=JCM	WP_189558826.1	WP_189558827.1
<i>Streptomyces pilosus</i> strain=JCM	WP_189561441.1	WP_189561440.1
<i>Streptomyces massasporeus</i>	WP_189590127.1	WP_189590126.1
<i>Streptomyces massasporeus</i>	WP_189592636.1	WP_189592637.1
<i>Streptomyces flavoviridis</i>	WP_189561441.1	WP_189598652.1
<i>Streptomyces chromofuscus</i>	WP_189696935.1	WP_189696936.1
<i>Streptomyces chromofuscus</i>	WP_189700481.1	WP_189700480.1
<i>Streptomyces anandii</i>	WP_189703660.1	WP_189703661.1
<i>Streptomyces anandii</i>	WP_189705841.1	WP_189705842.1
<i>Streptomyces phaeofaciens</i>	WP_189708002.1	WP_189708000.1
<i>Streptomyces phaeofaciens</i>	WP_189717644.1	WP_189717643.1
<i>Streptomyces nojiriensis</i>	WP_189735014.1	WP_189735012.1
<i>Streptomyces tendae</i>	WP_189739026.1	WP_189739023.1
<i>Streptomyces nojiriensis</i>	WP_189742398.1	WP_189742395.1
<i>Streptomyces tendae</i>	WP_189745794.1	WP_189745652.1
<i>Streptomyces</i> sp. MBT70	WP_030783113.1	WP_189752543.1
<i>Streptomyces</i> sp. MBT70	WP_189754806.1	WP_189754805.1
<i>Streptomyces</i> sp. MBT70	WP_189755688.1	WP_189755687.1
<i>Streptomyces capitiformicae</i> strain=CGMCC	WP_189783101.1	WP_189783102.1
<i>Streptomyces capitiformicae</i> strain=CGMCC	WP_189787163.1	WP_189787162.1
<i>Streptosporangium violaceochromogenes</i>	WP_189791396.1	WP_189791395.1
<i>Streptomyces thermodiastaticus</i>	WP_189795581.1	WP_189795582.1
<i>Streptomyces thermodiastaticus</i>	WP_189796167.1	WP_189796168.1
<i>Streptomyces tanashiensis</i>	WP_189802827.1	WP_189802828.1
<i>Streptomyces tanashiensis</i>	WP_189806846.1	WP_189806847.1
<i>Streptomyces</i> sp. KD18	WP_189808656.1	WP_189808657.1
<i>Streptomyces olivaceoviridis</i>	WP_189819366.1	WP_189819365.1
<i>Streptomyces finlayi</i>	WP_189827099.1	WP_189827100.1
<i>Streptomyces zaomyceticus</i>	WP_189830206.1	WP_189830205.1
<i>Streptomyces umbrinus</i>	WP_189838180.1	WP_189838181.1
<i>Streptomyces omiyaensis</i>	WP_189852291.1	WP_189852292.1
<i>Streptomyces poonensis</i>	WP_189859650.1	WP_189859652.1
<i>Streptomyces albulus</i>	WP_189865832.1	WP_189865834.1
<i>Streptomyces viridiviolaceus</i>	WP_189868547.1	WP_189868546.1
<i>Streptomyces viridiviolaceus</i>	WP_189873075.1	WP_189873073.1
<i>Streptomyces bluensis</i>	WP_189878216.1	WP_189878218.1
<i>Streptomyces xantholiticus</i>	WP_189889759.1	WP_189889761.1
<i>Streptomyces canarius</i>	WP_189892396.1	WP_189892399.1
<i>Streptomyces spiralis</i>	WP_189900708.1	WP_189900710.1
<i>Streptomyces spiralis</i>	WP_030185799.1	WP_189908284.1
<i>Streptomyces viridodiastaticus</i>	WP_266404799.1	WP_189912588.1
<i>Kitasatospora xanthocidica</i>	WP_189917581.1	WP_189917579.1
<i>Kitasatospora xanthocidica</i>	WP_189926075.1	WP_189926077.1
<i>Streptomyces aurantiogriseus</i>	WP_189944199.1	WP_189944198.1
<i>Streptomyces roseolus</i>	WP_189955276.1	WP_189955274.1
<i>Streptomyces alanosinicus</i>	WP_189958588.1	WP_189958587.1
<i>Streptomyces violascens</i>	WP_189964187.1	WP_189964190.1
<i>Streptomyces termitum</i>	WP_189976313.1	WP_189976314.1
<i>Streptomyces capoamus</i>	WP_189981677.1	WP_189981680.1
<i>Streptomyces anulatus</i> strain=JCM	WP_050357095.1	WP_190007046.1
<i>Streptomyces lucensis</i>	WP_190019240.1	WP_190019241.1
<i>Streptomyces hirosheimensis</i>	WP_190023243.1	WP_190023244.1
<i>Streptomyces goshikiensis</i>	WP_008742304.1	WP_190030823.1
<i>Streptomyces lomondensis</i>	WP_229906323.1	WP_190049543.1
<i>Streptomyces lomondensis</i>	WP_190054854.1	WP_190054855.1
<i>Streptomyces echinoruber</i>	WP_229879396.1	WP_190056959.1
<i>Streptomyces echinoruber</i>	WP_190056993.1	WP_190056994.1
<i>Streptomyces echinoruber</i>	WP_190058864.1	WP_190058863.1
<i>Streptomyces echinoruber</i>	WP_190061155.1	WP_190061154.1
<i>Streptomyces griseocarneus</i>	WP_190066554.1	WP_190066555.1
<i>Streptomyces griseocarneus</i>	WP_190067410.1	WP_190067409.1
<i>Streptomyces lanatus</i>	WP_190069709.1	WP_190069710.1
<i>Streptomyces lanatus</i>	WP_190075884.1	WP_190075885.1
<i>Streptomyces longisporoflavus</i>	WP_190085605.1	WP_190085606.1
<i>Streptomyces melanogenes</i>	WP_190091610.1	WP_190091609.1
<i>Streptomyces griseoflavus</i>	WP_190096659.1	WP_190096660.1
<i>Streptomyces nashvillensis</i>	WP_190102193.1	WP_190102192.1
<i>Streptomyces nashvillensis</i>	WP_190107306.1	WP_190107305.1
<i>Streptomyces cinnamoneus</i> strain=JCM	WP_190108496.1	WP_190108497.1

<i>Streptomyces flavofungini</i> strain=JCM	WP_190120298.1	WP_190120297.1
<i>Streptomyces inusitatus</i>	WP_190123623.1	WP_190123622.1
<i>Streptomyces mashuensis</i>	WP_190132207.1	WP_190132206.1
<i>Streptomyces mashuensis</i>	WP_190132754.1	WP_190132755.1
<i>Streptomyces longispororuber</i>	WP_229925817.1	WP_190137760.1
<i>Streptomyces glebosus</i> strain=JCM	WP_190145416.1	WP_190145417.1
<i>Streptomyces humidus</i>	WP_190150401.1	WP_190150402.1
<i>Streptomyces humidus</i>	WP_190151593.1	WP_190151594.1
<i>Streptomyces litmocidini</i>	WP_190155458.1	WP_190155459.1
<i>Streptomyces litmocidini</i>	WP_190156082.1	WP_190156081.1
<i>Streptomyces malachitofuscus</i>	WP_190163427.1	WP_190163428.1
<i>Streptomyces</i> sp. GbtCB7	WP_075030274.1	WP_190168369.1
<i>Streptomyces mirabilis</i>	WP_054237210.1	WP_190172717.1
<i>Streptomyces naganishii</i>	WP_190179175.1	WP_190179176.1
<i>Streptomyces naganishii</i>	WP_190180280.1	WP_190180281.1
<i>Streptomyces cirratus</i>	WP_190183746.1	WP_190183745.1
<i>Streptomyces cirratus</i>	WP_190187510.1	WP_190187509.1
<i>Streptomyces cirratus</i>	WP_190187956.1	WP_190187955.1
<i>Streptomyces minutiscleroticus</i>	WP_190191453.1	WP_190191454.1
<i>Streptomyces minutiscleroticus</i>	WP_190192413.1	WP_190192412.1
<i>Streptomyces djakartensis</i>	WP_190201412.1	WP_190201411.1
<i>Streptomyces fumanus</i>	WP_190203802.1	WP_190203803.1
<i>Streptomyces fumanus</i>	WP_190205132.1	WP_190205133.1
<i>Kitasatospora indigofera</i>	WP_190210743.1	WP_190210742.1
<i>Kitasatospora indigofera</i>	WP_190211397.1	WP_190211398.1
<i>Streptomyces griseosporus</i>	WP_190219636.1	WP_190219635.1
<i>Streptomyces hydrogenans</i>	WP_190221253.1	WP_190221254.1
<i>Streptomyces hydrogenans</i>	WP_190222604.1	WP_190222605.1
<i>Streptomyces umbrinus</i>	WP_190228130.1	WP_190228131.1
<i>Actinomadura</i> sp. RB99	WP_190855136.1	WP_190855134.1
<i>Actinomadura</i> sp. RB99	WP_190855302.1	WP_190855305.1
<i>Streptomyces tuius</i>	WP_190896066.1	WP_190896064.1
<i>Streptomyces tuius</i>	WP_190901339.1	WP_190901341.1
<i>Streptomyces chumphonensis</i>	WP_191208330.1	WP_191208331.1
<i>Streptomyces chumphonensis</i>	WP_191210716.1	WP_191210715.1
<i>Amycolatopsis deserti</i>	WP_191248052.1	WP_191248053.1
<i>Amycolatopsis oliviviridis</i>	WP_191252000.1	WP_191252002.1
<i>Kitasatospora herbaricolor</i>	WP_191290025.1	WP_191290024.1
<i>Kitasatospora herbaricolor</i>	WP_073927034.1	WP_191290777.1
<i>Lentzea cavernae</i>	WP_191303146.1	WP_191303147.1
<i>Actinomadura cremae</i>	WP_191333939.1	WP_191333938.1
<i>Catellatospora chokoriensis</i> strain=NBRC	WP_191842194.1	WP_191842193.1
<i>Streptomyces filipinensis</i>	WP_191871239.1	WP_191871240.1
<i>Streptomyces filipinensis</i>	WP_191873372.1	WP_191873374.1
<i>Streptomyces mutabilis</i> strain=JCM	WP_191888997.1	WP_191888996.1
<i>Streptomyces mutabilis</i> strain=JCM	WP_191888999.1	WP_191888998.1
<i>Streptomyces</i> sp. H28	WP_192232401.1	WP_192232402.1
<i>Streptomyces</i> sp. VITNK9	WP_225620030.1	WP_192342467.1
<i>Nonomurea africana</i>	WP_192776711.1	WP_192776710.1
<i>Streptomyces</i> sp. RT42	WP_210953043.1	WP_193448643.1
<i>Streptomyces plicatus</i>	WP_192342468.1	WP_193450422.1
<i>Streptomyces griseus</i> strain=JCM	WP_193463781.1	WP_193463780.1
<i>Streptomyces janthinus</i>	WP_193483055.1	WP_193483054.1
<i>Streptomyces bellus</i>	WP_193502879.1	WP_193502881.1
<i>Streptomyces vinaceusdrappus</i>	WP_193517012.1	WP_193517011.1
<i>Thermobifida fusca</i> strain=UPMC	WP_193587122.1	WP_193587123.1
<i>Streptomyces ferrugineus</i>	WP_194040477.1	WP_194040475.1
<i>Streptomyces ferrugineus</i>	WP_194040914.1	WP_194040912.1
<i>Streptomyces olivaceus</i> strain=SCSIO	WP_194275976.1	WP_194275977.1
<i>Nocardia</i> sp. BSTN01	WP_194807359.1	WP_194807358.1
<i>Nocardia</i> sp. XZ	WP_228542277.1	WP_194837650.1
<i>Catenulispora rubra</i>	WP_194915535.1	WP_194915519.1
<i>Nocardia abscessus</i> strain=N-11	WP_195036287.1	WP_195036288.1
<i>Nocardia beijingensis</i> strain=N-39	WP_195046753.1	WP_195046752.1
<i>Nocardia nova</i> strain=N-46	WP_195076427.1	WP_195076426.1
<i>Nocardia beijingensis</i> strain=BJ06-0111	WP_195086578.1	WP_195086580.1
<i>Nocardia brasiliensis</i> strain=BJ06-0105	WP_267467182.1	WP_195089550.1
<i>Nocardia abscessus</i> strain=N-20	WP_195105081.1	WP_195105079.1
<i>Nocardia transvalensis</i> strain=BJ06-0148	WP_195108043.1	WP_195108042.1
<i>Nocardia terpenica</i> strain=N-34	WP_195119381.1	WP_195119382.1
<i>Nocardia abscessus</i> strain=BJ06-0146	WP_195148739.1	WP_195148740.1
<i>Nocardia abscessus</i> strain=BJ06-0146	WP_195154344.1	WP_195154343.1
<i>Streptomyces olivaceus</i>	WP_194275976.1	WP_195888925.1
<i>Nonomurea cyprica</i>	WP_195899822.1	WP_195899821.1
<i>Streptomyces spinoverrucosus</i> strain=SNB-032	WP_196463314.1	WP_196463315.1
<i>Micromonospora vinacea</i>	WP_196920884.1	WP_196920883.1

Kitasatospora sp. SUK	WP_196952144.1	WP_196952154.1
Longispora fulva strain=NBRC	WP_233473195.1	WP_197001614.1
Priestia endophytica strain=G25-135-1	WP_082802560.1	WP_197233005.1
Saccharomonospora sp. NB11	WP_197319853.1	WP_197319852.1
Streptomyces bathyalis	WP_197352721.1	WP_197352722.1
Streptomyces sp. HB-N217	WP_197923607.1	WP_197923606.1
Streptomyces sp. HB-N217	WP_197925604.1	WP_197925606.1
Streptomyces javensis	WP_198276558.1	WP_198276557.1
Acidithiobacillus ferrivorans strain=XJFY6S-08	WP_198661325.1	WP_198661326.1
Frankia sp. CcI49	WP_054567319.1	WP_198955648.1
Streptomyces sp. BSE7-9	WP_163041661.1	WP_199214250.1
Pseudosporangium sp. NEAU-24	WP_199510914.1	WP_199510915.1
Streptomyces murinus strain=Am1	WP_128790635.1	WP_199573978.1
Streptomyces sp. CRB46	WP_019326887.1	WP_199578747.1
Streptomyces sp. CRB46	WP_233535641.1	WP_199579154.1
Streptomyces sp. DSM	WP_199586748.1	WP_199586749.1
Micromonospora sp. Llam0	WP_123603557.1	WP_199757896.1
Nocardiosis alba	WP_017533710.1	WP_199806175.1
Streptomyces sp. NBRC	WP_055549146.1	WP_199830915.1
Streptomyces badius	WP_069739084.1	WP_199887784.1
Streptomyces sp. HSG2	WP_200262965.1	WP_200262964.1
Streptomyces sp. Y2F8-2	WP_200420980.1	WP_200420979.1
Streptomyces sp. Y2F8-2	WP_200422177.1	WP_200422178.1
Streptomyces sp. NE5-10	WP_200425293.1	WP_200425294.1
Streptomyces sp. NE5-10	WP_200426147.1	WP_200426146.1
Streptomyces sp. MBT51	WP_267950907.1	WP_200693555.1
Streptomyces sp. MBT51	WP_200695186.1	WP_200695187.1
Streptomyces sp. MBT51	WP_200696429.1	WP_200696428.1
Streptomyces sp. MBT33	WP_200702698.1	WP_200702697.1
Streptomyces sp. MBT49	WP_189928680.1	WP_200727318.1
Streptomyces sp. MBT60	WP_030720920.1	WP_200739372.1
Streptomyces sp. MBT97	WP_189928680.1	WP_200745744.1
Frankia sp. R43	WP_054567319.1	WP_200931336.1
Ktedonobacter sp. SOSP1-52	WP_201377852.1	WP_201377850.1
Ktedonobacter sp. SOSP1-85	WP_201380479.1	WP_201380481.1
Ktedonobacter sp. SOSP1-52	WP_201384623.1	WP_201384621.1
Ktedonobacter sp. SOSP1-52	WP_201386405.1	WP_201386407.1
Ktedonobacter sp. SOSP1-52	WP_201392524.1	WP_201392522.1
Ktedonobacter sp. SOSP1-85	WP_201392968.1	WP_201392970.1
Streptacidiphilus melanogenes	WP_042388956.1	WP_201776269.1
Streptacidiphilus anmyonensis	WP_042428675.1	WP_201776891.1
Streptacidiphilus neutrinimicus	WP_042371786.1	WP_201777160.1
Streptomyces musisoli strain=CH5-8	WP_201817767.1	WP_201817769.1
Streptomyces musisoli strain=CH5-8	WP_201820075.1	WP_201820078.1
Streptomyces actinomycinicus	WP_201831585.1	WP_201831586.1
Streptomyces spororaveus	WP_202199265.1	WP_202199264.1
Streptomyces spororaveus	WP_202203095.1	WP_202203096.1
Streptomyces sp. SN-593	WP_202232828.1	WP_202232829.1
Streptomyces sp. SN-593	WP_202233832.1	WP_202233833.1
Streptomyces sp. SN-593	WP_202237348.1	WP_202237347.1
Streptomyces sp. M2CJ-2	WP_202274459.1	WP_202274456.1
Streptomyces sp. M2CJ-2	WP_202280850.1	WP_202280851.1
Nocardiosis alba strain=SID5840	WP_017533710.1	WP_202422406.1
Streptomyces sp. SID8356	WP_026237417.1	WP_202439160.1
Streptomyces sp. SID685	WP_093681164.1	WP_202517876.1
Streptomyces sp. SID4937	WP_093692501.1	WP_202540361.1
Streptomyces sp. KY75	WP_202591933.1	WP_202591934.1
Saccharothrix deserti	WP_158852616.1	WP_202919301.1
Streptomyces sp. E5N298	WP_238696913.1	WP_202977695.1
Frankia sp. AgB1.8	WP_203019264.1	WP_203019294.1
Streptomyces pratensis	WP_203184316.1	WP_203184315.1
Nocardia arthritidis strain=AUSMDU00012717	WP_203217661.1	WP_203217662.1
Streptomyces rochei strain=SID8161	WP_164287224.1	WP_203613417.1
Streptomyces bauhiniiae strain=SID7754	WP_164189851.1	WP_203618146.1
Streptomyces fulvissimus strain=SID14438	WP_203678333.1	WP_203678332.1
Catellatospora coxensis	WP_203688017.1	WP_203688016.1
Asanoa iriomotensis	WP_203702217.1	WP_203702216.1
Asanoa siamensis	WP_203711118.1	WP_203711117.1
Catellatospora bangladeshensis	WP_203741086.1	WP_203741084.1
Actinoplanes cyaneus	WP_203752911.1	WP_203752908.1
Actinoplanes nipponensis	WP_203765383.1	WP_203765384.1
Actinoplanes rishiriensis	WP_203778821.1	WP_203778822.1
Actinoplanes tereljensis	WP_203798235.1	WP_203798237.1
Actinoplanes ferrugineus	WP_203820157.1	WP_203820158.1
Actinoplanes ferrugineus	WP_203822592.1	WP_203822591.1
Actinoplanes palleronii	WP_239164082.1	WP_203823633.1

<i>Actinoplanes humidus</i>	WP_203841315.1	WP_203841314.1
<i>Plantactinospora mayteni</i>	WP_203860436.1	WP_203860437.1
<i>Plantactinospora endophytica</i>	WP_203869697.1	WP_203869678.1
<i>Plantactinospora endophytica</i>	WP_203870421.1	WP_203870422.1
<i>Rhizocola hellebori</i>	WP_203911378.1	WP_203911437.1
<i>Rhizocola hellebori</i>	WP_203913299.1	WP_203913332.1
<i>Rugosimonospora africana</i>	WP_203922087.1	WP_203922086.1
<i>Virgisporangium ochraceum</i>	WP_203930584.1	WP_203930585.1
<i>Sphaerisporangium rufum</i>	WP_239137574.1	WP_203988362.1
<i>Sphaerisporangium rufum</i>	WP_203992522.1	WP_203992520.1
<i>Micromonospora lutea</i>	WP_203994727.1	WP_203994729.1
<i>Virgisporangium aurantiacum</i>	WP_204004633.1	WP_204004630.1
<i>Micromonospora andamanensis</i>	WP_204006452.1	WP_204006454.1
<i>Micromonospora trujilloniae</i> strain=NBRC	WP_204024356.1	WP_204024358.1
<i>Sinosporangium siamense</i>	WP_204030131.1	WP_204030129.1
<i>Micromonospora quiuae</i>	WP_204032134.1	WP_204032132.1
<i>Archangium violaceum</i> strain=SDU8	WP_204225859.1	WP_204225858.1
<i>Geodermatophilus normandii</i> strain=I12A-02606	WP_163477630.1	WP_204264301.1
<i>Actinoplanes capillaceus</i>	WP_204295079.1	WP_204295078.1
<i>Lentzea nigeriaca</i>	WP_204765550.1	WP_204765549.1
<i>Saccharothrix algeriensis</i>	WP_239564863.1	WP_204845138.1
<i>Streptomyces</i> sp. HB132	WP_205020602.1	WP_205020601.1
<i>Streptomyces noursei</i>	WP_205362605.1	WP_205362603.1
<i>Streptomyces zhihengii</i>	WP_205372997.1	WP_205372998.1
<i>Streptomyces actuosus</i>	WP_205381657.1	WP_205381656.1
<i>Streptomyces actuosus</i>	WP_240203985.1	WP_205384241.1
<i>Planosporangium thailandense</i>	WP_167924788.1	WP_205862534.1
<i>Streptomyces verrucosiporus</i>	WP_241028417.1	WP_206350093.1
<i>Streptomyces verrucosiporus</i>	WP_241028713.1	WP_206351581.1
<i>Streptomyces chrestomyceticus</i> strain=TBRC	WP_206504812.1	WP_206504811.1
<i>Streptomyces</i> sp. M54	WP_206977200.1	WP_206977201.1
<i>Lentzea alba</i>	WP_166050646.1	WP_207311869.1
<i>Streptomyces laculatispora</i>	WP_207315323.1	WP_207315322.1
<i>Streptomyces laculatispora</i>	WP_207316276.1	WP_207316277.1
<i>Streptomyces</i> sp. CA-256286	WP_031121791.1	WP_207563809.1
<i>Streptomyces cyanogenus</i>	WP_208031855.1	WP_208031854.1
<i>Streptomyces cyanogenus</i>	WP_208034992.1	WP_208034993.1
<i>Actinomadura barringtoniae</i>	WP_208253202.1	WP_208253201.1
<i>Actinomadura nitritigenes</i>	WP_208265927.1	WP_208265926.1
<i>Actinomadura nitritigenes</i>	WP_208265995.1	WP_208265994.1
<i>Amycolatopsis niigatensis</i>	WP_101437503.1	WP_208637408.1
<i>Streptomyces griseorubiginosus</i> strain=MPMI3	WP_133049346.1	WP_208776932.1
<i>Streptomyces griseorubiginosus</i> strain=MPMI3	WP_244374093.1	WP_208783061.1
<i>Streptomyces armeniacus</i>	WP_208876819.1	WP_208876818.1
<i>Streptomyces</i> sp. PBH53	WP_208881154.1	WP_208881157.1
<i>Streptomyces</i> sp. PBH53	WP_208886559.1	WP_208886560.1
<i>Streptomyces incarnatus</i>	WP_208899765.1	WP_208899764.1
<i>Streptomyces clavifer</i>	WP_124283265.1	WP_209471153.1
<i>Kibdelosporangium banguiense</i>	WP_245379668.1	WP_209639100.1
<i>Amycolatopsis magusensis</i>	WP_209667539.1	WP_209667538.1
<i>Paenibacillus silagei</i>	WP_245368600.1	WP_209878734.1
<i>Micromonospora</i> sp. HB375	WP_240925589.1	WP_209962129.1
<i>Streptomyces</i> sp. LBUM	WP_041669430.1	WP_210524937.1
<i>Streptomyces</i> sp. GESEQ-4	WP_210574359.1	WP_210574357.1
<i>Streptomyces</i> sp. GESEQ-35	WP_210589296.1	WP_210589297.1
<i>Streptomyces</i> sp. GESEQ-13	WP_137208598.1	WP_210637880.1
<i>Micromonospora</i> sp. H61	WP_210781783.1	WP_210781782.1
<i>Nocardiosis</i> sp. B62	WP_210840936.1	WP_210840935.1
<i>Micromonospora</i> sp. C97	WP_210866528.1	WP_210866527.1
<i>Streptomyces</i> sp. RG38	WP_210873305.1	WP_210873307.1
<i>Micromonospora</i> sp. C41	WP_240925589.1	WP_210886158.1
<i>Streptomyces</i> sp. RM99	WP_166625242.1	WP_210901399.1
<i>Streptomyces</i> sp. RM99	WP_247693706.1	WP_210903167.1
<i>Streptomyces</i> sp. C3-3	WP_210991070.1	WP_210931108.1
<i>Streptomyces</i> sp. RT42	WP_247707245.1	WP_210952314.1
<i>Streptomyces</i> sp. RT42	WP_166625242.1	WP_210953482.1
<i>Streptomyces</i> sp. b94	WP_210960470.1	WP_210960471.1
<i>Streptomyces</i> sp. b94	WP_210961588.1	WP_210961589.1
<i>Streptomyces</i> sp. RM72	WP_210974683.1	WP_210974684.1
<i>Streptomyces</i> sp. RK62	WP_055624995.1	WP_210979013.1
<i>Streptomyces</i> sp. RK62	WP_055624624.1	WP_210982876.1
<i>Streptomyces sparsogenes</i> DSM	WP_076972143.1	WP_211301899.1
<i>Allorhizocola rhizosphaerae</i>	WP_117210696.1	WP_211588689.1
<i>Paenibacillus tritici</i> strain=PH55-1	WP_211722356.1	WP_211722357.1
<i>Kutzneria</i> sp. CA-103260	WP_211763380.1	WP_211763381.1
<i>Kutzneria</i> sp. CA-103260	WP_211772286.1	WP_211768115.1

<i>Streptomyces cangkringensis</i> strain=DSM	WP_211831741.1	WP_211831742.1
<i>Nocardopsis</i> sp. HDS12	WP_212642561.1	WP_212642562.1
<i>Streptomyces</i> sp. A2-16	WP_123992295.1	WP_212670181.1
<i>Streptomyces</i> sp. A2-16	WP_212670634.1	WP_212670635.1
<i>Streptomyces</i> sp. A2-16	WP_123989073.1	WP_212672547.1
<i>Streptomyces</i> sp. V17-9	WP_125628858.1	WP_212731175.1
<i>Flexivirga aerilata</i>	WP_171155320.1	WP_212755552.1
<i>Catellatospora</i> sp. TT07R-123	WP_212826293.1	WP_212826295.1
<i>Actinoplanes consettensis</i> strain=NBRC	WP_203841315.1	WP_212996103.1
<i>Actinoplanes toevensis</i> strain=NBRC	WP_213008462.1	WP_213008502.1
<i>Streptomyces tauricus</i>	WP_189777333.1	WP_213089758.1
<i>Nocardia tengchongensis</i> strain=CFH	WP_213561277.1	WP_213556495.1
<i>Photorhabdus noenieputensis</i> strain=DSM	WP_214088982.1	WP_214088983.1
<i>Streptomyces</i> sp. Tu102	WP_125525194.1	WP_214329455.1
<i>Sphaerisporangium</i> sp. H8589	WP_214410572.1	WP_214410571.1
<i>Actinomadura</i> sp. NEAU-AAG7	WP_214615635.1	WP_214615634.1
<i>Actinomadura</i> sp. NEAU-AAG7	WP_242884365.1	WP_214617098.1
<i>Rhodococcus cavernicola</i> strain=C1-24	WP_149431539.1	WP_214633113.1
<i>Streptomyces</i> sp. ISL-98	WP_251020751.1	WP_214921466.1
<i>Streptomyces</i> sp. ISL-98	WP_214928709.1	WP_214928710.1
<i>Streptomyces</i> sp. ISL-21	WP_251049483.1	WP_214934828.1
<i>Streptomyces</i> sp. ISL-21	WP_251059585.1	WP_214934901.1
<i>Streptomyces</i> sp. ISL-100	WP_214979302.1	WP_214979304.1
<i>Streptomyces</i> sp. ISL-86	WP_251049479.1	WP_215059738.1
<i>Streptomyces</i> sp. ISL-1	WP_251016902.1	WP_215089493.1
<i>Streptomyces</i> sp. MG62	WP_215119854.1	WP_215119853.1
<i>Streptomyces</i> sp. ISL-96	WP_215137370.1	WP_215137372.1
<i>Streptomyces</i> sp. ISL-44	WP_215143758.1	WP_215143759.1
<i>Streptomyces</i> sp. ISL-10	WP_251022450.1	WP_215179710.1
<i>Streptomyces</i> sp. ISL-10	WP_215185118.1	WP_215185116.1
<i>Streptomyces</i> sp. CHD11	WP_215206625.1	WP_215206626.1
<i>Streptomyces</i> sp. CHD11	WP_215209206.1	WP_215209205.1
<i>Streptomyces</i> sp. Vc74B-19	WP_251696773.1	WP_215213122.1
<i>Streptomyces</i> sp. Vc74B-19	WP_215214082.1	WP_215214081.1
<i>Streptomyces</i> sp. ATCC	WP_215447764.1	WP_215447762.1
<i>Streptomyces</i> sp. ATCC	WP_251830168.1	WP_215453145.1
<i>Streptomyces</i> sp. ATCC	WP_215453114.1	WP_215457558.1
<i>Zooshikella</i> sp. WH53	WP_215821719.1	WP_215821720.1
<i>Streptomyces</i> sp. YPW6	WP_216321350.1	WP_216321348.1
<i>Streptomyces</i> sp. 4503	WP_216346585.1	WP_216346584.1
<i>Streptomyces</i> sp. A108	WP_216721109.1	WP_216721110.1
<i>Streptomyces</i> sp. A108	WP_216722463.1	WP_216722462.1
<i>Streptomyces</i> sp. Osf17	WP_247707245.1	WP_216880456.1
<i>Streptomyces</i> sp. AC558	WP_217131386.1	WP_217131387.1
<i>Streptomyces</i> sp. AC627	WP_217139871.1	WP_217139872.1
<i>Streptomyces</i> sp. AC627	WP_217141879.1	WP_217141880.1
<i>Streptomyces</i> sp. AC512	WP_254394305.1	WP_217161459.1
<i>Streptomyces</i> sp. AC512	WP_217167666.1	WP_217167665.1
<i>Streptomyces</i> sp. AC495	WP_251830168.1	WP_217177573.1
<i>Streptomyces</i> sp. AC495	WP_215447764.1	WP_217180098.1
<i>Streptomyces</i> sp. AC550	WP_217210288.1	WP_217210293.1
<i>Streptomyces</i> sp. AC555	WP_217235990.1	WP_217235991.1
<i>Streptomyces</i> sp. AC555	WP_217237543.1	WP_217237542.1
<i>Streptomyces</i> sp. AC602	WP_217245372.1	WP_217245371.1
<i>Streptomyces</i> sp. AC602	WP_217254557.1	WP_217254558.1
<i>Streptomyces</i> sp. GMY02	WP_217307784.1	WP_217307785.1
<i>Streptomyces</i> sp. NK08203	WP_217383493.1	WP_217383494.1
<i>Streptomyces</i> sp. BV286	WP_217453116.1	WP_217453117.1
<i>Streptomyces</i> sp. BV129	WP_217461390.1	WP_217461389.1
<i>Streptomyces</i> sp. GbtcB6	WP_254647076.1	WP_217549288.1
<i>Streptomyces</i> sp. GbtcB7	WP_211179941.1	WP_217575481.1
<i>Streptomyces</i> sp. CAI-85	WP_175519452.1	WP_217686546.1

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