PHYTOCHEMICAL STUDY OF BIDARA UPAS (*Merremia mammosa* (Lour.) Hallier f.) LEAF

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ABSTRACT

Background: Respiratory diseases were reported in the displaced population after natural disasters. Bidara upas(*Merremia mammosa* (Lour.) Hallierf.) napiform root tuber has been used to treat diseases related to respiratory system, but few study about its leaf chemical compounds.

Objective: The research aimed to study one of the compounds from bidara upas leaf that might be functional in treating respiratory diseases.

Methods: This research began with phytochemical screening, extractionby graded maceration methode using n-hexane, ethyl acetate, and 70% ethanol as solvent, and continued by stage of isolation compound and chemical characterization of isolates collected.TLC monitoring on the three extracts was done using silica gel GF_{254} as a stationary phase and mobile phase chloroform: ethyl acetate (4:1). Isolation was done by preparative-TLC using silica gel $60F_{254}$ as a stationary phase and mobile phase chloroform: ethyl acetate (4:1) and 10% H_2SO_4 in methanol as the apparition spot reagent. Isolates were characterized by using the apparition spot of 10% sulfuric acid in methanol, 5% $AlCl_3$ in methanol, 1% $FeCl_3$ in water, and 0.2% DPPH in methanol, UV-visible spectrophotometer and Fourier Transformed Infrared Spectrophotometry (FTIR).

Outcome measured : Characteristics of one of the compounds isolated from bidara upas leaf.

Results : The result of phytochemical screening showed that almost all of the three extracts contained flavonoids, quinones, phenolic compounds, triterpenoids and steroids. However, flavonoid was not detected in n-hexane extract. TLC monitoring on the three extracts showed the presence of well-separated compounds at Rf 0.73. The spectrum of UV-visible spectrophotometer showed that the isolates had a maximum absorbance at a wavelength of 442 nm. The result of analysis of the FTIR spectrophotometer showed some of functional groups on the wave number 3,371.3 cm^{-1}; 2,945.1 cm^{-1}; 2,833.2 cm^{-1}; 2,044.4 cm^{-1}; 1,656.7 cm^{-1}; 1,450.4 cm^{-1}; 1,421.4 cm^{-1}; 1,114.8 cm^{-1} and 1,028.0 cm^{-1}.

Conclusion: In conclusion, based on the results of characterization, the isolate was assumed to be terpenoid compounds.

Keywords: Bidara upas leaf (*Merremia mammosa* (Lour.) Hallier f.), phytochemical study, terpenoid, spectrophotometer UV-Visible, FTIR.