

**Table S1.** List of strains included in the study and their closest species based on the BLAST result of 16S rRNA

| Label | NIBR number      | Closest species (identity)                      |
|-------|------------------|-------------------------------------------------|
| KU11  | NIBRBAC000498102 | <i>Streptomyces fodineus</i> (99.86%)           |
| KU12  | NIBRBAC000503366 | <i>Streptomyces guryensis</i> (99.93%)          |
| KU13  | NIBRBAC000506136 | <i>Arthrobacter hankyongi</i> (100%)            |
| KU15  | NIBRBAC000498115 | <i>Nocardioides anomalus</i> (99.93%)           |
| KU16  | NIBRBAC000506160 | <i>Nocardioides okcheonensis</i> (100%)         |
| KU17  | NIBRBAC000506158 | <i>Micromonospora antibiotica</i> (99.93%)      |
| KU18  | NIBRBAC000506159 |                                                 |
| KU19  | NIBRBAC000498624 | <i>Kitasatospora acidiphila</i> (99.93%)        |
| KU20  | NIBRBAC000003010 | <i>Streptomyces lydicus</i> (99.67%)            |
| KU21  | NIBRBAC000003011 | <i>Paraburkholderia monticola</i> (99.79%)      |
| KU22  | NIBRBAC000003041 | <i>Streptomyces shenzhenensis</i> (99.66%)      |
| KU24  | NIBRBAC000498263 | <i>Streptomyces ryensis</i> (99.72%)            |
| KU26  |                  | <i>Streptomyces mirabilis</i> (100%)            |
| KU27  |                  | <i>Streptomyces mirabilis</i> (100%)            |
| KU28  |                  | <i>Streptomyces mirabilis</i> (99.93%)          |
| KU29  |                  | <i>Streptomyces atriruber</i> (98.75%)          |
| KU30  |                  | <i>Streptomyces populi</i> (98.75%)             |
| KU31  |                  | <i>Streptomyces lanatus</i> (98.82%)            |
| KU32  |                  | <i>Streptomyces graminisoli</i> (99.24%)        |
| KU33  |                  | <i>Streptomyces spiralis</i> (99.37%)           |
| KU34  |                  | <i>Streptomyces sanqlieri</i> (99.37%)          |
| KU35  |                  | <i>Streptomyces cyslabdanicus</i> (99.29%)      |
| KU36  |                  | <i>Streptomyces griseoruber</i> (99.02%)        |
| KU37  |                  | <i>Streptomyces roietensis</i> (99.08%)         |
| KU38  |                  | <i>Kitasatospora purpeofusca</i> (98.91%)       |
| KU39  |                  | <i>Kitasatospora purpeofusca</i> (98.96%)       |
| KU41  |                  | <i>Kitasatospora xanthocidica</i> (99.23%)      |
| KU42  |                  | <i>Kitasatospora cheerisanensis</i> (98.88%)    |
| KU43  |                  | <i>Kitasatospora cheerisanensis</i> (99.3%)     |
| KU44  |                  | <i>Kitasatospora misakiensis</i> (99.37%)       |
| KU45  |                  | <i>Kitasatospora aureofaciens</i> (99.72%)      |
| KU46  |                  | <i>Kitasatospora cinereorecta</i> (100%)        |
| KU47  |                  | <i>Kitasatospora nipponensis</i> (100%)         |
| KU48  |                  | <i>Streptomyces broussonetiae</i> (99.1%)       |
| KU49  |                  | <i>Streptomyces rhizophilus</i> (99.1%)         |
| KU50  |                  | <i>Streptomyces fuscichromogenes</i> (99.15%)   |
| KU51  |                  | <i>Streptomyces alboniger</i> (99.17%)          |
| KU52  |                  | <i>Streptomyces hyaluromycini</i> (99.24%)      |
| KU53  |                  | <i>Streptomyces melanogenes</i> (99.24%)        |
| KU54  |                  | <i>Nocardia tenqchongensis</i> (99.72%)         |
| KU55  |                  | <i>Micromonospora schwarzwaldensis</i> (99.93%) |
| KU56  | NIBRBAC000002097 | <i>Streptomyces omiyaensis</i> (99.86%)         |
| KU57  | NIBRBAC000002345 | <i>Streptomyces kanamyceticus</i> (99.79%)      |

**Table S1. (continued)**

| Label | NIBR number      | Closest species (identity)                |
|-------|------------------|-------------------------------------------|
| KU58  | NIBRBAC000002346 | <i>Streptomyces globisporus</i> (99.86%)  |
| KU59  | NIBRBAC000002647 |                                           |
| KU60  | NIBRBAC000002649 |                                           |
| KU61  | NIBRBAC000502553 |                                           |
| KU62  | NIBRBAC000503235 | <i>Streptomyces globosus</i> (99.79%)     |
| KU63  | NIBRBAC000503273 | <i>Streptomyces zaomyceticus</i> (99.86%) |
| KU64  | NIBRBAC000503274 |                                           |
| KU65  | NIBRBAC000503275 | <i>Streptomyces pratensis</i> (99.86%)    |
| KU66  | NIBRBAC000503276 | <i>Streptomyces amakusaensis</i> (99.72%) |
| KU67  | NIBRBAC000503277 | <i>Streptomyces anulatus</i> (99.86%)     |
| KU68  | NIBRBAC000503278 | <i>Streptomyces netropsis</i> (99.66%)    |
| KU69  | NIBRBAC000504784 |                                           |
| KU70  | NIBRBAC000505105 | <i>Streptomyces mirabilis</i> (100%)      |
| KU71  | NIBRBAC000506140 | <i>Streptomyces scabiei</i> (99.79%)      |
| KU73  | NIBRBAC000506144 |                                           |
| KU74  | NIBRBAC000506146 | <i>Streptomyces californicus</i> (100%)   |
| KU83  | NIBRBAC000508932 | <i>Streptomyces galbus</i> (99.93%)       |