Uji efek pemutih ekstrak etanol dan fraksi dari kulit batang mentangau (calophyllum pulcherrimum wall.) dengan metode penghambatan aktivitas tirosinase = Whitening potency test of ethanol extract and fractions from stem bark of mentangau (calophyllum pulcherrimum wall.) through tyrosinase inhibition

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Abstrak

Hiperpigmentasi menyebabkan penggelapan warna kulit akibat produksi melanin yang berlebihan. Kelebihan melanin kulit dapat dikontrol oleh senyawa fenolik melalui penghambatan aktivitas tirosinase dalam mengubah produk L-DOPA menjadi dopakuinon. Kulit batang C. pulcherrimum mengandung senyawa fenolik seperti flavonoid, namun aktivitas dalam menghambat tirosinase belum diteliti.

Tujuan dari penelitian adalah menguji efek pemutih ekstrak etanol dan fraksi kulit batang C. pulcherrimum dengan menghambat aktivitas tirosinase yang diukur pada λ = 490 nm. Ekstrak etanol difraksinasi secara partisi cair-cair kemudian diuji penghambatan tirosinasenya. Pemisahan menggunakan kromatografi kolom dilakukan pada fraksi etil asetat dan diperoleh 7 subfraksi berdasarkan kesamaan kromatogram pada pelat KLT dan diuji penghambatan tirosinasenya.

Hasil uji menunjukkan nilai IC50 yang diperoleh dari ekstrak etanol adalah 55,489 µg/mL. Fraksi dengan aktivitas penghambatan tertinggi dari kulit batang C. pulcherrimum adalah fraksi n-butanol diikuti oleh fraksi etil asetat (IC50 62,474 dan 90,441 µg/mL). Subfraksi 4 (SF4) memiliki aktivitas penghambatan tertinggi dengan persentase penghambatan 25,971. Kulit batang C. pulcherrimum memiliki penghambatan tirosinase lemah dan masih rendah dibandingkan asam askorbat.
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Hyperpigmentation cause the darkening of the skin?s color due to excessive melanin production. The excessive melanin production can be controlled by phenolic compounds through inhibition of tyrosinase in changing L-DOPA to dopaquinone. Stem bark of C. pulcherrimum consist of flavonoid and xanthone, and has not been studied as tyrosinase inhibitor.

The aims of study was to investigate whitening potency of ethanol extract and fractions from stem bark of C. pulcherrimum as tyrosinase inhibitor which were evaluated at λ = 490 nm. The ethanol extract was liquid-liquid partition fractionated then the activity of tyrosinase inhibition were tested. The ethyl acetate fraction was fractionated by using column chromatography which obtained 7 subfractions based on the similarity chromatogram on the TLC plate and then the activity of tyrosinase inhibition were tested.

The ethanol extract showed an IC50 value was 55,489 µg/mL. The highest inhibition of tyrosinase from the fractions was given by n-butanol fraction then followed by ethyl acetate fraction with IC50 values 62,474 dan 90,441 µg/mL. The most active subfraction was the fourth (SF4) with inhibition percentage 25,971. The result showed that stem bark of C. pulcherrimum doesn?t have activity as strong tyrosinase inhibitor and

that?s still lower than ascorbic acid.