Depsidones and a γ-butenolide from *Simplicillium* sp. PSU-H168, an endophytic fungus from *Hevea brasiliensis* leaves

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Abstract: Endophytic fungi in the genus *Simplicillium* have produced natural products with a variety of chemical structures and interesting antimicrobial activities, for example, antibacterial aogacillins A and B, antibacterial halymecin F, and antifungal preussin B. The endophytic fungus *Simplicillium* sp. PSU-H168 was isolated from a leaf of *Hevea brasiliensis*, collected in Songkhla Province, Thailand. Purification of the broth ethyl acetate extract afforded four known compounds including three depsidone derivatives, botryorhodine C (1) and simpilcildones A (2) and B (3), and one known γ-butenolide derivative, penicillic acid (4). Their structures were elucidated by the combination of spectroscopic data and by comparison of the ¹H and ¹³C NMR spectroscopic data with those previously reported in the literature. The absolute configuration of 4 was assigned on the basis of similar circular dichroism data to those of dihydropenicillic acid. Among them, compounds 1 and 2 displayed antibacterial activity against *Staphylococcus aureus* with equal MIC values of 32 µg/mL.

![Chemical structures](image)

**Keywords:** *Simplicillium* sp.; *Hevea brasiliensis*; Depsidones; γ-Butenolide