

Uji penghambatan aktivitas tirosinase dari minyak biji markisa kuning
passiflora edulis f flavicarpa dan penentuan parameter minyak =
Inhibition of tyrosinase activity test from yellow passion fruit seed oil
passiflora edulis f flavicarpa and oil parameter determination

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Abstrak

Tirosinase merupakan suatu enzim yang mengkatalisis proses melanogenesis dalam pembentukan pigmen melanin. Produksi melanin yang berlebihan (hiperpigmentasi) dapat menyebabkan terjadinya penggelapan warna kulit. Pengontrolan produksi melanin dapat dilakukan dengan cara menghambat aktivitas enzim tirosinase. Minyak biji markisa kuning diduga memiliki efek terhadap pencerahan kulit. Tujuan dari penelitian ini adalah untuk mengetahui potensi penghambatan aktivitas tirosinase serta menentukan parameter kualitas minyak biji markisa kuning. Pengujian penghambatan tirosinase oleh minyak biji markisa kuning dilakukan dengan mengukur serapan L-dopakrom pada panjang gelombang 490 nm. Minyak biji markisa kuning memiliki nilai IC₅₀ 195,342 g/mL.

Pengujian kinetika enzim melalui plot Lineweaver-Burk menunjukkan bahwa minyak biji markisa memiliki penghambatan kompetitif. Hasil penentuan parameter minyak biji markisa menunjukkan hasil bobot jenis 0,8912 g/cm³, indeks bias 1,472, bilangan asam 53,962 mgNaOH/g, bilangan penyabunan 186,64 mgKOH/g, bilangan iodium 375,5 g I₂/ 100 g minyak, bilangan hidroksil 239,38 mg/g dan zat tidak tersabunkan 1,169, dan mengandung saponin, tanin, serta glikosida.

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Tyrosinase is an enzyme that catalyzes the process of melanogenesis which in case of excessive melanin production (hyperpigmentation) may causes darkening of skin color. Melanin production can be controlled by the inhibition of tyrosinase enzyme. Yellow passion fruit seeds was investigated had an effect on the skin whitening. This research used to determined the potential inhibition of tyrosinase activity from yellow passion fruit seed oil and determined parameters of the yellow passion fruit seed oil. The inhibition of tyrosinase activity test from yellow passion fruit seed oil was done by measuring the wavelength of dopachrome at 490 nm.

The test showed that yellow passion fruit seed oil had IC₅₀ values of 195.342 g/mL. The inhibition kinetics analyzed by a Lineweaver-Burk plot indicated that yellow passion fruit seed oil was a noncompetitive inhibitor. Passion fruit seed oil had density of 0.8912 of g/cm³, refractive index of 1.472, acid value of 53.962 mgNaOH/g, saponification value 186.64 of mg/g, iodine value of 375.5 g I₂/ 100 g oil, hydroxyl value of 239.38 mg/g, unsaponifiable matter of 1.169, and contained saponins, tannins, and glycosides.