

INTISARI

SUSANTI, E., 2019, AKTIVITAS FRAKSI DAN SUB FRAKSI EKSTRAK ETANOL DAUN MANGGA BACANG (*Mangifera foetida* L.) TERHADAP KADAR FERITIN DARAH PASIEN TALASEMIA β MAYOR SECARA *IN VITRO* DAN KUANTIFIKASI KANDUNGAN MANGIFERIN DALAM SUB FRAKSI AKTIF, TESIS, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Talasemia β mayor adalah jenis talasemia dengan anemia berat sehingga pasien membutuhkan transfusi darah secara terus menerus yang menyebabkan disfungsi organ karena akumulasi besi. Pasien menggunakan terapi pengkhelat besi untuk mengurangi kadar besi dalam tubuh. Pengkhelat besi memiliki harga yang relatif mahal dan memberikan banyak efek samping. Daun *M. foetida* diduga mengandung mangiferin memiliki efek kelasi. Penelitian ini bertujuan untuk mengetahui aktivitas ekstrak, fraksi dan sub fraksi ekstrak etanol daun *M. foetida* terhadap penurunan kadar feritin dalam serum darah pasien talasemia β mayor, mendeteksi dan mengetahui kandungan mangiferin dalam sub fraksi aktif.

Fraksi dan sub fraksi ekstrak etanol daun *M. foetida* diperoleh secara ECC dan KCV, diuji aktivitasnya menggunakan metode Elisa feritin secara *in vitro*. Deteksi kandungan mangiferin dalam fraksi hasil ECC menggunakan KLT dengan fase diam silika gel 60 F₂₅₄ dan 3 fase gerak yaitu kloroform : etanol : asam asetat glacial (8:2:1), etil asetat : asam format : air (8:0,5:0,5) dan n butanol : asam asetat : air (10:1,5:1) dibandingkan dengan standar mangiferin. Penetapan kadar mangiferin dalam sub fraksi aktif hasil KCV menggunakan KLT densitometri dengan fase diam silika gel F₂₅₄ dan fase gerak etil asetat : asam format : air (8:0,5:0,5) pada panjang gelombang 254 nm.

Hasil penelitian ini menunjukkan bahwa fraksi hasil ECC yaitu fraksi etil asetat konsentrasi 500 ppm mampu menurunkan kadar feritin paling tinggi sebesar $74,41 \pm 0,17\%$ dibandingkan ekstrak etanol yaitu $47,89 \pm 0,20\%$ dan fraksi diklorometana yaitu $8,62 \pm 0,27\%$. Deteksi mangiferin pada fraksi etil asetat menunjukkan nilai Rf yang sama dengan standar mangiferin yaitu 0,22. Sedangkan sub fraksi hasil KCV yaitu sub fraksi B konsentrasi 50 ppm mampu menurunkan kadar feritin paling tinggi sebesar $88,16 \pm 0,61\%$ mengandung mangiferin sebesar $4,04 \pm 0,01 \mu\text{g/ml}$.

Kata Kunci : Talasemia β mayor, Feritin, Elisa, Mangiferin dan KLT Densitometri.

ABSTRACT

ACTIVITIES OF FRACTION AND SUB FRACTION FROM MANGGA BACANG LEAVES ETHANOL EXTRACT (*Mangifera foetida* L.) TOWARDS FERRITIN IN BLOOD SERUM OF TALASSEMIA β MAJOR PATIENT BY *IN VITRO* METHOD AND QUANTIFICATION OF MANGIFERIN IN ACTIVE SUB FRACTION, THESIS, FACULTY OF PHARMACEUTICAL, SETIA BUDI UNIVERSITY, SURAKARTA.

Thalassemia β major was one of thalassemia with severe anemia so patients need blood transfusion continuously which causes organ dysfunction due to iron accumulation. Patients must have been using iron chelator therapy to reduce iron levels in the body. Iron chelator was expensive and had many side effects. The *M. foetida* leaves were thought to contain mangiferin which had a chelating effect. This study aims to determine the activity of fractions and sub fractions from *M. foetida* leaves ethanol extract to decreasing ferritin levels in blood serum of major β thalassemia patients and quantification of mangiferin in active sub fraction.

Fractions and sub fractions of *M. foetida* leaves ethanol extract were obtained by ECC and KCV which determined their activity using Elisa ferritin method by *in vitro*. Detection of mangiferin in ECC fractions using TLC with stationary phase of silica gel 60 F₂₅₄ and 3 mobile phases was chloroform: ethanol: glacial acetic acid (8: 2: 1), ethyl acetate: formic acid: water (8: 0, 5: 0,5) and n butanol: acetic acid : water (10 : 1,5: 1) compared to the mangiferin standard. Determination of the mangiferin content in active sub fraction of KCV used densitometry with the stationary phase of silica gel F₂₅₄ and the mobile phase of ethyl acetate: formic acid : water (8 : 0,5 : 0,5) at a wavelength of 254 nm.

The results of this study indicated that the fractions of ECC named ethyl acetate fraction at a concentration of 500 ppm was able to reduce ferritin levels in blood serum as the highest were $74,41 \pm 0,17$ % compared to ethanol extract was $47,89 \pm 0,20$ % and dichloromethane fraction was $8,62 \pm 0,27$ %. Detection of mangiferin in ethyl acetate fraction shows the same R_f value as mangiferin standard was 0,22. The sub fractions of KCV named sub fraction B at a concentration of 50 ppm was able to reduce ferritin levels the highest by $88,16 \pm 0,61$ % contained mangiferin at $4,04 \pm 0,01$ $\mu\text{g} / \text{ml}$.

Keywords: Major β thalassemia, Ferritin, Elisa, Mangiferin and Densitometry.