*Supplementary Material for*

# Actinoflavosides B-D, novel flavonoid type glycosides from tidal mudflat-derived actinomycete

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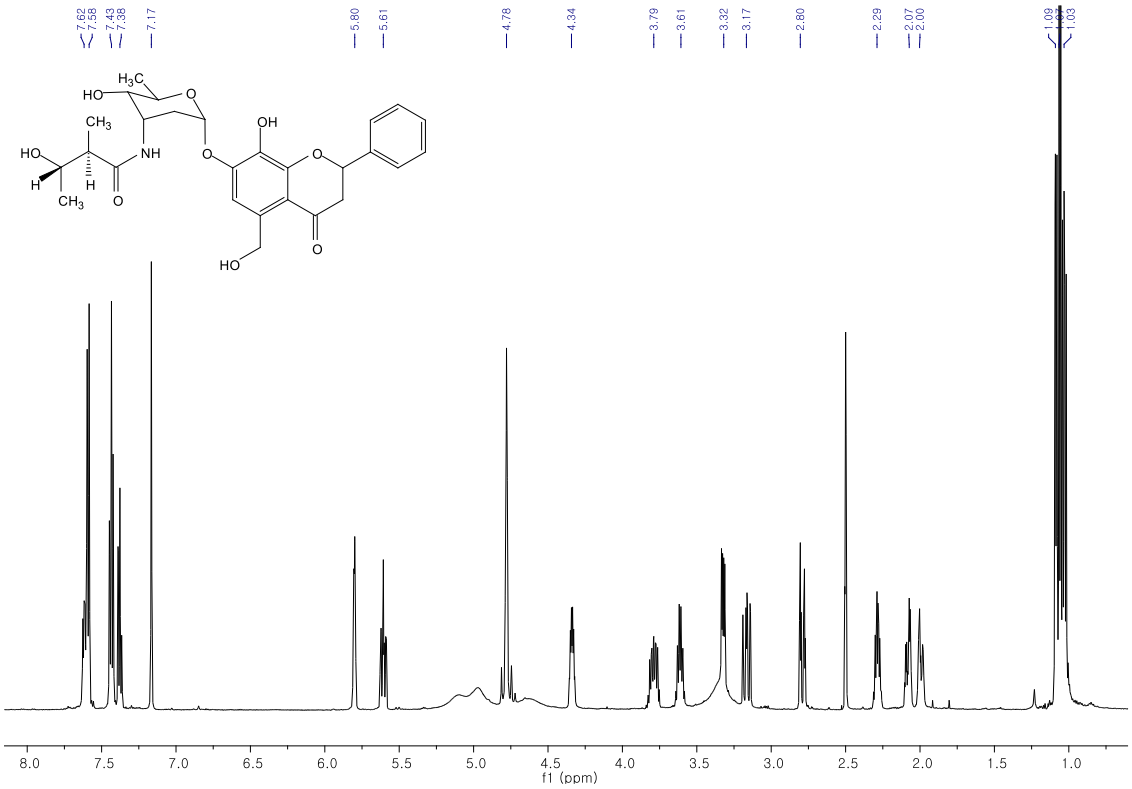


**Figure S1.** $^{1}$H NMR spectrum of actinoflavoside B (**1**) at 600 MHz in DMSO.

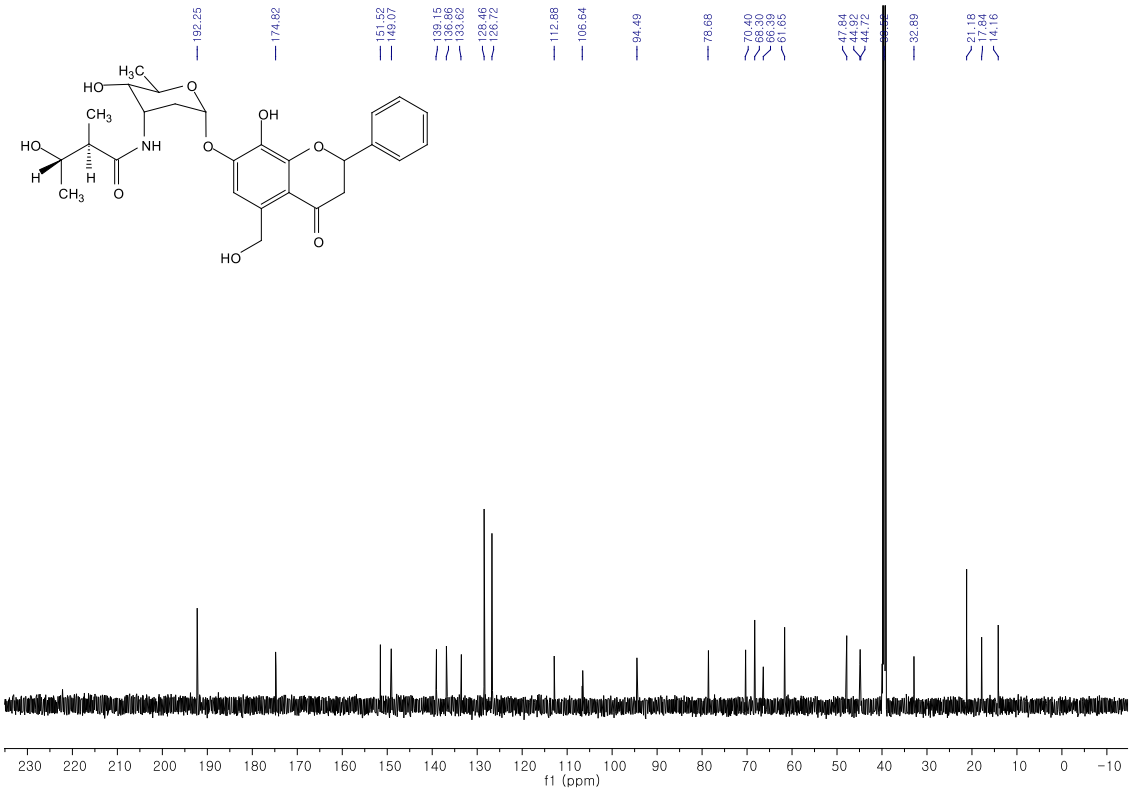


**Figure S2**. $^{13}$C NMR spectrum of actinoflavoside B (**1**) at 150 MHz in DMSO.

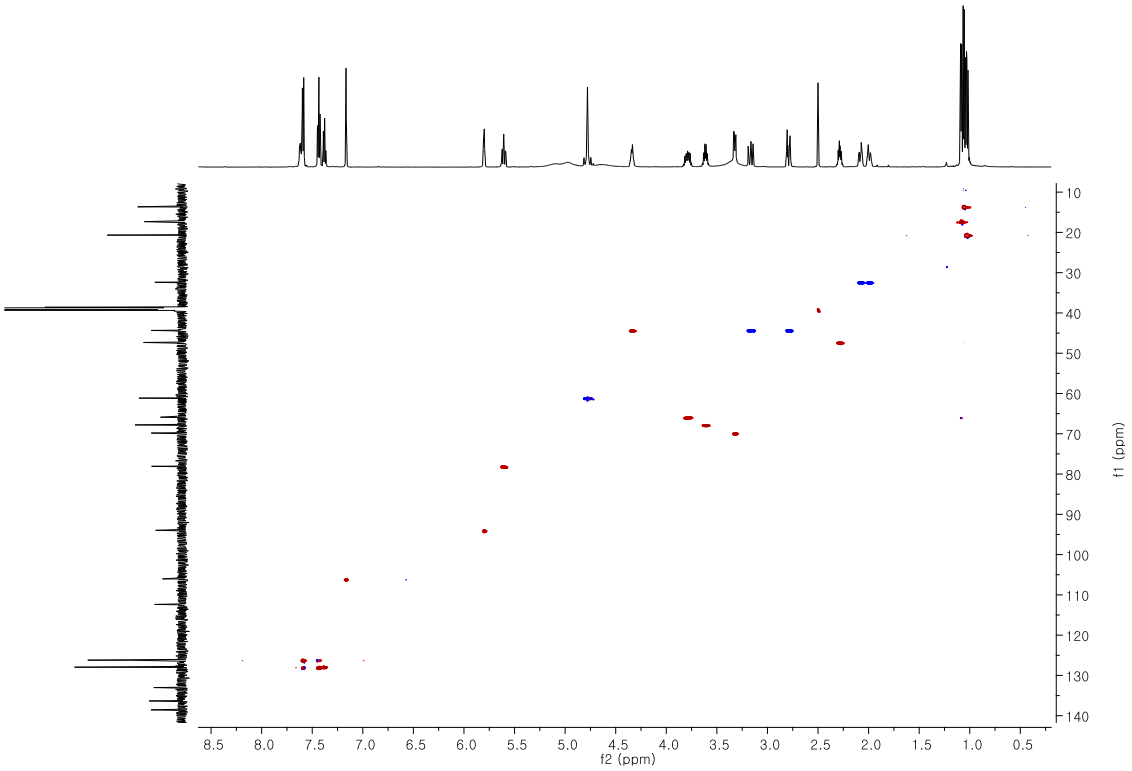


**Figure S3**. COSY NMR spectrum of actinoflavoside B (**1**) in DMSO.

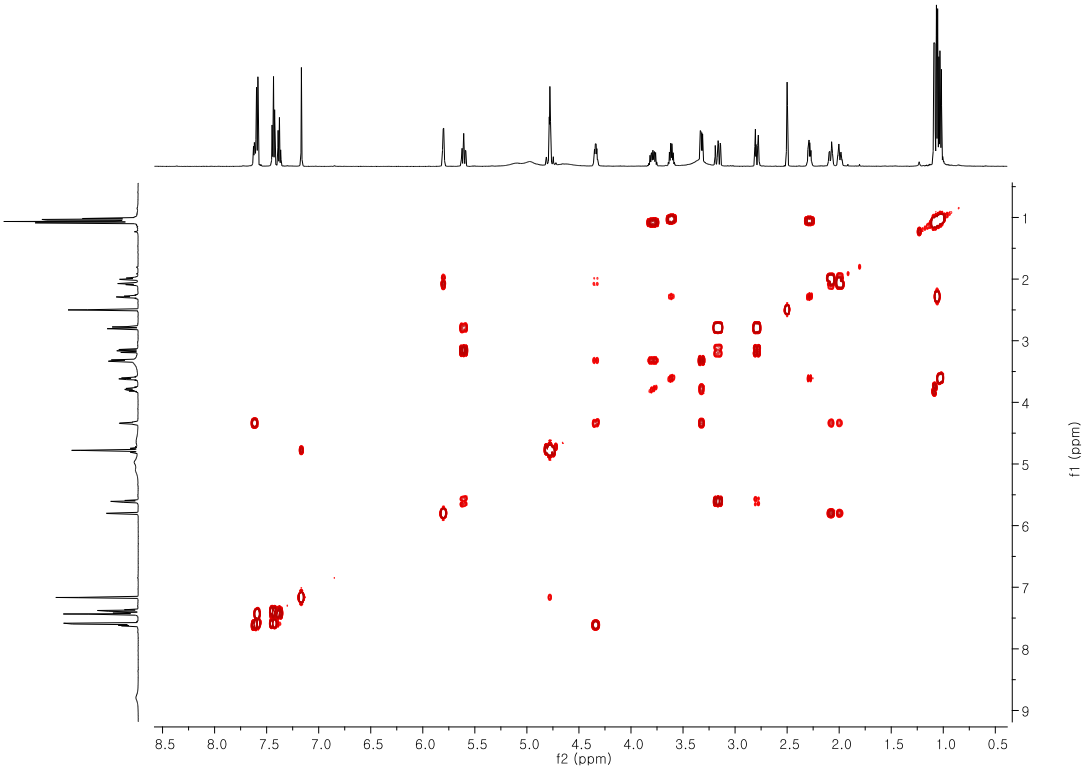


**Figure S4**. HSQC NMR spectrum of actinoflavoside B (**1**) in DMSO.

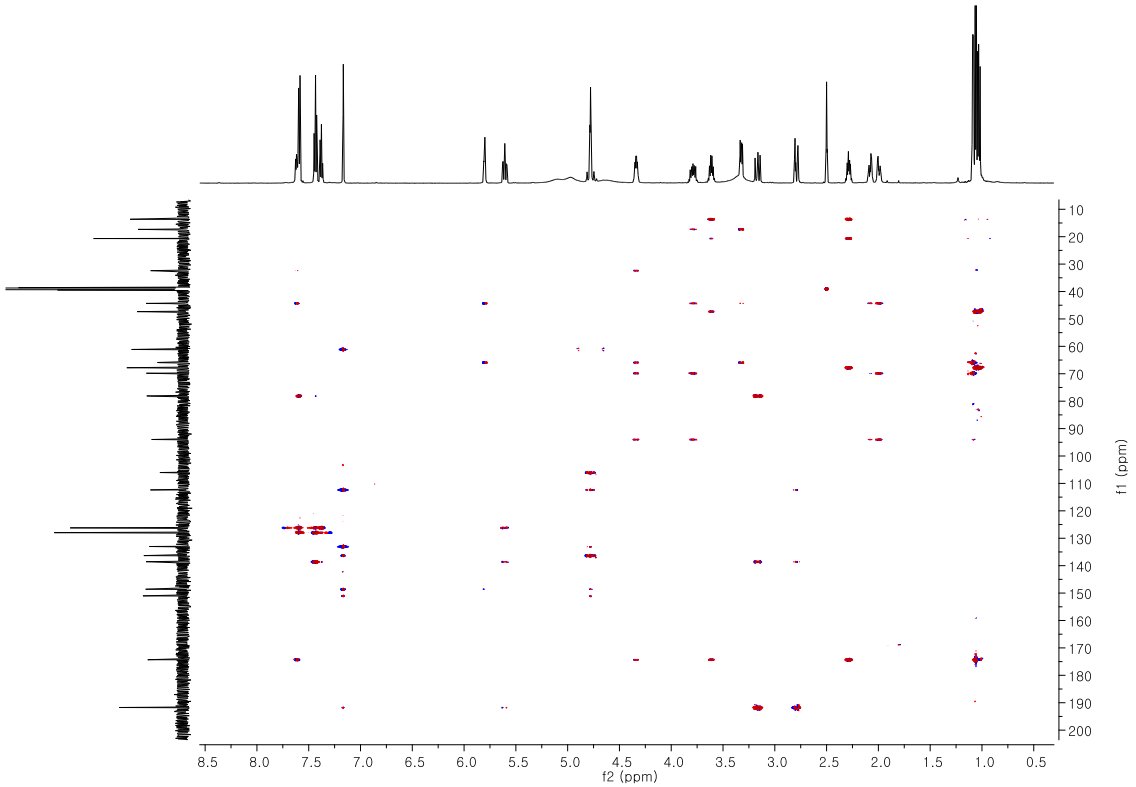


**Figure S5**. HMBC NMR spectrum of actinoflavoside B (**1**) in DMSO.

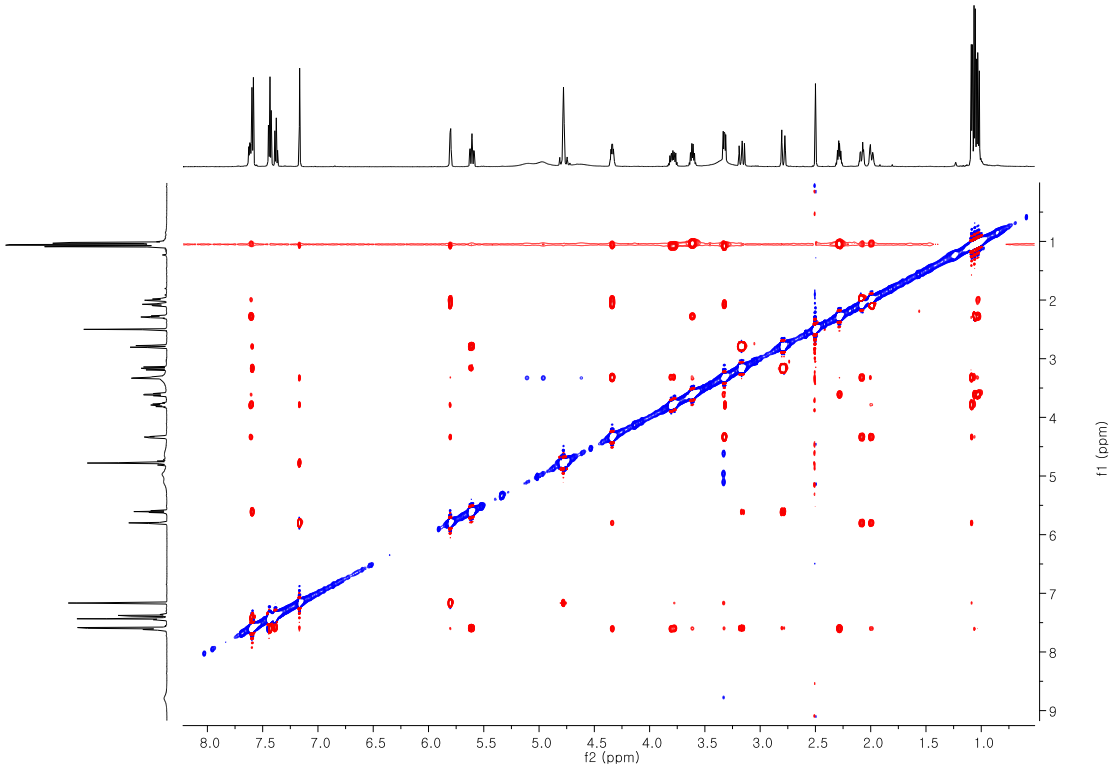


**Figure S6**. ROESY NMR spectrum of actinoflavoside B (**1**) in DMSO.

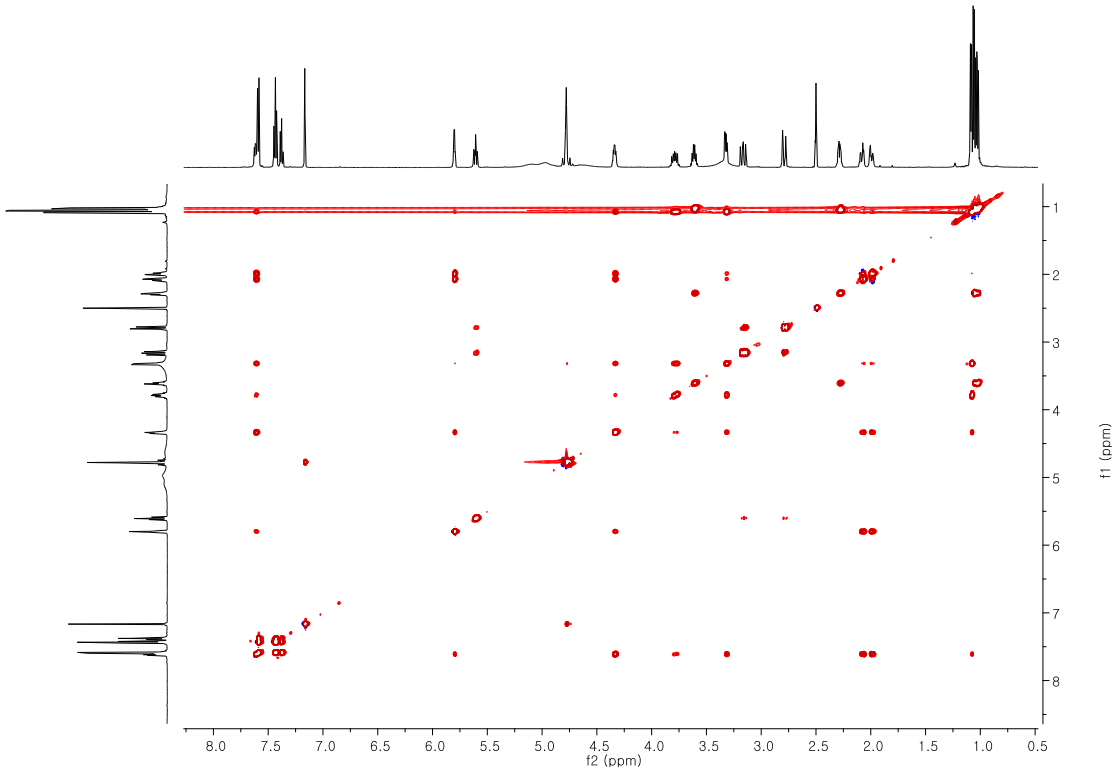


**Figure S7**. TOCSY NMR spectrum of actinoflavoside B (**1**) in DMSO.

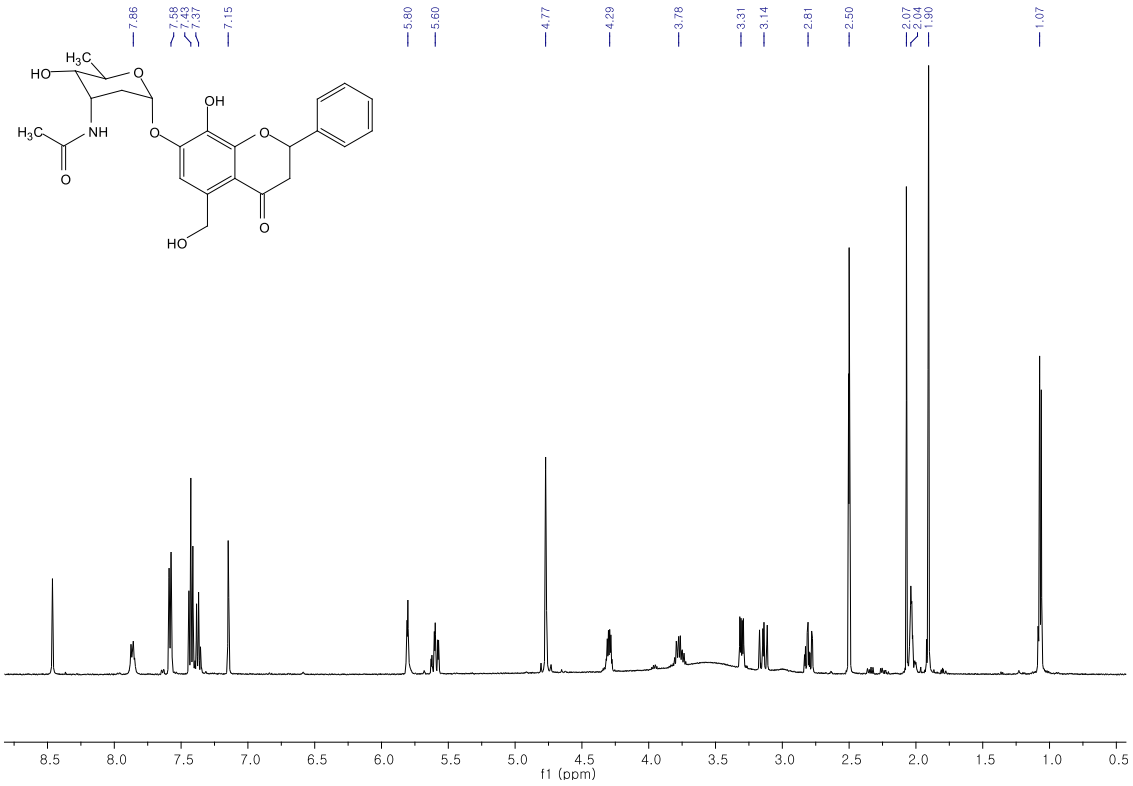


**Figure S8**. $^{1}$H NMR spectrum of actinoflavoside C (**2**) at 600 MHz in DMSO.

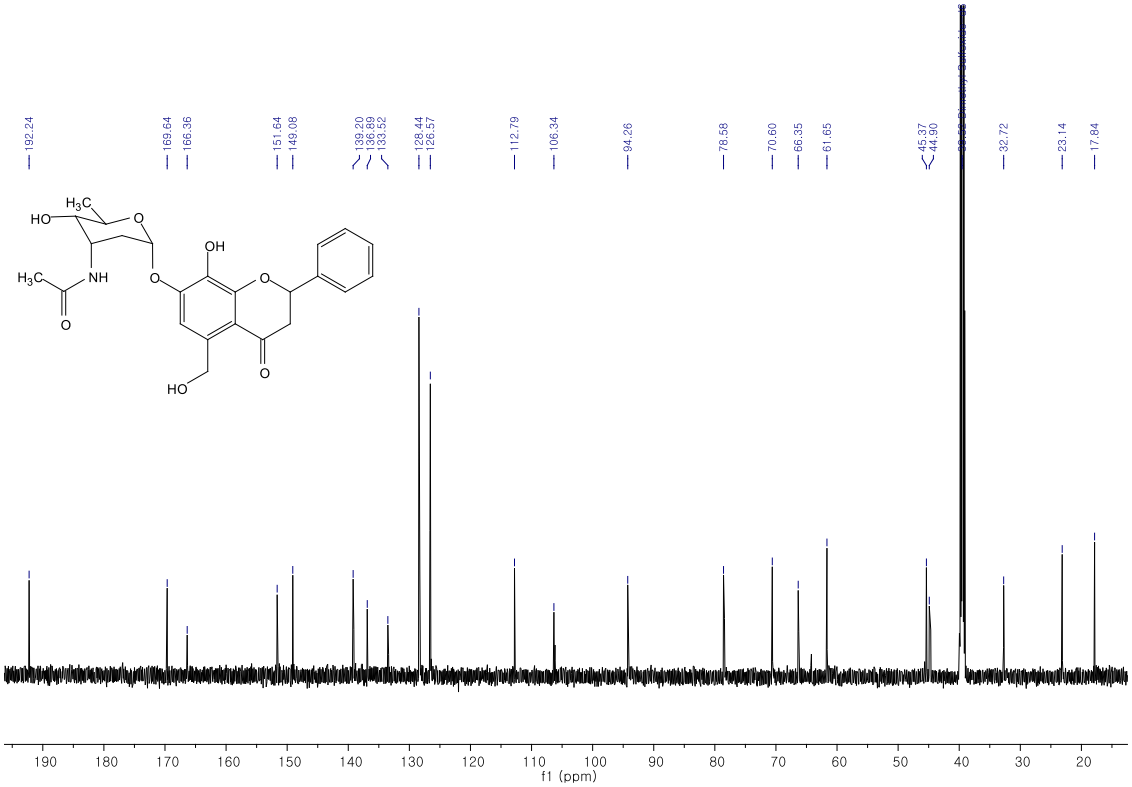


**Figure S9**. $^{13}$C NMR spectrum of actinoflavoside C (**2**) at 150 MHz in DMSO.

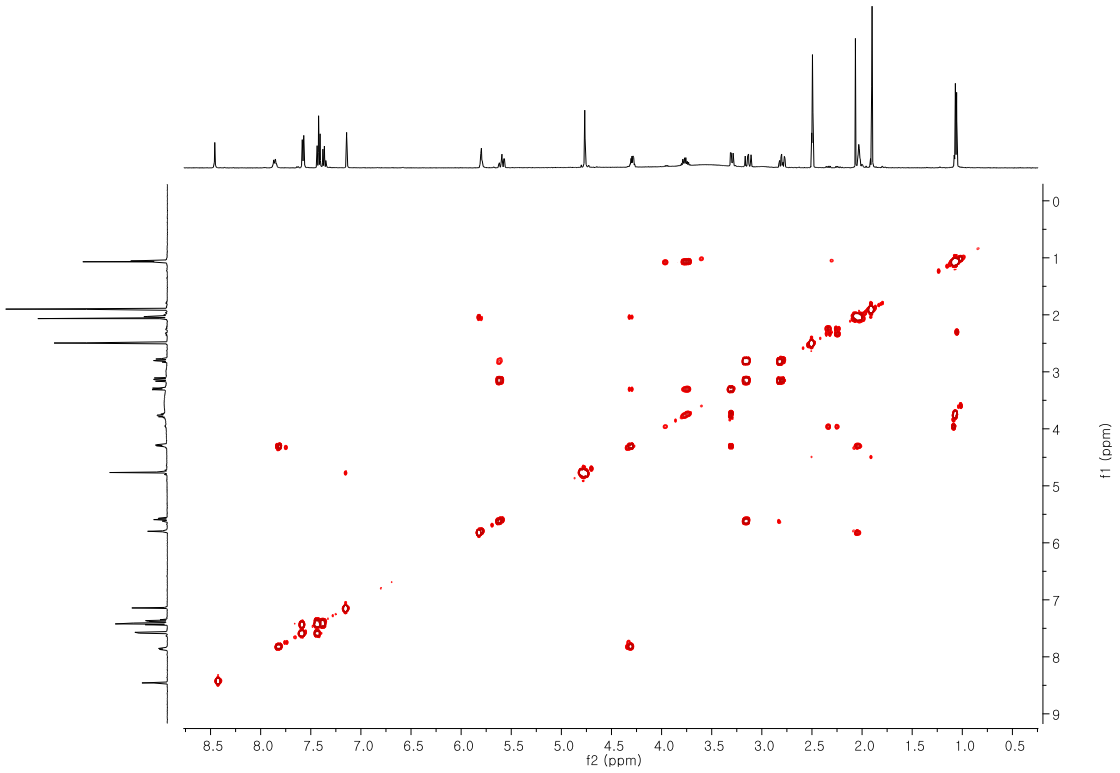


**Figure S10**. COSY NMR spectrum of actinoflavoside C (**2**) in DMSO.

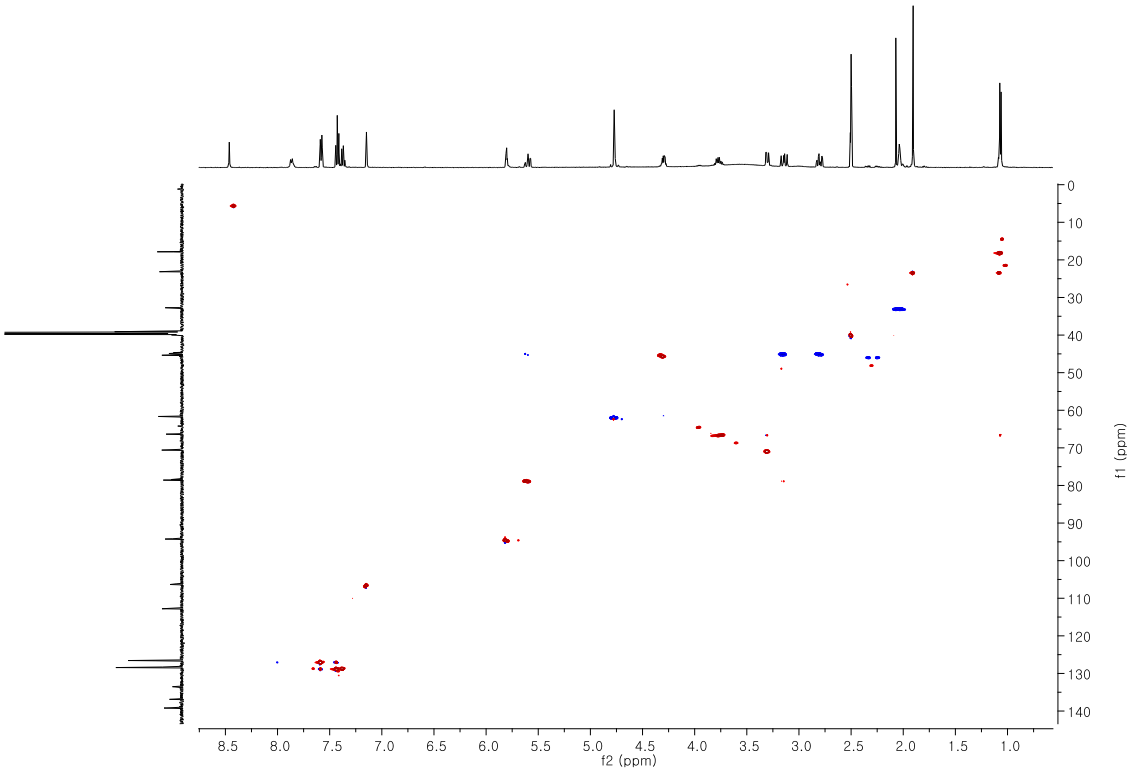


**Figure S11**. HSQC NMR spectrum of actinoflavoside C (**2**) in DMSO.

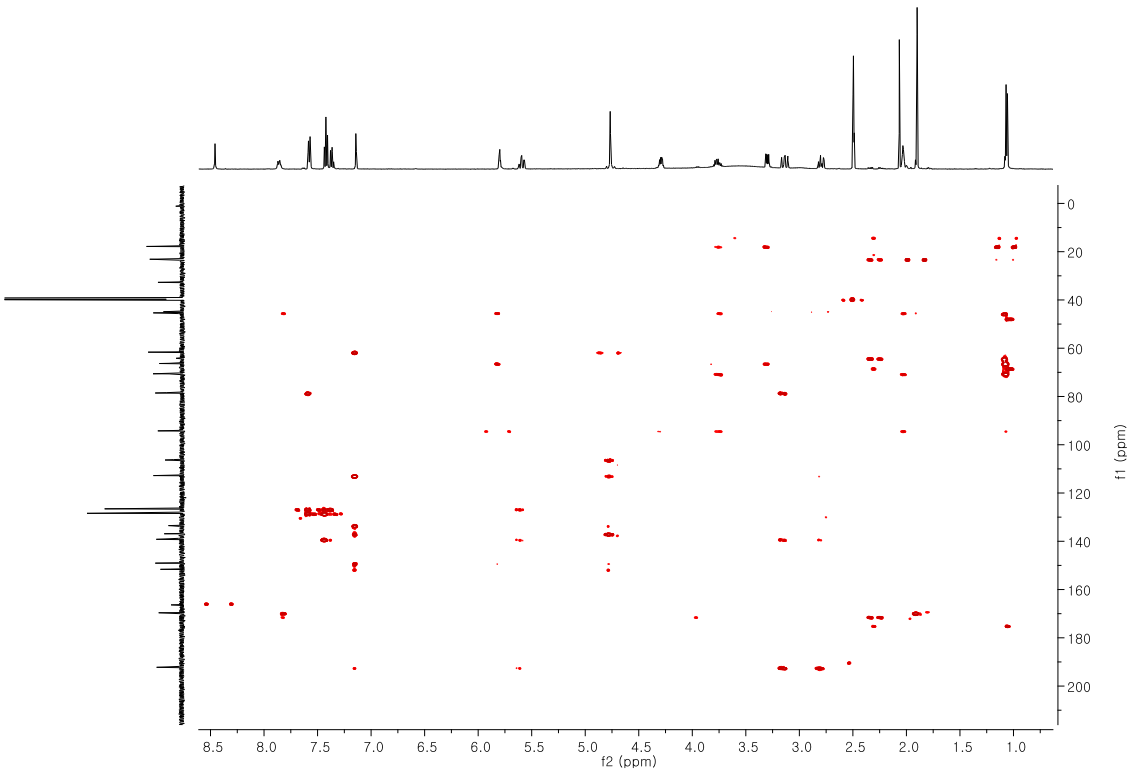


**Figure S12**. HMBC NMR spectrum of actinoflavoside C (**2**) in DMSO.

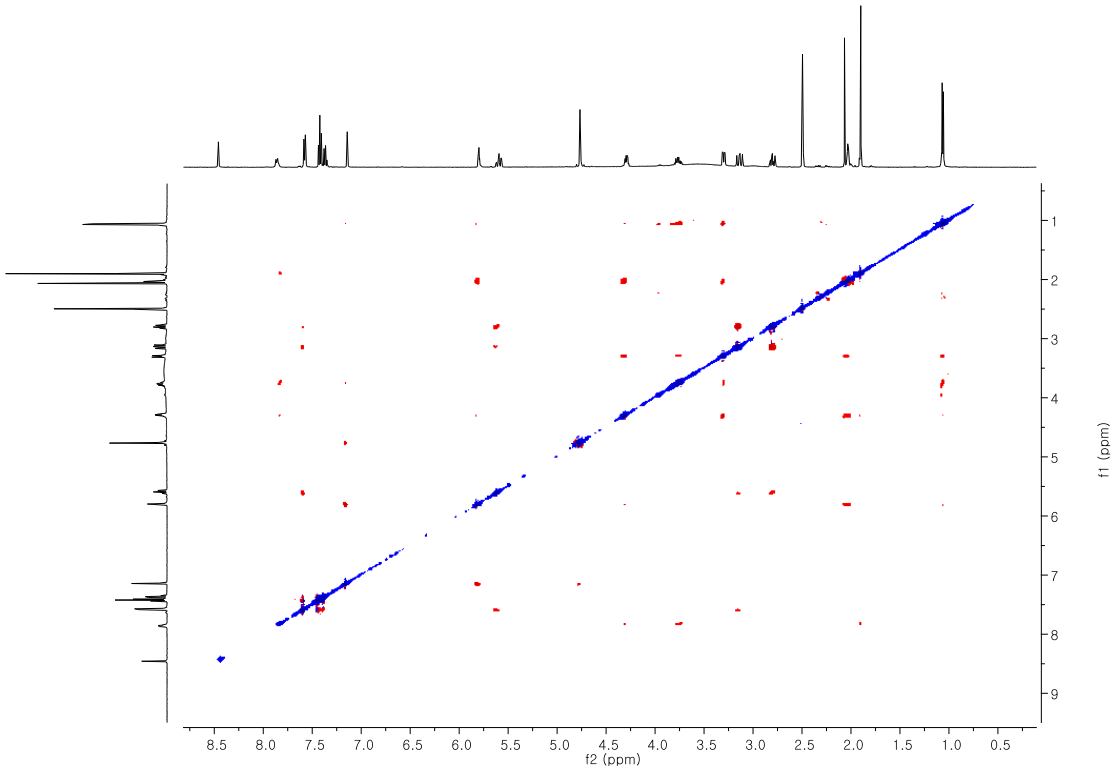


**Figure S13**. ROESY NMR spectrum of actinoflavoside C (**2**) in DMSO.

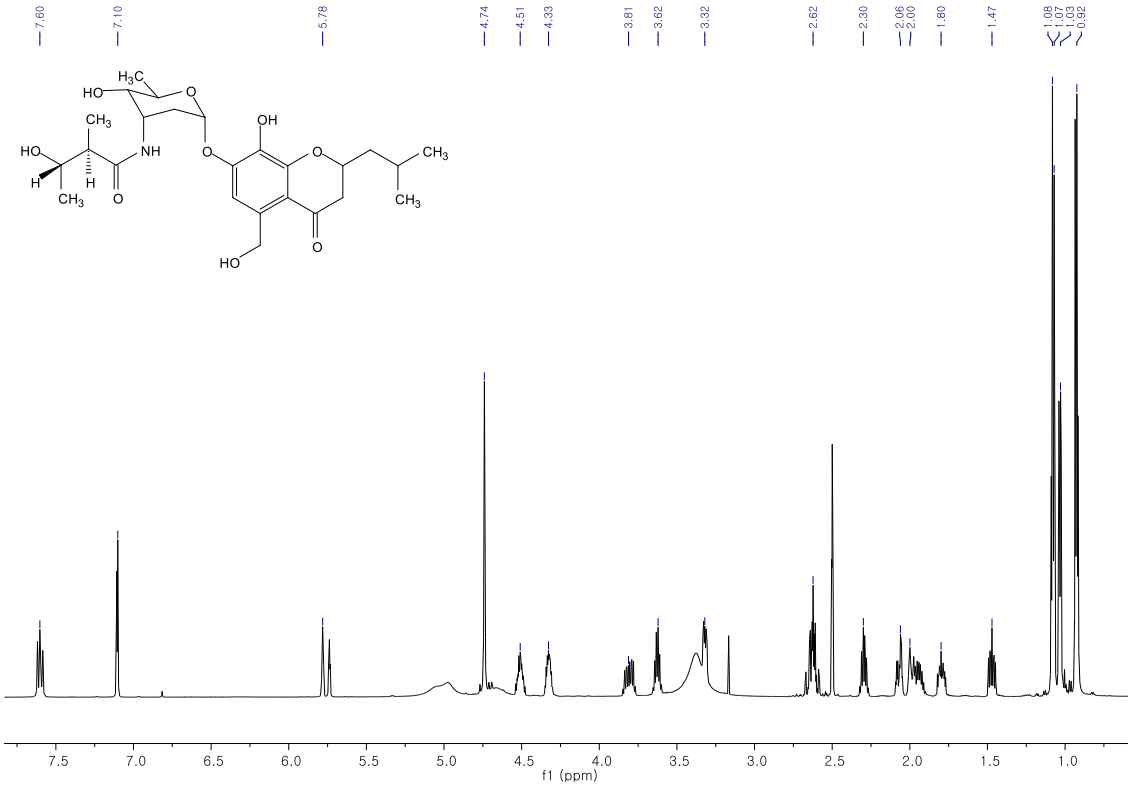


**Figure S14**. $^{1}$H NMR spectrum of actinoflavoside D (**3**) at 600 MHz in DMSO.

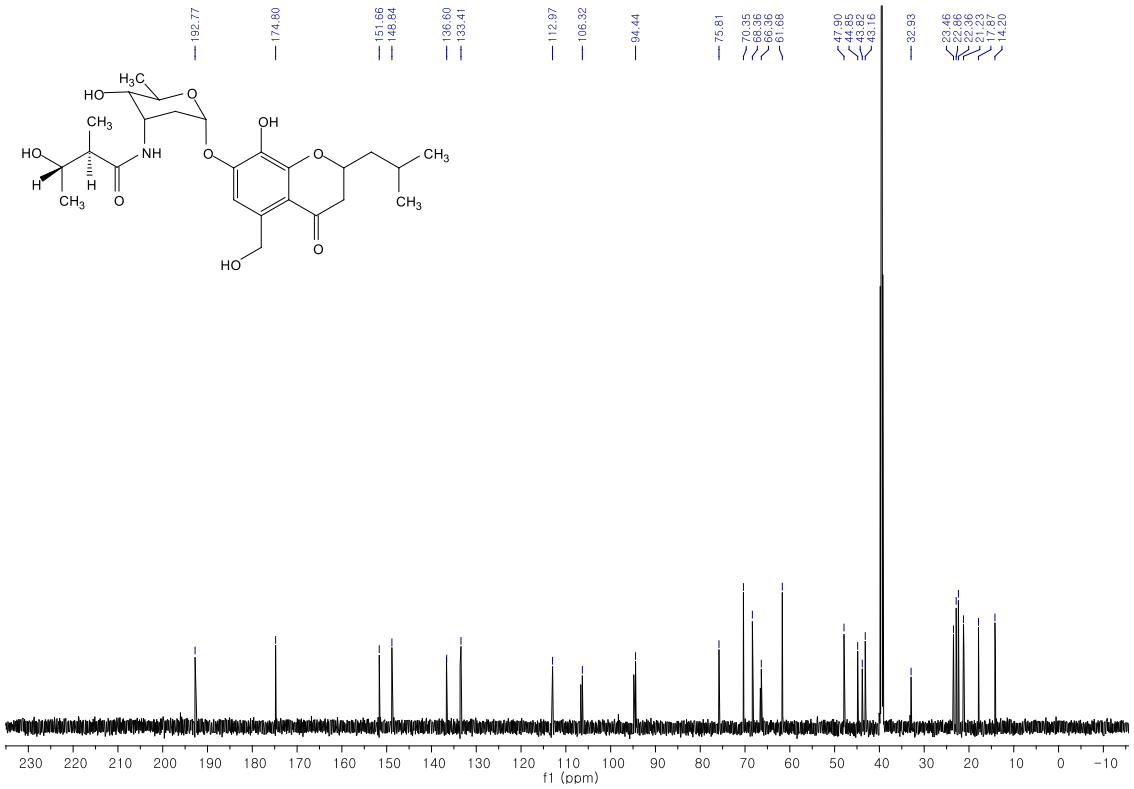


**Figure S15**. $^{13}C$ NMR spectrum of actinoflavoside D (**3**) at 150 MHz in DMSO.

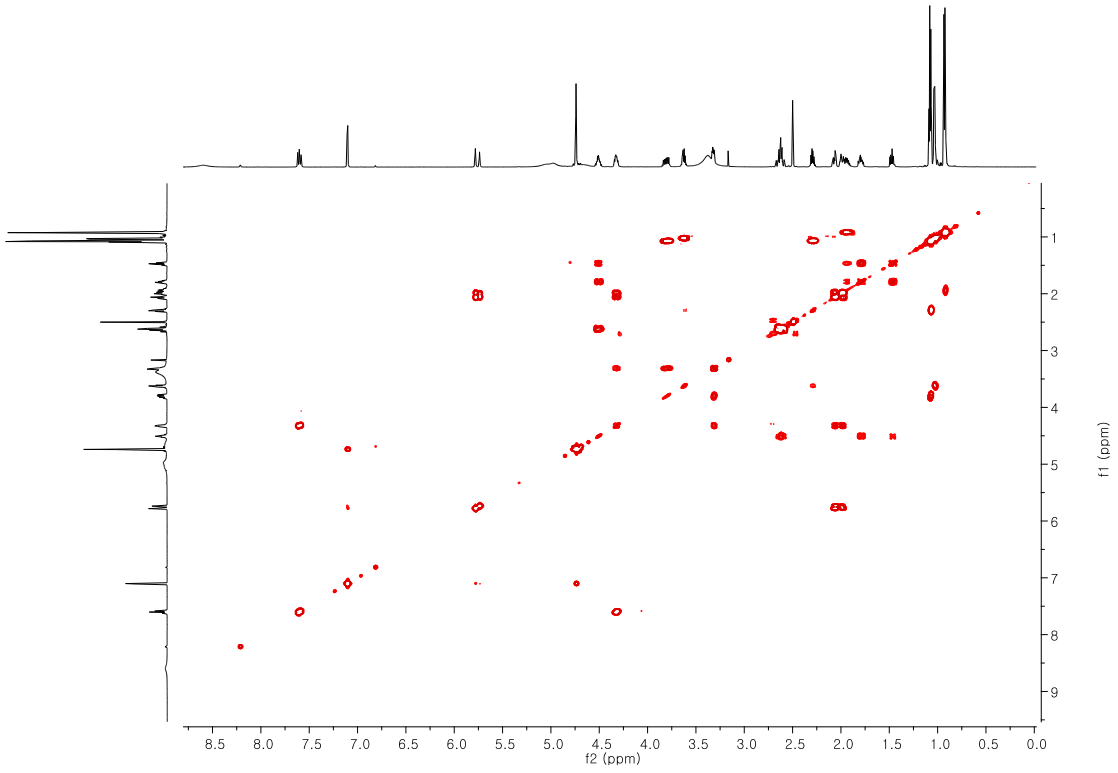


**Figure S16**. COSY NMR spectrum of actinoflavoside D (**3**) in DMSO.

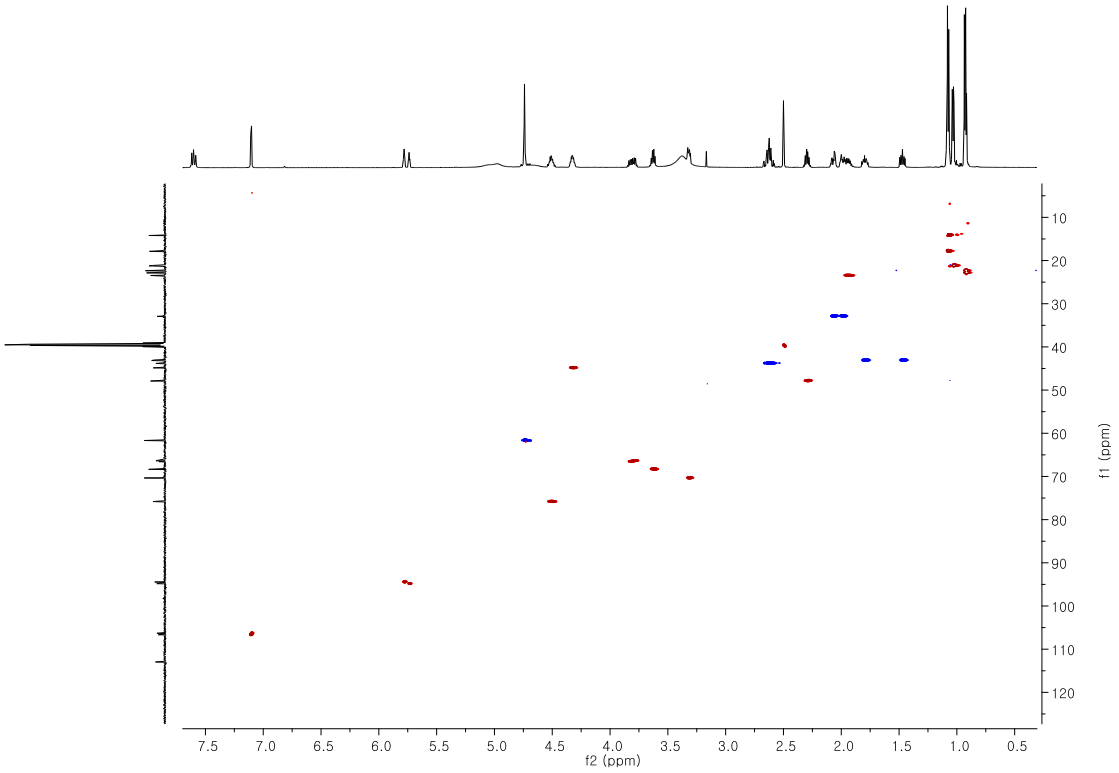


**Figure S17**. HSQC NMR spectrum of actinoflavoside D (**3**) in DMSO.

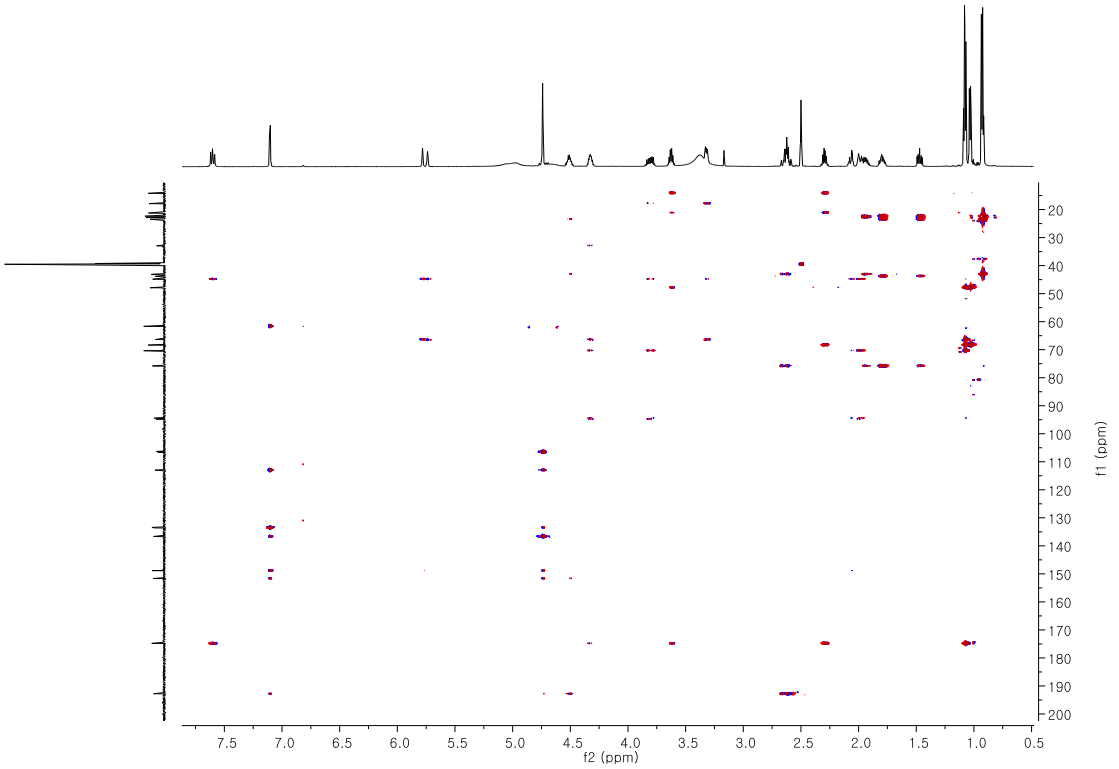


**Figure S18**. HMBC NMR spectrum of actinoflavoside D (**3**) in DMSO.

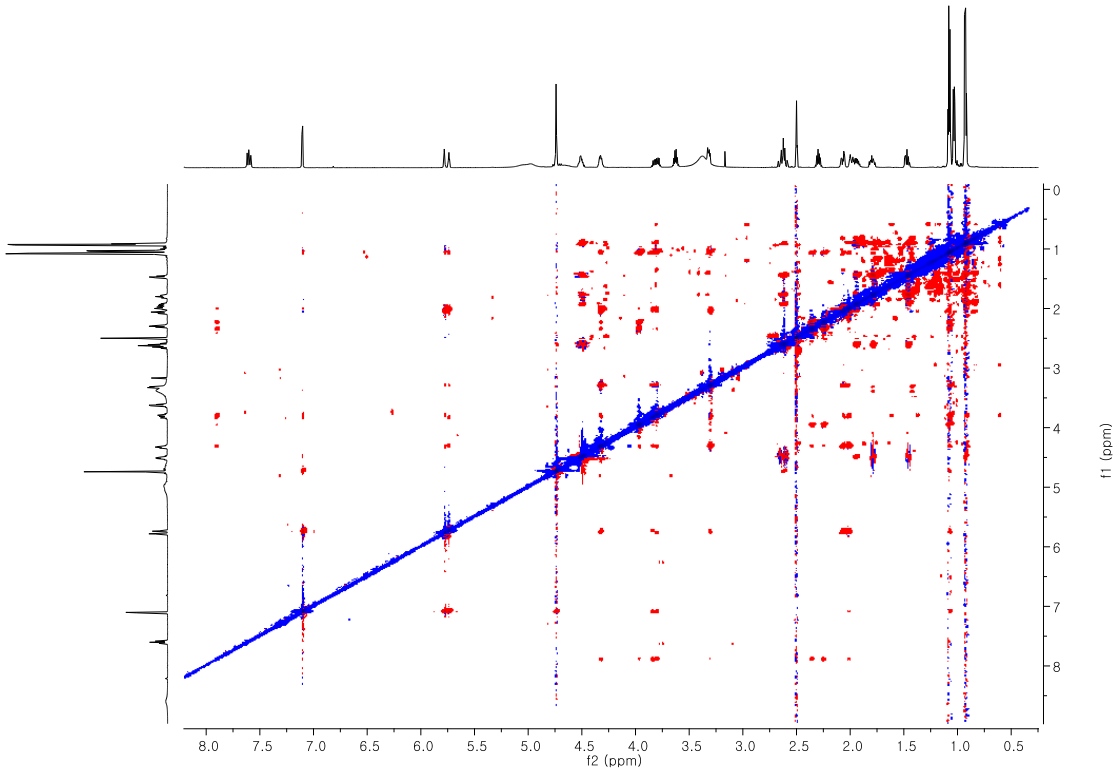


**Figure S19**. ROESY NMR spectrum of actinoflavoside D (**3**) in DMSO.

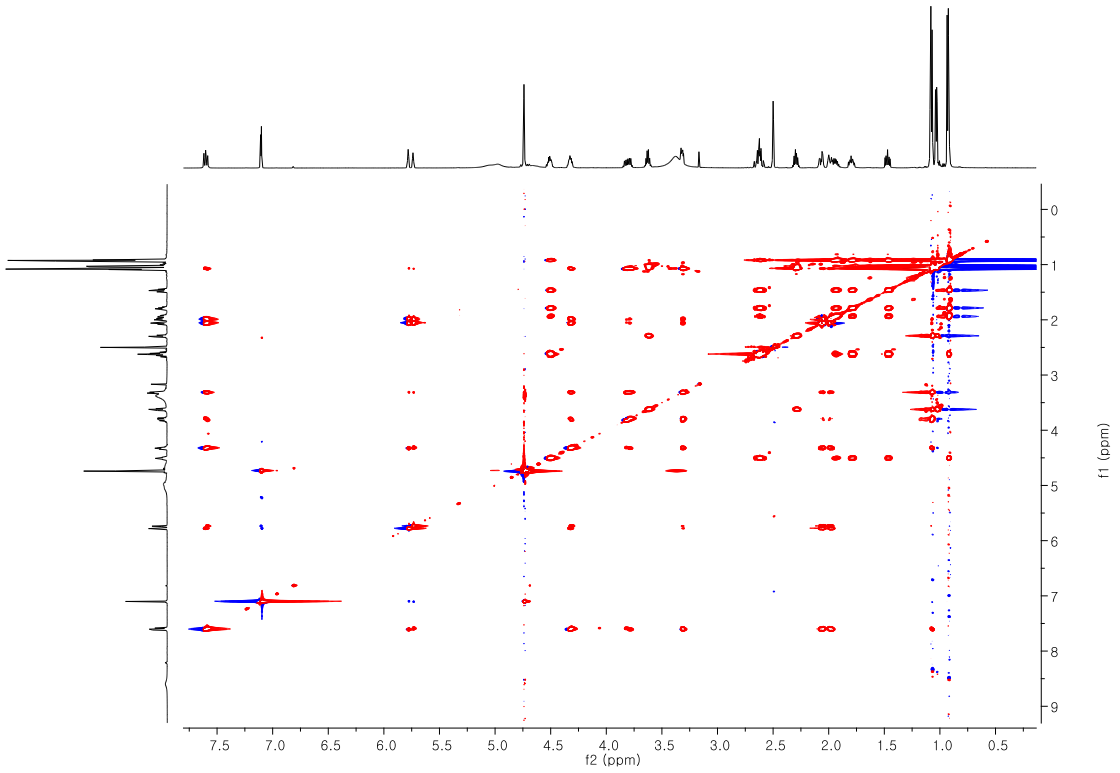


**Figure S20**. TOCSY NMR spectrum of actinoflavoside D (**3**) in DMSO.

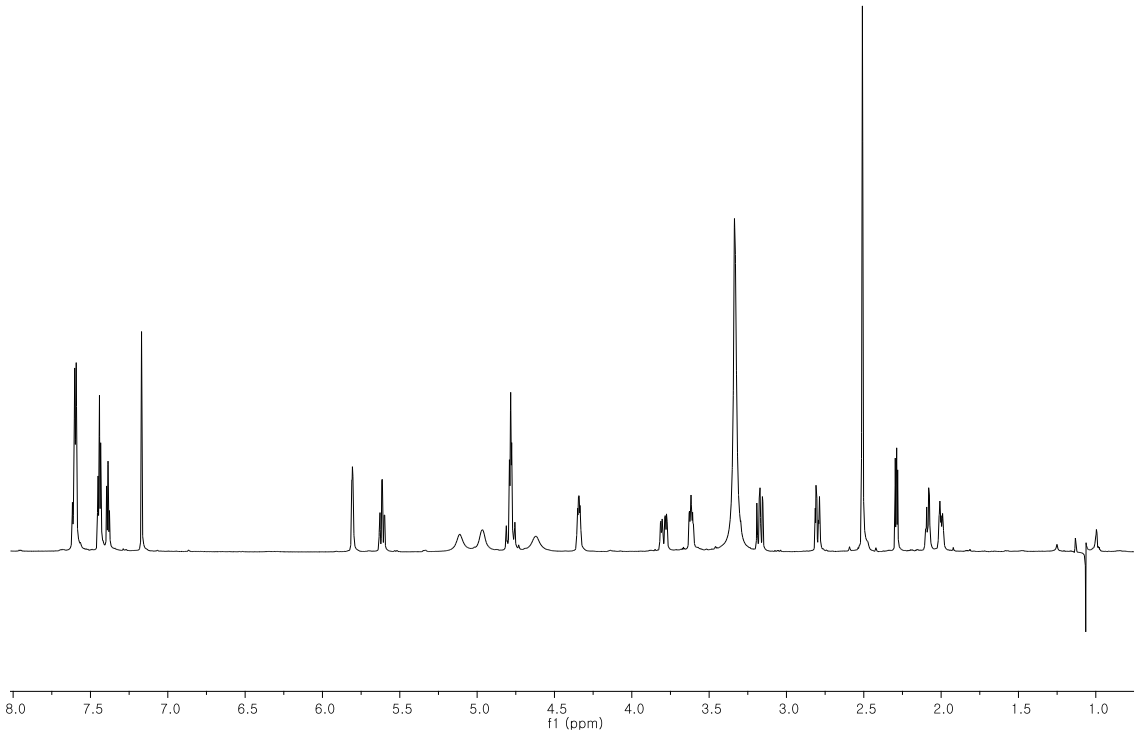


**Figure S21**. Methyl decoupling $^{1}$H NMR spectrum of actinoflavoside B (**1**) at 800 MHz in DMSO.

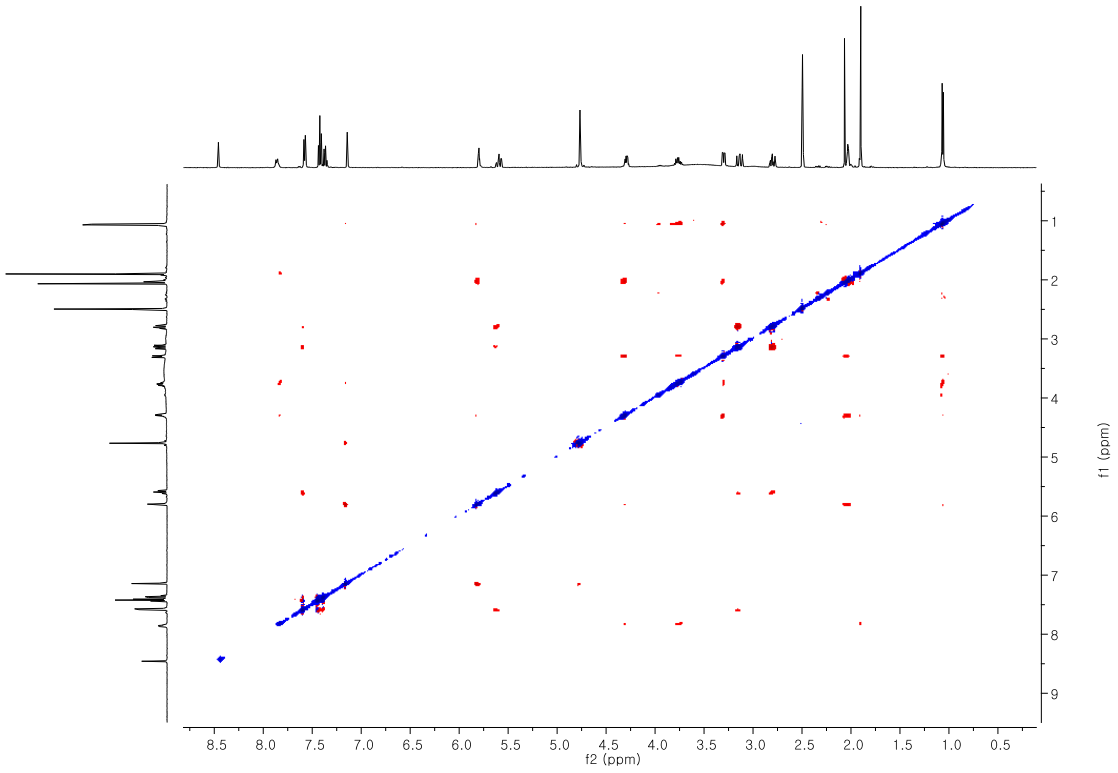


**Figure S22**. DQF-COSY NMR spectrum of actinoflavoside B (**1**) at 800 MHz in DMSO.

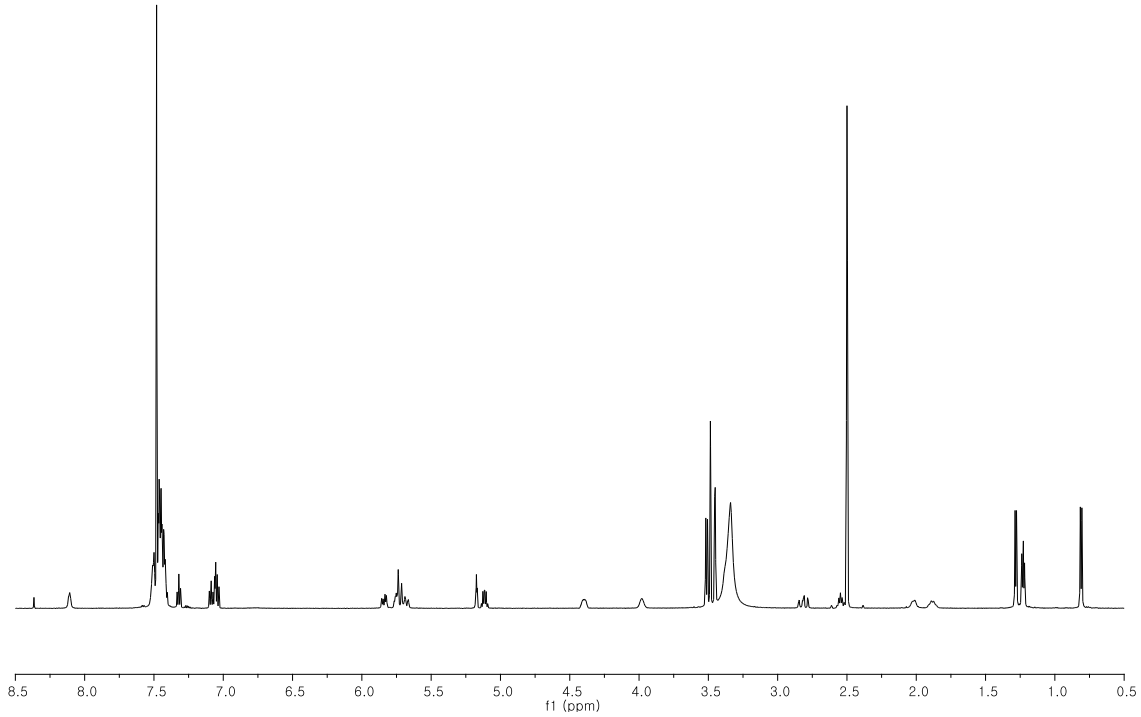


**Figure S23**. $^{1}$H NMR spectrum of S-MTPA ester (**1a**) for actinoflavoside B (**1**) at 600 MHz in DMSO.

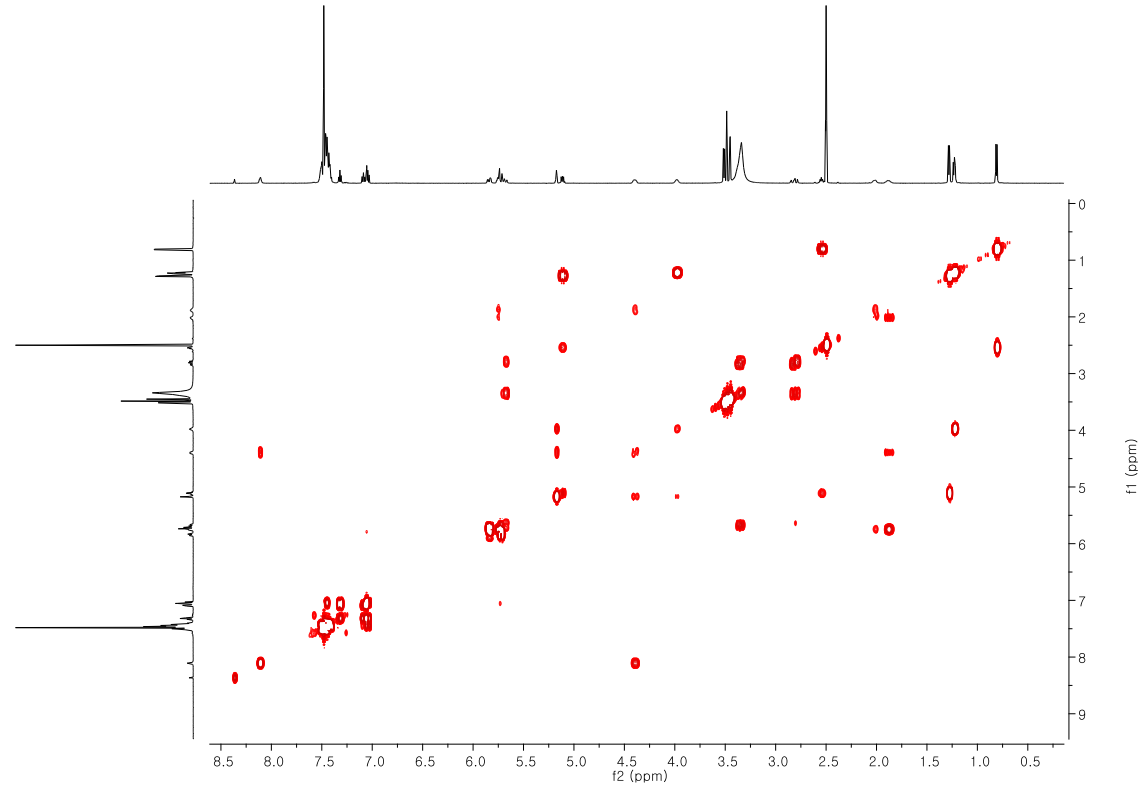


**Figure S24**. COSY NMR spectrum of S-MTPA ester (**1a**) for actinoflavoside B (**1**) at 600 MHz in DMSO.

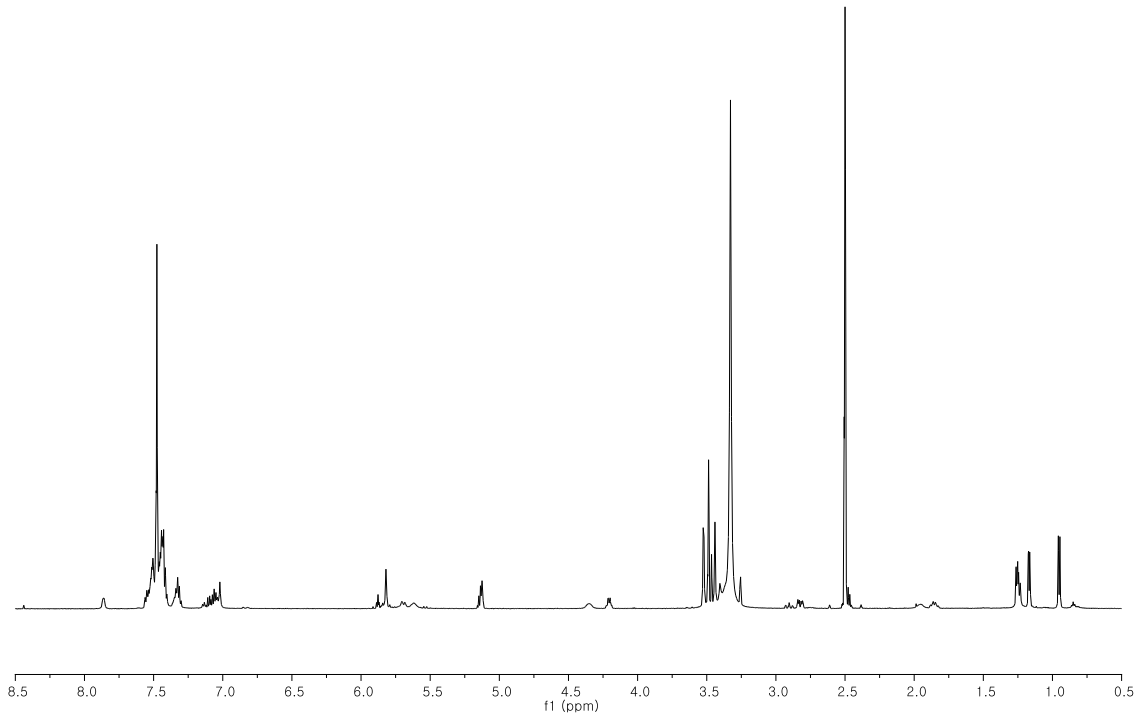


**Figure S25**. $^{1}$H NMR spectrum of R-MTPA ester (**1b**) for actinoflavoside B (**1**) at 600 MHz in DMSO.

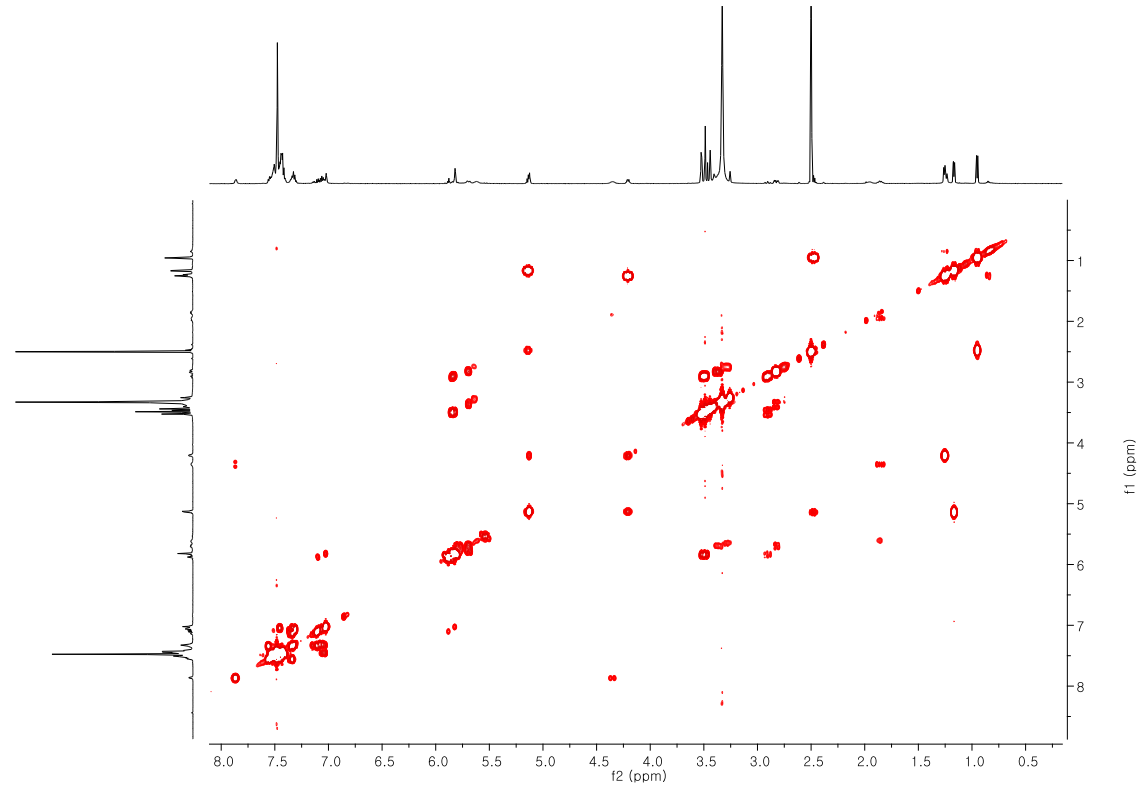


**Figure S26**. COSY NMR spectrum of R-MTPA ester (**1b**) for actinoflavoside B (**1**) at 600 MHz in DMSO.

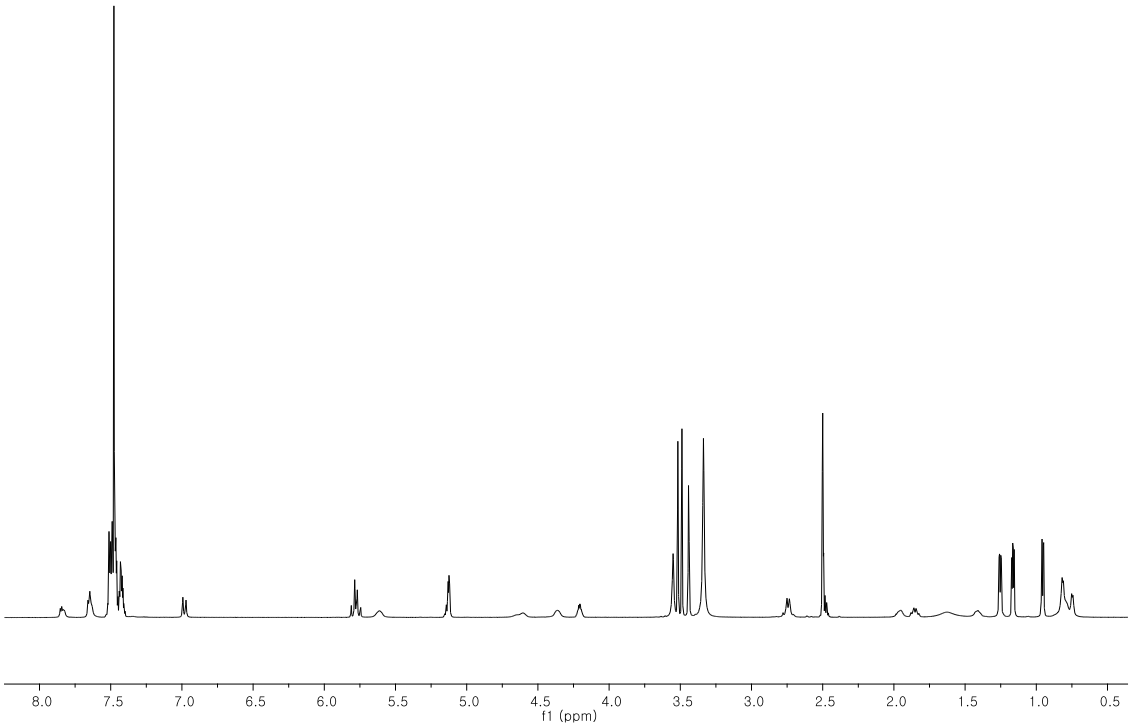


**Figure S27**. $^{1}$H NMR spectrum of S-MTPA ester (**3a**) for actinoflavoside D (**3**) at 600 MHz in DMSO.

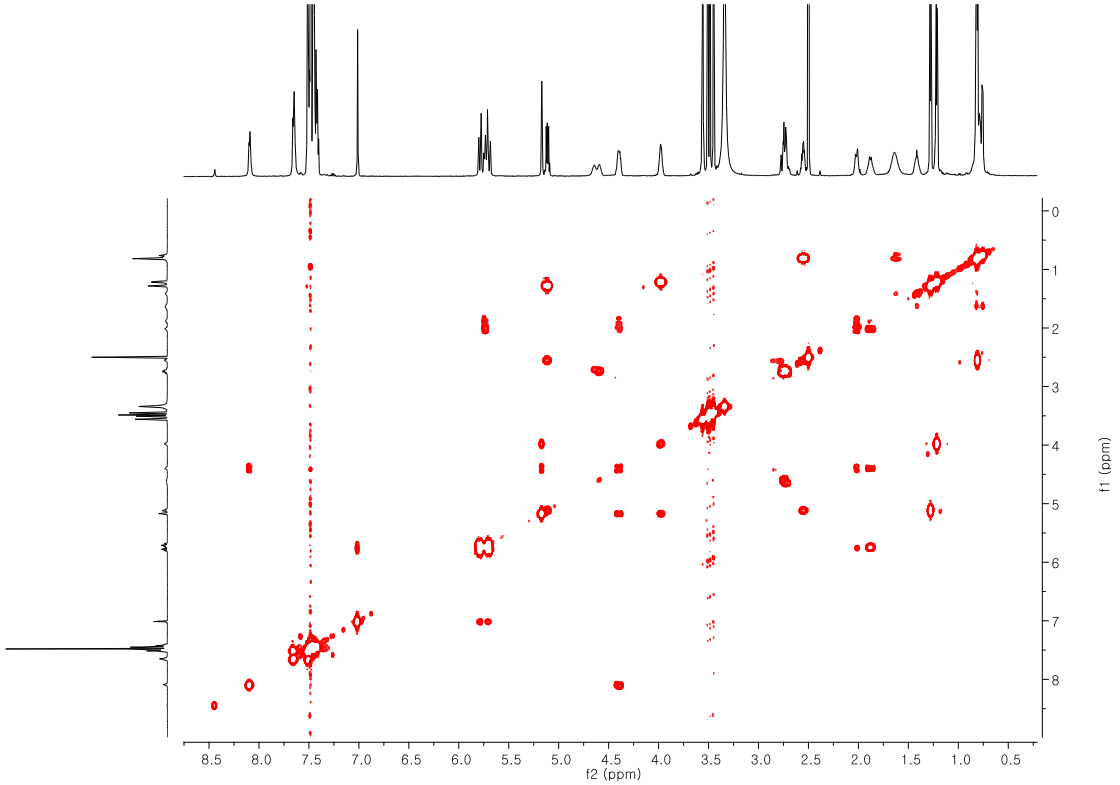


**Figure S28**. COSY NMR spectrum of S-MTPA ester (**3a**) for actinoflavoside D (**3**) at 600 MHz in DMSO.

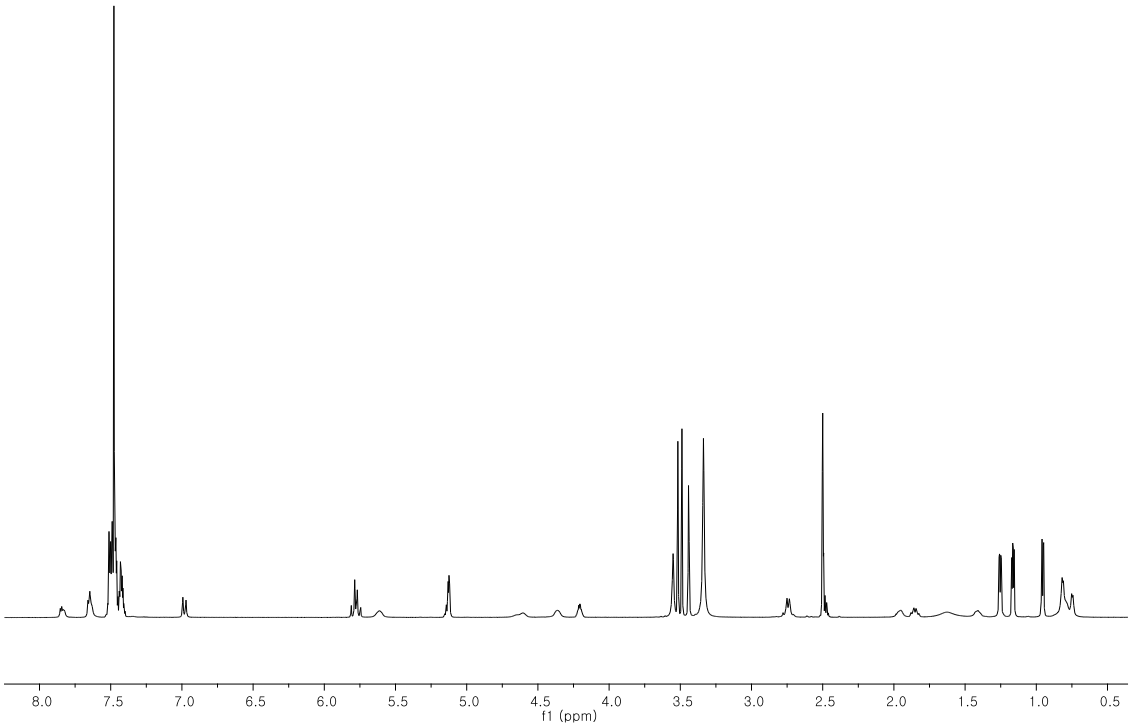


**Figure S29**. $^{1}$H NMR spectrum of R-MTPA ester (**3b**) for actinoflavoside D (**3**) at 600 MHz in DMSO.

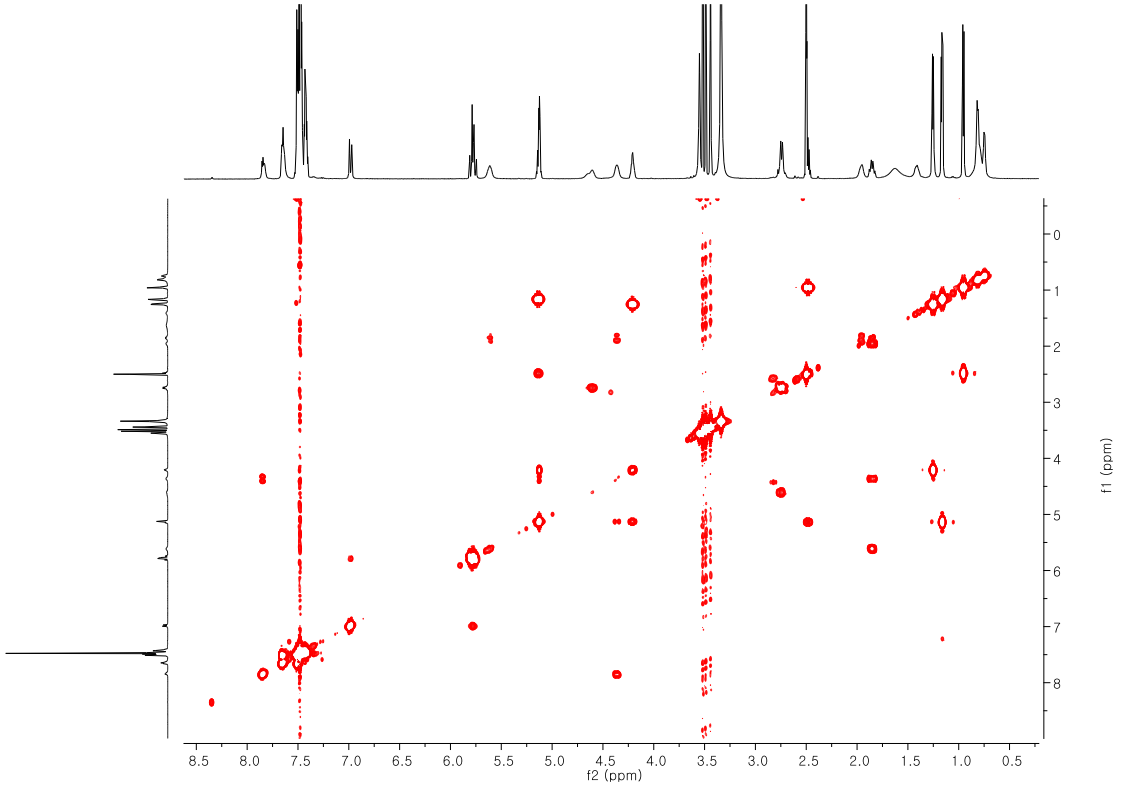


**Figure S30**. COSY NMR spectrum of R-MTPA ester (**3a**) for actinoflavoside D (**3**) at 600 MHz in DMSO.

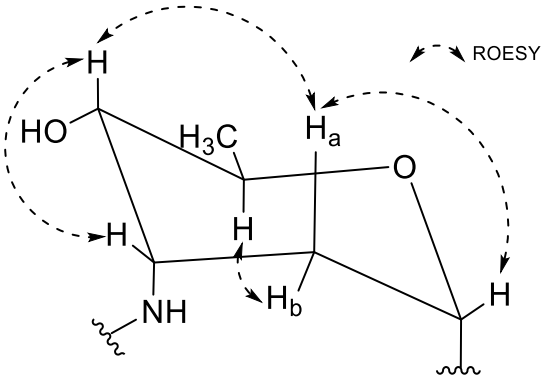


**Figure S31**. Key ROESY correlations of the 2, 3, 6-trideoxyaminosugar of acitnoflavoside B (**1**).

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TCAGCGTCAGTATCGGCCCAGAGATCCGCCTTCGCCACCGGTGTTCCTCCTGATATCTGCGCATTTCACC
GCTACACCAGGAATTCCGATCTCCCCTACCGAACTCTAGCCTGCCCGTATCGACTGCAGACCCGGGGTTA
AGCCCCGGGCTTTCACAACCGACGTGACAAGCCGCCTACGAGCTCTTTACGCCCAATAATTCCGGACAAC
GCTCGCGCCCTACGTATTACCGCGGCTGCTGGCACGTAGTTAGCCGGCGCTTCTTCTGCAGGTACCGTCA
CTTTCGCTTCTTCCCTGCTGAAAGAGGTTTACAACCCGAAGGCCGTCATCCCTCACGCGGCGTCGCTGCA
TCAGGCTTTCGCCCATTGTGCAATATTCCCCACTGCTGCCTCCCGTAGGAGTCTGGGCCGTGTCTCAGTC
CCAGTGTGGCCGGTCGCCCTCTCAGGCCGGCTACCCGTCGTCGCCTTGGTGAGCCATTACCTCACCAACA
AGCTGATAGGCCGCGGGCTCATCCTGCACCGCCGGAGCTTTCGAACCTCACAGATGCCCGTGAGGGTCAG
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AACGGCAAAAAACCTTAACCAAGGCTTGGAATACACCGGGAAAACCATAGAAAATAGTGCCCCCCCTTGG
GGCCGGGGACAAGGTGGTGCAAGGGTATCCCTCCCCCCCCTGGCCCGGAAAAATTGGGGGTAATTCCCTC
CCAAAGGGGCAACCCATGTGTCGCTGGTGTGCCCGCAAGACACTCTCTGTGTGGTGTGGGAGAGCTCTCG
AACACACCCCGCGGCGGAATCTCACAGGAAAAGGGTGGAGCGACCACTCAATCCACATCCACCCCCCCCT
CTTATTGGGGGGGGGGAAAT

**Figure S32**. 16S rDNA sequence data of JML48.

GGGGGGCGACGTTGGGACTAGGTGTTGGCGACATTCCACGTCGTCGGTGCCGCAGCTAACGCATTAAGTT
CCCCGCCTGGGGAGTACGGCCGCAAGGCTAAAACTCAAAGGAATTGACGGGGGCCCGCACAAGCAGCGGA
GCATGTGGCTTAATTCGACGCAACGCGAAGAACCTTACCAAGGCTTGACATACACCGGAAAGCATCAGAG
ATGGTGCCCCCCTTGTGGTCGGTGTACAGGTGGTGCATGGCTGTCGTCAGCTCGTGTCGTGAGATGTTGG
GTTAAGTCCCGCAACGAGCGCAACCCTTGTTCTGTGTTGCCAGCATGCCCTTCGGGGTGATGGGGACTCA
CAGGAGACTGCCGGGGTCAACTCGGAGGAAGGTGGGGACGACGTCAAGTCATCATGCCCCTTATGTCTTG
GGCTGCACACGTGCTACAATGGCCGGTACAATGAGCTGCGATGCCGCGAGGCGGAGCGAATCTCAAAAAG
CCGGTCTCAGTTCGGATTGGGGTCTGCAACTCGACCCCATGAAGTCGGAGTTGCTAGTAATCGCAGATCA
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CCGAAGCCGGTGGCCCAACCCCTTGTGGGAGGGAGCTGTCGAAGGTGGGACTGGCGATTGGGACGAAGTC
GTAACAAGGTAGCCGTACCGGAAGGTGCGGCTGGATCCCCCCCCCTTTTTATAAAAAAAAAAATTGGTTG
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**Figure S33**. 16S rDNA sequence data of JMS33.

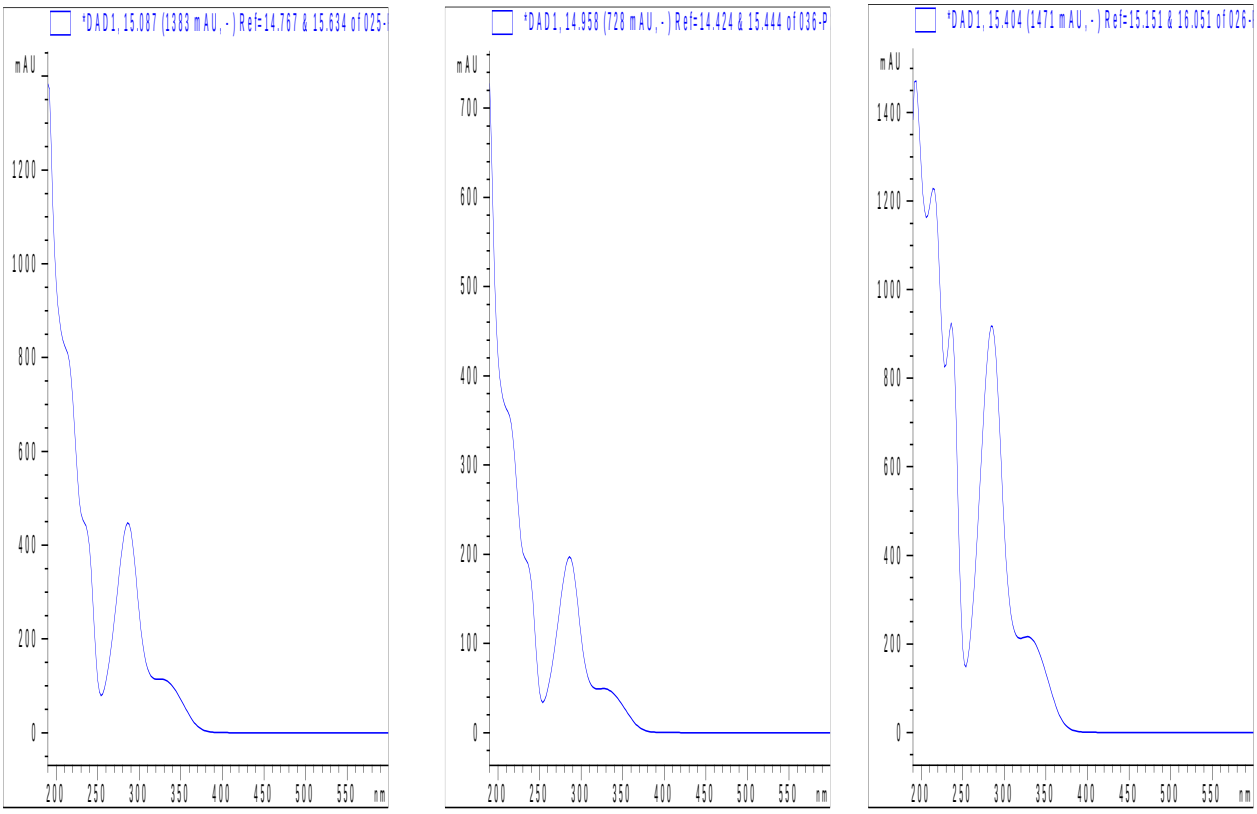


**Figure S34**. UV spectrum of actinoflavoside B-D (**1-3**).

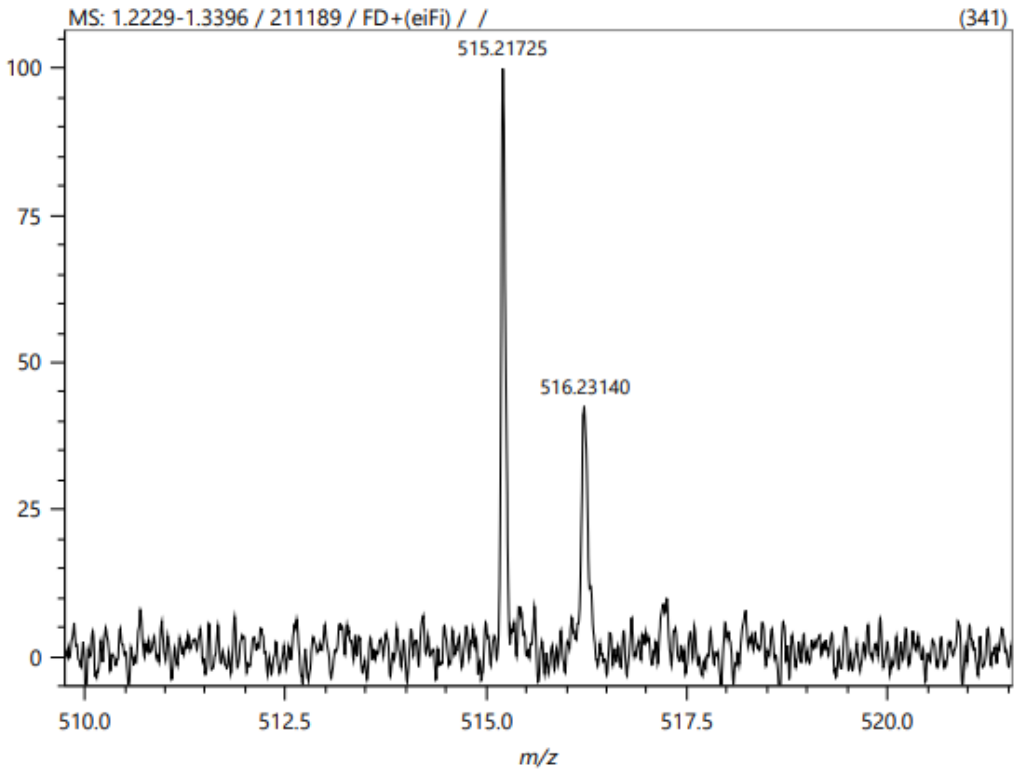


**Figure S35**. HR-TOF-MS data of actinoflavosdie B (**1**).

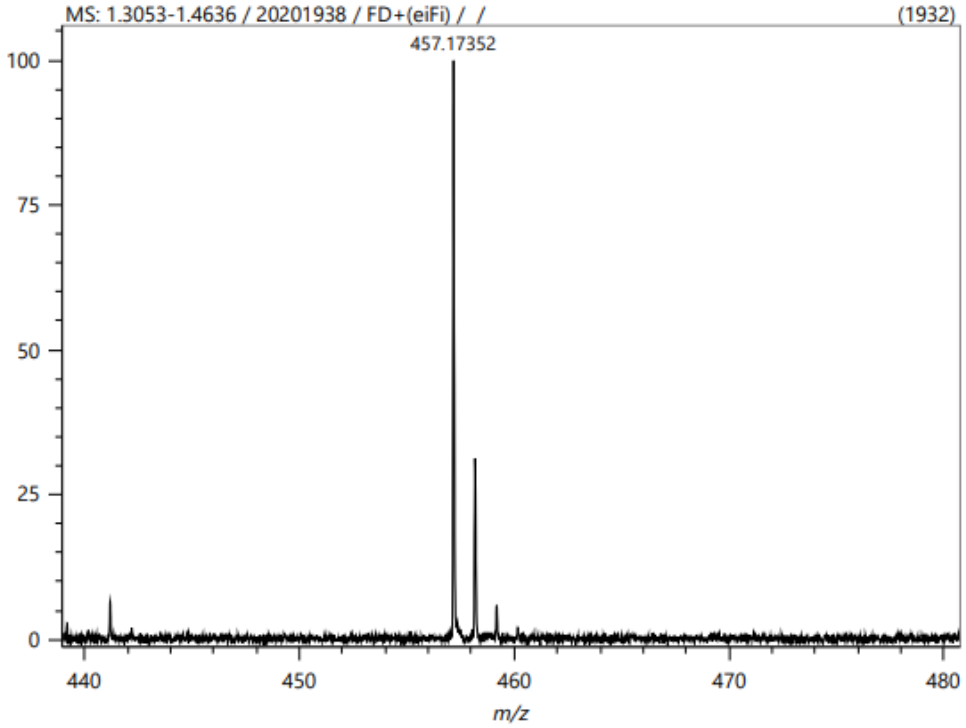


**Figure S36**. HR-TOF-MS data of actinoflavosdie C (**2**).

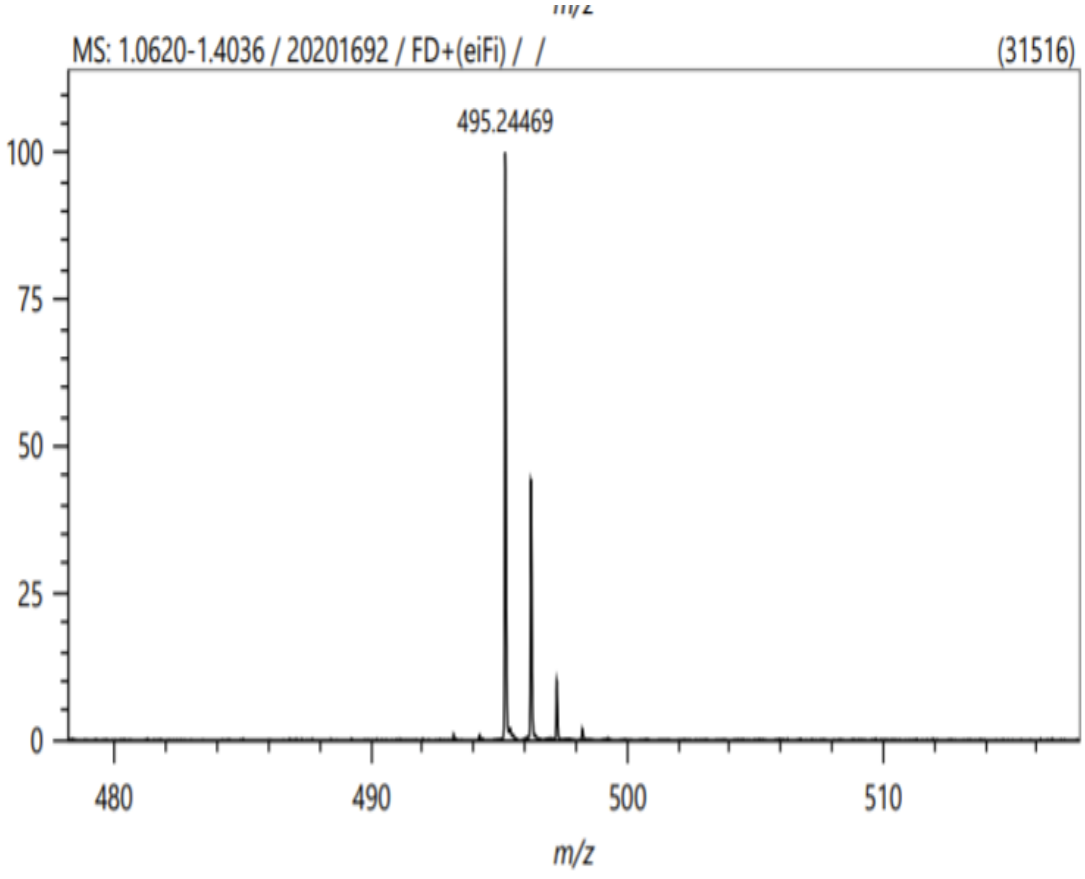


**Figure S37**. HR-TOF-MS data of actinoflavosdie D (**3**).

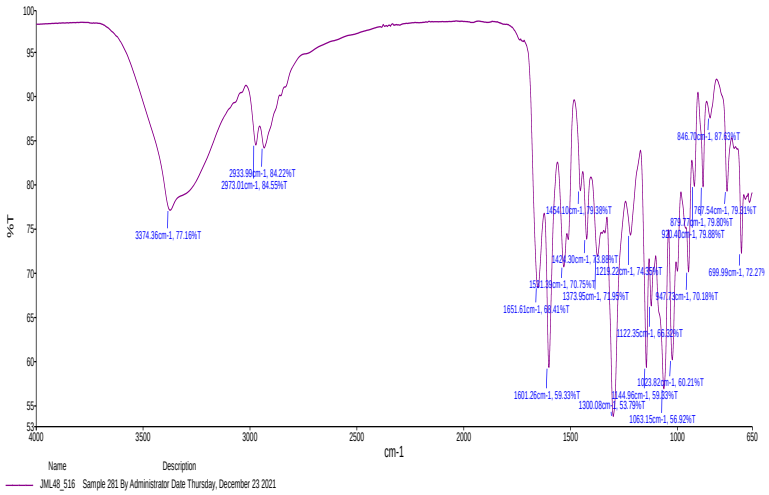


**Figure S38**. IR spectrum of actinoflavosdie B (**1**).

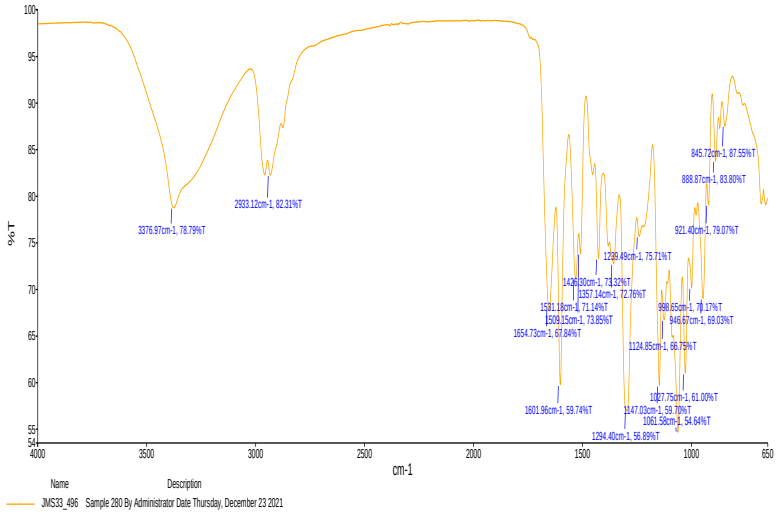


**Figure S39**. IR spectrum of actinoflavosdie C (**2**).

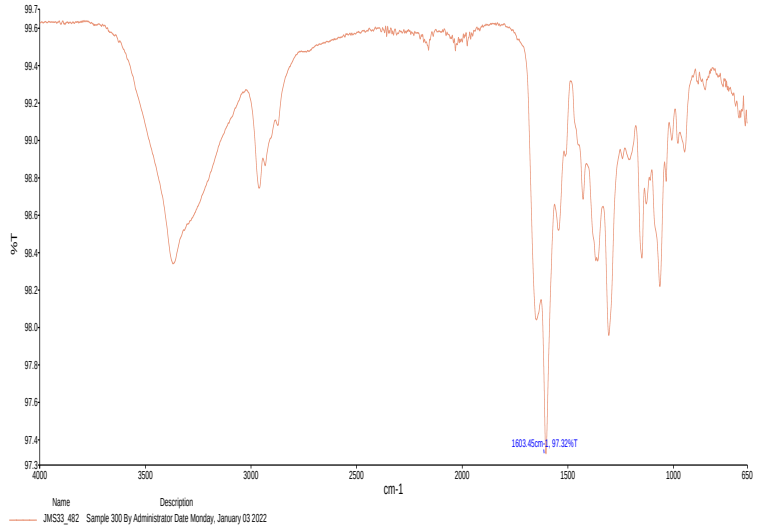


**Figure S40**. IR spectrum of actinoflavosdie D (**3**).

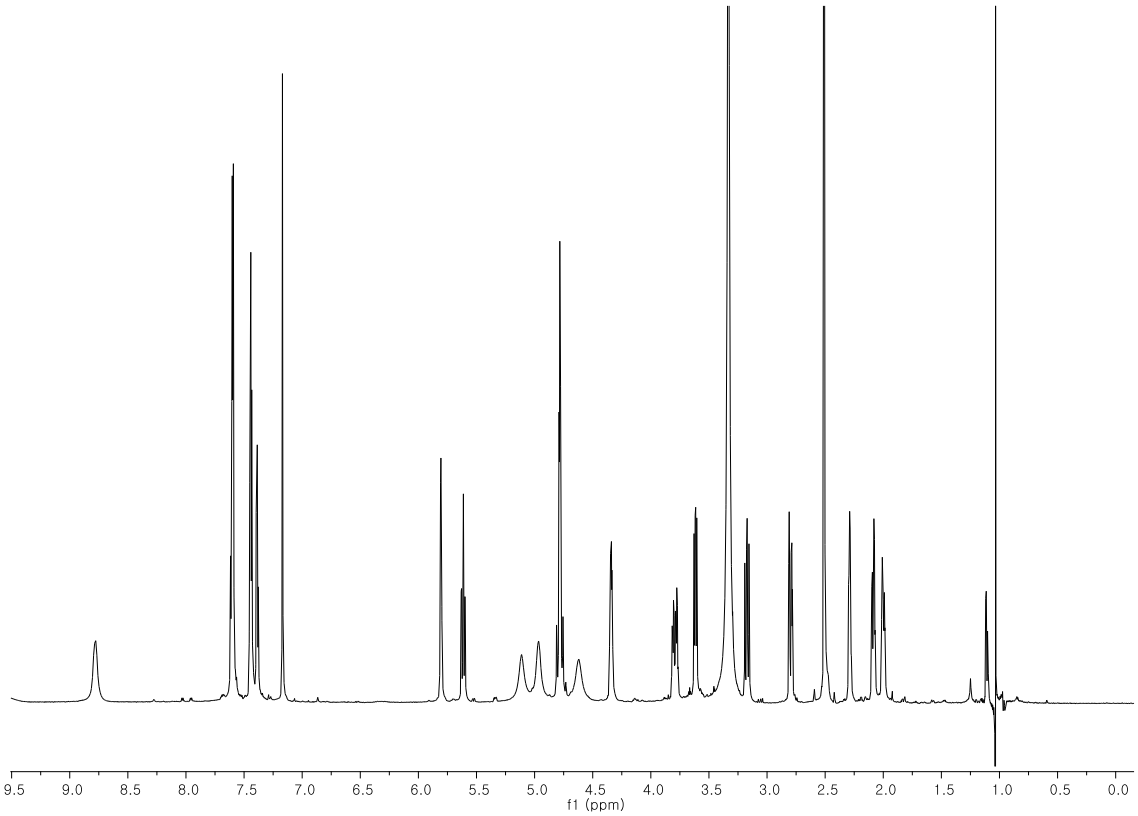


**Figure S41**. H-4‴ decoupling $^{1}$H NMR spectrum (800 MHz) of actinoflavoside B (**1**) in DMSO.

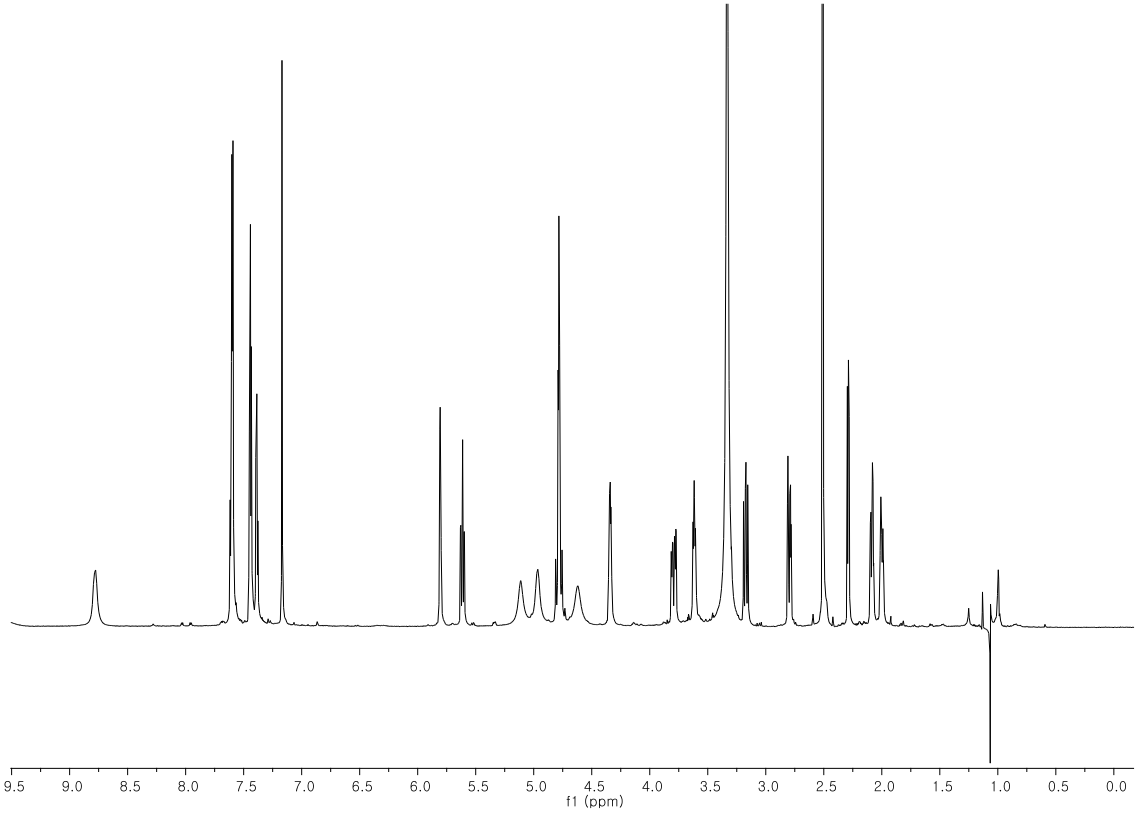


**Figure S42**. H-5‴ decoupling $^{1}$H NMR spectrum (800 MHz) of actinoflavoside B (**1**) in DMSO.

| Compound | MIC (mM) | | | |
|---|---|---|---|---|
| | Gram (+) Bacteria | | Gram (-) negative | |
| | ***B. subtilis*** **ATCC 6051** | ***P. aeruginosa*** **KCTC 22073** | ***E. coli*** **ATCC 11775** | ***Er. rhapontici*** **ATCC 29283** |
| **1** | 0.14 | 0.29 | - | - |
| **2** | - | - | - | - |
| **3** | - | 0.3 | - | - |
| Gentamicin | 0.42 | 0.42 | 0.42 | 0.42 |

**Table S1**. Minimum inhibitory concentration (MIC) of **1–3** against Gram-positive and Gram-negative bacterial strains.