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Uji in vitro aktivitas pencerahan kulit ekstrak daun trengguli (Cassia fistula L.) dan fraksi nonpolar serta uji keamanan krim fraksi n-heksana = Skin lightening activity in vitro test of trengguli (Cassia fistula L.) leaves extract and nonpolar fraction and safety test of n-hexane fraction cream / Diana Agustin

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Abstrak

ABSTRAK
Penelitian terdahulu menunjukkan bahwa ekstrak metanol 80% daun Cassia fistula L. serta fraksi-fraksinya berpotensi sebagai antitirosinase sehingga dapat menghambat pembentukan melanin. Penelitian ini bertujuan untuk memperoleh sediaan krim yang mengandung fraksi nonpolar, yaitu fraksi n-heksana dari ekstrak etanol 96% daun trengguli, yang mempunyai aktivitas antioksidan dan antitirosinase, stabil dan aman. Metode untuk menguji aktivitas antioksidan adalah metode DPPH, sedangkan untuk pengujian aktivitas antitirosinase dilakukan dengan mengukur penurunan intensitas warna yang menunjukkan penghambatan pembentukan dopakrom dalam reaksi tirosinase-L-DOPA. Parameter adanya aktivitas ditunjukkan oleh persentase inhibisi dan nilai IC50. Uji stabilitas fisik terhadap krim dilakukan selama 12 minggu dan uji keamanan kepada sukarelawan menggunakan metode single application closed patch epicutaneous test under occlusion. Hasil uji aktivitas antioksidan menunjukkan ekstrak etanol 96% daun trengguli dan fraksi n-heksana memiliki nilai IC50 sebesar 70,196 g/mL dan 141,459 g/mL secara berurutan. Pengujian aktivitas antitirosinase menunjukkan nilai IC50 ekstrak etanol 96% daun trengguli 393,264 g/mL dan nilai IC50 fraksi n-heksana 188,239 g/mL. Konsentrasi fraksi nheksana dalam krim dibuat menjadi 3 macam, yaitu 0,1; 0,5; dan 2,5%. Hasil uji stabilitas terhadap krim selama 12 minggu menunjukkan ketiga konsentrasi krim bersifat stabil. Uji keamanan ketiga konsentrasi krim terhadap sukarelawan tidak menimbulkan reaksi iritasi sehingga aman diaplikasikan ke kulit.
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ABSTRACT
Previous study reported that methanol 80% extract of Cassia fistula L. leaves and its fractions have potency as antityrosinase which can inhibit melanin production. This research was conducted to obtain nonpolar fraction (n-hexane fraction)-containing cream from ethanol 96% extract of Cassia fistula L. leaves, which was considered potent as antioxidant and antityrosinase, stable, and safe. DPPH method was used to determine antioxidant activity, while antityrosinase activity assay performed by measuring the decreasing in color intensity which inhibit dopachrome formation resulted in tyrosinase-L-DOPA reaction. Parameter for

identifying activity were determined by inhibitory percentage and IC50. Physical stability test was done for 12 weeks and safety test in human used single application closed patch epicutaneous test under occlusion method. The result of antioxidant activity test showed that ethanol 96% extract of Cassia fistula L. leaves and n-hexane fraction had IC50 values 70,196 g/mL and 141,459 g/mL, respectively. Antityrosinase test showed that IC50 value of ethanol 96% extract of Cassia fistula L. leaves was 393,264 g/mL, while IC50 values of n-hexane fraction was 188,239 g/mL. Fraction of n-hexane was formulated into cream for 3 concentrations, which are 0,1; 0,5; and 2,5%. The stability test of the creams for 12 weeks indicated that creams were stable. The result of safety test of creams showed that creams have no irritation effect so it was safe for topical application in human skin.