

**TELAAH FITOKIMIA DAUN BIDARA UPAS**  
**(*Merremia mammosa* (Lour.) Hallier f.)**

**ABSTRAK**

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Telah dilakukan telaah fitokimia terhadap daun bidara upas (*Merremia mammosa* (Lour.) Hallier f.) dengan tujuan menganalisis salah satu kandungan senyawa kimianya. Penelitian ini dimulai dengan melakukan penapisan fitokimia, standarisasi bahan simplisia, tahapan isolasi senyawa dan karakterisasi isolat yang diperoleh. Hasil penapisan fitokimia simplisia daun bidara upas menunjukkan adanya kandungan flavonoid, kuinon, senyawa fenolat, triterpenoid dan steroid. Tahapan isolasi dimulai dengan melakukan ekstraksi dengan metode maserasi secara bertingkat menggunakan pelarut n-heksana, etil asetat, dan etanol. Penapisan fitokimia terhadap ekstrak yang dihasilkan menunjukkan kesamaan kandungan dengan simplisia yaitu flavonoid, kuinon, senyawa fenolat, triterpenoid dan steroid. Namun, pada ekstrak n-heksana tidak terdeteksi adanya kandungan flavonoid. Pemantauan menggunakan KLT terhadap ketiga ekstrak menggunakan fasa diam silika gel GF<sub>254</sub>, fasa gerak kloroform : etil asetat (4:1) menunjukkan adanya senyawa yang terpisah dengan baik pada Rf 0,73. Isolasi dilakukan dengan KLT-preparatif menggunakan fasa diam silika gel 60 F<sub>254</sub>, fasa gerak kloroform : etil asetat (4:1) dan penampak bercak H<sub>2</sub>SO<sub>4</sub> 10% dalam metanol. Isolat dikarakterisasi menggunakan penampak bercak asam sulfat 10% dalam metanol, AlCl<sub>3</sub> 5% dalam metanol, FeCl<sub>3</sub> dalam air, dan DPPH 0,2% dalam metanol, spektrofotometer *uv-visible* dan FTIR. Spektrum dari spektrofotometer *uv-visible* menunjukkan isolat memiliki absorbansi maksimal pada panjang gelombang 442 nm. Hasil analisis spektrofotometer FTIR menunjukkan adanya gugus fungsi yang terdeteksi pada bilangan gelombang 3.371,3 cm<sup>-1</sup>; 2.945,1 cm<sup>-1</sup>; 2.833,2 cm<sup>-1</sup>; 2.044,4 cm<sup>-1</sup>; 1.656,7 cm<sup>-1</sup>; 1.450,4 cm<sup>-1</sup>; 1.421,4 cm<sup>-1</sup>; 1.114,8 cm<sup>-1</sup> dan 1.028,0 cm<sup>-1</sup>. Berdasarkan hasil karakterisasi, isolat tersebut diduga merupakan golongan senyawa terpenoid.

**Kata Kunci:** Daun bidara upas (*Merremia mammosa* (Lour.) Hallier f.), telaah fitokimia, terpenoid, spektrofotometer *UV-Visible*, FTIR

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

**ABSTRACT**

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Phytochemical study had been done on the leaf of bidara upas (*Merremia mammosa* (Lour.) Hallier f.) with the purpose of analyzing one of its chemical compounds. This research began with phytochemical screening, and continued with standardization of the crude drug material, stage of isolation compound and chemical characterization of isolates collected. The result of phytochemical screening showed that it contained flavonoids, quinones, phenolic compounds, triterpenoids and steroids. The stage of isolation began with extraction by graded maceration method using n-hexane, ethyl acetate, and ethanol as solvent. Phytochemical screening of the extracts showed similar compounds with the crude drug. Almost all 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 using silica gel GF<sub>254</sub> as a stationary phase and mobile phase chloroform: ethyl acetate (4:1) showed the presence of well-separated compounds at R<sub>f</sub> 0.73. Isolation was done by preparative-TLC using silica gel 60 F<sub>254</sub> as a stationary phase and mobile phase chloroform: ethyl acetate (4:1) and H<sub>2</sub>SO<sub>4</sub> 10% in methanol as the apparition spot reagent. Isolates were characterized by using the apparition spot of 10% sulfuric acid in methanol, AlCl<sub>3</sub> 5% in methanol, FeCl<sub>3</sub> in water, and DPPH 0,2% in methanol, UV-visible spectrophotometer and FTIR. 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<sup>-1</sup>; 2,945.1 cm<sup>-1</sup>; 2,833.2 cm<sup>-1</sup>; 2,044.4 cm<sup>-1</sup>; 1,656.7 cm<sup>-1</sup>; 1,450.4 cm<sup>-1</sup>; 1,421.4 cm<sup>-1</sup>; 1,114.8 cm<sup>-1</sup> and 1,028.0 cm<sup>-1</sup>. Based on the results of characterization, the isolate was assumed to be terpenoid compounds.

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