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Comparison of antibacterial activity in methanol extract of sea cucumber (*Holothuria leucospilota*) and sponge *Niphates furcata* from Hengam Island, Persian Gulf

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Abstract

Most of the marine invertebrates same as sponges and sea provide cucumbers which secondary metabolites with pharmacological application. In this study, antibacterial activities of methanol extracts of sea cucumber H. leucospilota and sponge N. furcata were assessed by Bacterial Broth Dilution Methods against strains of gram positive and gram negative bacteria. Our results showed methanol extract of N. furcata was active on Gram-positive and gram negative bacteria. The Minimum Bacterial Concentration of Method extract of N. furcata was 5 mg/ml for Bacillus subtilis spizizenii, 10 mg/ml for Staphylococcus aureus aureus and Bacillus cereus, 30 mg/ml for Escherichia coli and 20 mg/ml for Serratia marcescens. But methanol extract of *H. leucospilota* did not show good activity against these bacteria. The Minimum Inhibitor Concentration of Method extract of sea cucumber was 30 mg/ml for Bacillus subtilis spizizen and Bacillus cereus, 10 mg/ml for Staphylococcus aureus aurous, 30 mg/ml for Escherichia coli and 10 mg/ml for Serratia marcescens. The Minimum Bacterial Concentration of Method extract of H. leucospilota was 40 mg/ml just for Staphylococcus aureus. Methanol extract of N. furcata in comparison with H. leucospilota had better activity against bacteria; therefore, secondary metabolite solutions in methanol extracts of N. furcata contain components with antibacterial properties and can be used as antibiotics products.

Keywords: Sponge, Sea cucumber, Biological activity, Secondary metabolites, Hengam Island, Persian Gulf