

ISOLATION, CHARACTERIZATION, AND ACTIVITY TEST OF SPONGE EXTRACT ANTIOXIDANT COMPOUND

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Abstract

Isolation, characterization, and activity test has been conducted to sponge methanol extract antioxidant compound. Early screening result to some sponge extracts A13, C21, C25, F49, and G50 by using DPPH reagent indicated that a strong antioxidant characteristic in sponge A13. Further test for A13 methanol extract partition result in water- ethyl acetate solution showed that water fraction had stronger antioxidant activity compared with ethyl acetate fraction. Antioxidant compound in water fraction which was isolated through some stages of chromatography resulted in AG1 and AG2 compounds with 12.2 mg and 33.8 mg of weights respectively. Thin layer chromatography (TLC) test of AG1 and AG2 compounds by using stationary phase C_{18} and mobile phase MeOH : H_2O (7:1) resulted in R_f values of 0.6 and 0.7 respectively. FTIR spectrum analysis of AG1 showed bending vibration absorption characteristic O-H in region 3150 cm^{-1} and stretching vibration C=C in region 1632 cm^{-1} . The FTIR spectrum analysis of AG2 showed bending vibration O-H in region 3411 cm^{-1} and stretching vibration C=C in region 1671 cm^{-1} . Antioxidant test to AG1 and AG2 compounds at concentration 2 mg/mL resulted in inhibition percentage of 40.36% and 51.43%. Based on aforementioned information, the conclusion is that sponge A13 has antioxidant compound content with structure characteristic showing hydroxyl group and double bond.

Keywords : sponge, isolation, antioxidant compound, DPPH.