



Didemnaketals D and E, Bioactive Terpenoids from a Red Sea Ascidian *Didemnum* Species

Gamal A. Mohamed, Sabrin R.M. Ibrahim, Jihan M. Badr, Daa T.A. Youssef

Abstract:

Two new spiroketals, didemnaketals D (1) and E (2) were isolated from a marine ascidian species belonging to the genus *Didemnum*. The structures of the compounds were elucidated by extensive 1D (¹H, ¹³C, and DEPT) and 2D (COSY, TOCSY, HSQC, HMBC, NOESY, and ROESY) NMR studies and high-resolution mass spectroscopic data. The new didemnaketals differ from the reported ones in which that they lack the methyl functionality at C-6 and the hydroxy moiety at C-21. Instead, they possess an ester moiety at C-6 in addition to new oxygen functionality at C-20 of the didemnaketals. Compounds 1 and 2 were evaluated for their protein kinase inhibitory activity against different kinases (CDK5, CK1, DyrK1A, and GSK3) at 10 µg/mL. Compounds 1 and 2 showed moderate activity against these kinases. In addition, the compounds displayed moderate antimicrobial activity against *Staphylococcus aureus* and *Bacillus subtilis*, respectively.

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