World Academy of Science, Engineering and Technology
International Journal of Pharmacological and Pharmaceutical Sciences
Vol:9, No:09, 2015

Mansonone G and Its Ether Analogues as New Antibacterial Agents

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Abstract : Naphthoquinones are secondary metabolites widespread in nature and can be produced by plants, fungi and actinomycetes. The interest of naphthoquinones is not only limited as organic dyes, but also their wide variety of biological activities such as antitumor, antibacterial, and cytotoxic activities. Typical 1,2-naphthoquinones such as mansonones can be found in Mansonia gagei Drumm. ("chan-cha-mod"), Sterculaceae family. This plant has been used traditionally to treat some diseases such as antiemetic and antidepressant. In this study, some natural mansonones isolated from the CH2Cl2 extract of M. gagei heartwood have been assessed for their antibacterial activities using agar well diffusion method. According to the antibacterial activity results of four natural mansonones (mansonones C, E, G and H), mansonones E and G showed higher activities than the others against Staphylococcus aureus, Propionibacterium acnes and Salmonella typhi, respectively. Since mansonone G exhibited good antibacterial activity and was obtained in the highest yield, we decided to derivertize mansonone G into five ether analogues. Based on the antibacterial activities of these synthesized compounds, four ether analogues (compounds 1-4) revealed higher antibacterial activities than its natural mansonone G against S. aureus and S. typhi.

Keywords : Mansonia gagei Drumm., antibacterial activities, mansonone G, ether analogues
Conference Title : ICPPNP 2015 : International Conference on Pharmacognosy, Phytochemistry and Natural Products
Conference Location : London, United Kingdom
Conference Dates : September 25-26, 2015