Depsidone derivatives from the marine-derived fungus

Aspergillus unguis PSU-MF16

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Abstract: The genus Aspergillus has the efficiency to produce various bioactive natural products including cytotoxic aspergillussidone A, antiviral aspergillipeptide D, antibacterial aspergillin PZ and antifungal aspergillusether D. Five depsidones were obtained from the broth ethyl acetate extract of the marine-derived fungus Aspergillus unguis PSU-MF16 which was isolated from a sponge in the genus Dysidea. Based on analysis of spectroscopic data, their structures were elucidated as unguinol (1), 2-chlorounguinol (2), aspergillussidone C (3), nornidulin (4) and nidulin (5). Compounds 2 and 3 exhibited antibacterial activity against methicillin-resistant Staphylococcus aureus with MIC values of 1 and 8 µg/mL, respectively. Only 3 displayed antimalarial (Plasmodium falciparum, K1 strain) and anticancer (MCF-7 cells) activities with IC₅₀ values of 2.17 and 12.02 µg/mL, respectively.

Keywords: Depsidone derivatives; Marine-derived fungus; Aspergillus unguis