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ABSTRAK

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UJI AKTIVITAS EKSTRAK ETANOL 96% DAN FRAKSI (METANOL & KLOROFORM) HERBA CIPLUKAN (*Physalis angulata* L.*)* TERHADAP PENGHAMBATAN XANTIN OKSIDASE

Xantin oksidase adalah enzim yang mengkatalisis oksidasi hipoxantin menjadi xantin dan asam urat. Herba ciplukan (*Physalis angulata* L.) mengandung saponin, flavonoid (luteolin), polifenol, alkaloid, asam palmitat, dan asam stearate. Metabolit sekunder flavonoid dan alkaloid diduga dapat menghambat kerja enzim xantin oksidase dan superoksidase sehingga mengurangi kadar asam urat di dalam darah. Penelitian ini bertujuan untuk mengetahui kadar total flavonoid, fenol, dan aktivitas ekstrak etanol dan fraksi (metanol & kloroform) herba ciplukan (*Physalis angulata* L.) terhadap penghambatan enzim xantin oksidase. Metode yang digunakan pada penelitian ini adalah metode eksperimental dengan berbagai konsentrasi ektrak etanol dan fraksi (metanol dan kloroform) herba ciplukan (500 µg/mL, 250 µg/mL, 125 µg/mL, 62,5 µg/mL dan 31,75 µg/mL) dan diukur serapannya menggunakan *microplate reader* pada λ maksimum 570 nm. Hasil pengukuran kadar total flavonoid pada ekstrak etanol 96% sebesar 101,15 ± 0,987 mg QE/g ekstrak, pada fraksi metanol sebesar 102 ± 0,341 mg QE/g ekstrak, dan pada fraksi kloroform sebesar 79,396 ± 0,386 mg QE/g ekstrak. Hasil pengukuran kadar total fenol pada ekstrak etanol 96% sebesar 152,03 ± 1,695 mg GAE/g ekstrak, pada fraksi metanol sebesar 95,36 ± 3,396 mg GAE/g ekstrak, dan pada fraksi kloroform sebesar 52,03 ± 0,64 mg GAE/g ekstrak. Hasil pengukuran penghambatan aktivitas enzim xantin oksidase yaitu aktivitas xantin oksidase pada ekstrak etanol 96% konsentrasi 500 µg/mL dan 250 µg/mL yaitu 88,5 mU/mL dan 44,5 mU/mL, pada fraksi metanol konsentrasi 500 µg/mL dan 250 µg/mL yaitu 8,1 mU/mL dan 5,8 mU/mL, dan pada fraksi kloroform konsentrasi 500 µg/ yaitu 0,8 mU/mL.

Kata kunci: Ciplukan, Hiperurisemia, *Microplate Reader*, Xantin Oksidase

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ABSTRACT

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ACTIVITY TEST OF ETANOL EXTRACT AND FRACTIONS (METHANOL & KLOROFORM) OF CIPLUKAN HERB (*Physalis angulata* L.) ON XANTIN OXIDASE INHIBITION

Xanthine oxidase is an enzyme that catalyzes the oxidation of hypoxanthine to xanthine and uric acid. Ciplukan herb (Physalis angulata L.) contains saponins, flavonoids (luteolin), polyphenols, alkaloids, palmitic acid, and stearic acid. Secondary metabolites such as flavonoids and alkaloids are believed to inhibit the activity of xanthine oxidase and superoxide, thereby reducing uric acid levels in the blood. This study aimed to determine the total flavonoid and phenol content, as well as the inhibitory activity of the ethanol extract and fractions (methanol & chloroform) of the ciplukan herb (Physalis angulata L.) against xanthine oxidase enzyme. The method used in this study was experimental, with various concentrations of the ethanol extract and fractions (methanol and chloroform) of the ciplukan herb (500, 250, 125, 62.5, and 31.75 µg/mL). The absorbance was measured using a microplate reader at a maximum wavelength of 570 nm. The results showed that the total flavonoid content in the 96% ethanol extract was 101.15 ± 0.987 mg QE/g extract, in the methanol fraction was 102 ± 0.341 mg QE/g extract, and in the chloroform, fraction was 79.396 ± 0.386 mg QE/g extract. The total phenol content in the 96% ethanol extract was 152.03 ± 1.695 mg GAE/g extract, in the methanol fraction was 95.36 ± 3.396 mg GAE/g extract, and in the chloroform, fraction was 52.03 ± 0.64 mg GAE/g extract. The results of the xanthine oxidase enzyme inhibition assay showed that the xanthine oxidase activity in the 96% ethanol extract at concentrations of 500 µg/mL and 250 µg/mL was 88.5 mU/mL and 44.5 mU/mL, in the methanol fraction at concentrations of 500 µg/mL and 250 µg/mL was 8.1 mU/mL and 5.8 mU/mL, and in the chloroform fraction at a concentration of 500 µg/mL was 0.8 mU/mL.

Keywords: Ciplukan, Hyperuricemia, *Microplate Reader*, Xanthine oxidase