Supplementary Table S1. Strains used in this work.

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| Strains | Description | Sourse |
| ***Streptomyces*** |  |  |
|  *S. chattanoogensis* L10 | Three BGCs were disrupted in *S. chattanoogensis* L10 |  |
|  *S. chattanoogensis* L10-OE-R1 | *ltmR1* gene overexpression strain | This study |
|  *S. chattanoogensis* L10-ΔR2 | *ltmR2* gene deletion strain | This study |
|  *S. chattanoogensis* L10-OE-F1D3 | *ltmF1-D3* gene overexpression strain | This study |
|  *S. chattanoogensis* XF1 | Native promoter of *ltmF1* was replaced by *kasO*\* promoter in *S. chattanoogensis* L10 | This study |
|  *S. chattanoogensis* XF1-ΔA | Functional domain of *ltmA* was removed by in-frame deletion in *S. chattanoogensis* XF1 | This study |
|  *S. chattanoogensis* XF1-ΔA-OE-A | Compensatory strain by introducing an extra copy of *ltmA* gene in *S. chattanoogensis* XF1-ΔA | This study |
| ***E. coli*** |  |  |
|  *E. coli* DH5α | For gene cloning |  |
|  *E. coli* ET12567/pUZ8002 | For inter-species plasmid transfering |  |
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