ABSTRACT

ISOLATION AND CHARACTERIZATION OF BIOACTIVE ALKALOID COMPOUND FROM SPONGE AS ASNTIBACTERIAL TO CHLORAMPENIKOL-RESISTANT *Escherichia coli*

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The study of isolation, characterization, and bioactivity tests of alkaloid compound from sponge had been carried out. Bioactivity test was examined by using chlorampenicol-resistant *Escherichia coli*. The bioactive metabolite was isolated by several chromatography steps. The purified bioactive substance of W84B23 for 15 mg (0,02%) was obtained by chrystalization methode. W84B23 revealed as an amorpus crysal. The Rf value of thin-layer chromatography (TLC) with two different systems of eluens i.e dichlorometane and 10:1 dichlorometane/methanol were 0,12 and 0,46 respectively. Identification using Dragendorff reagent showed an orange spot which indicated as alkaloid compoud. The characterization of W84B23 using UV-Vis spectrophotometer exhibited maximum absorption at a wavelength of 203 nm (transition of π → π*) and 278 nm (transition n → π*). Interpretation of IR spectrum indicated the presence of hydroxyl functional groups (O-H : 3448 cm\(^{-1}\) and 1111 cm\(^{-1}\)), alkene (C=C : 1604 cm\(^{-1}\) and 1527 cm\(^{-1}\)), carbonyl (C=O : 1866 cm\(^{-1}\)), and tertiary amines (C-N : 1319 cm\(^{-1}\)). Interpretation \(^1\)H NMR data showed chemical shift at 2,94 ppm and 3,77 ppm indicated methyl (CH\(_3\)) and methyn (CH) in tertiary amines. The bioactivity test at dose 30 µg showed inhibition zone for a diameter of 10 mm. Based on the results, W84B23 is an alkaloid compound which potential as antibacterial.

Key words: Bioactivity; alkaloid;sponge; antibacterial; *Escherichia coli*. 