Supporting Information to:

Two New Drimane Sesquiterpenes, Fudecadiones A and B, from the Soil Fungus *Penicillium* sp. BCC 17468

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Materials and methods
*Fungus material and identification*
The fungus was isolated from the soil collected at Khao Yai National Park, Nakhon Ratchasima, Thailand. It was registered as BCC 17468 at BIOTEC Culture Collection and identified based on its 18S rDNA, 28S rDNA, and ITS region sequences, which were amplified using the universal primers NS1–NS6, JS1–JS8, and ITS4–ITS5 [1, 2]. BLAST (Basic Local Alignment Search Tool) and pairwise alignment were used for searching sequences similar to their 18S rDNA, 28S rDNA, and ITS sequences. The sequence identities of 99.84–99.92% for 18S rDNA, 99.27–99.63% for 28S rDNA, and 98.68–99.42% for the ITS region were matched with 10 fungal sequences from GenBank, comprising *Penicillium*
simplicissimum (GQ241286, AB293968, EU833221, AJ608945, AY373921, AY818090, and EF634424) and Penicillium sp. (AY391830, AY1831, and AY391833). Therefore, based on analyses of the DNA sequences together with the morphological structure in the culture, the fungus BCC 17468 could be identified as Penicillium sp. (class Eurotiomycetes, subclass Eurotiomycetidae, order Eurotiales, family Trichocomaceae). The 18S rDNA, 28S rDNA, and ITS sequence data have been submitted to GenBank databases (accession numbers GU809208, GU809209, and GU809210).

Semi-synthesis of compound 2

Compound 1 (1.10 mg) was heated at 70 °C with excess succinic anhydride in Et3N (1 mL) for 2 days. The mixture was evaporated to dryness and purified by semi-preparative HPLC (using a Sunfire C18 column, size 19 × 150 mm; 5 μm) on a Dionex Ultimate 3000 HPLC machine, using a 5% to 50% gradient mixture of CH3CN and H2O (within 20 min) as the mobile phase at a flow rate of 10 mL/min. Compound 2 (0.59 mg) was obtained as a colorless oil.

References


Fig. 1S 1H-NMR spectrum of compound 1 in DMSO-d6.
Fig. 2S 13C-NMR spectrum of compound 1 in DMSO-d6.
Fig. 3S 13C-NMR and DEPT-135 spectra of compound 1 in DMSO-d6.
Fig. 4S COSY spectrum of compound 1 in DMSO-d6.
Fig. 5S HMQC spectra of compound 1 in DMSO-d6.
Fig. 6S HMBC spectra of compound 1 in DMSO-d6.
Fig. 7S NOESY spectra of compound 1 in DMSO-d6.
Fig. 8S 1H-NMR spectrum of compound 2 in CDCl3.
Fig. 9S 13C-NMR spectra of compound 2 in CDCl3.
Fig. 10S HMQC spectra of compound 2 in CDCl3.
Fig. 11S COSY spectra of compound 2 in CDCl3.
Fig. 12S HMBC spectra of compound 2 in CDCl3.
Fig. 13S NOESY spectrum of compound 2 in CDCl$_3$.

Fig. 14S $^1$H-NMR spectrum of compound 3 in DMSO-$d_6$.

Fig. 15S $^{13}$C-NMR spectrum of compound 3 in DMSO-$d_6$.

Fig. 16S $^1$H-NMR spectrum of compound 4 in DMSO-$d_6$.

Fig. 17S $^{13}$C-NMR spectrum of compound 4 in DMSO-$d_6$.

Fig. 18S $^1$H-NMR spectrum of compound 5 in DMSO-$d_6$.

Fig. 19S $^{13}$C-NMR spectrum of compound 5 in DMSO-$d_6$. 