Uji aktivitas, stabilitas fisik dan keamanan sediaan gel pencerah kulit yang mengandung ekstrak jamur tiram (pleurotus ostreatus) = Activity assay, physical stability and safety tests of skin lightening gel containing oyster mushroom (pleurotus ostreatus) extract

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Abstrak

Beberapa penelitian yang pernah dilakukan menunjukkan bahwa jamur tiram (Pleurotus ostreatus) berpotensi sebagai antioksidan dan anti tirosinase sehingga dapat menghambat pembentukan melanin.

Penelitian ini bertujuan untuk memperoleh sediaan gel yang mengandung ekstrak jamur tiram yang mempunyai aktivitas antioksidan dan penghambatan tirosinase, stabil dan aman. Metode yang digunakan adalah 1,1 difenil dipikrilhidrazil (DPPH) untuk mengetahui aktivitas antioksidan dan dopakrom untuk mengetahui penghambatan terhadap enzim tirosinase. Parameter adanya aktivitas ditunjukkan oleh nilai IC50 dan persentase inhibisi. Uji stabilitas fisik terhadap sediaan gel selama 12 minggu dan uji keamanan kepada sukarelawan menggunakan metode single application closed patch epicutaneous test under occlusion.

Hasil uji aktivitas antioksidan dan penghambatan tirosinase menunjukkan ekstrak etanol 70% memiliki nilai IC50 yang lebih tinggi (79,0324 g/mL; 1,125 mg/mL) dibandingkan ekstrak air jamur tiram (94,4674 g/mL; 2,350 mg/mL). Ekstrak etanol 70% jamur tiram dibuat sediaan gel dengan 3 macam konsentrasi yaitu 0,2; 0,4 dan 0,8% (b/b). Hasil uji aktivitas antioksidan dan penghambatan tirosinase terhadap sediaan gel menunjukkan persentase inhibisi yaitu gel 0,2% (52,63; 22,73%), gel 0,4% (64,9; 29,74%) dan gel 0,8% (70,47; 38,22%). Hasil uji stabilitas fisik selama 12 minggu menunjukkan ketiga konsentrasi gel bersifat stabil dan uji keamanan terhadap gel 0,8% tidak menimbulkan iritasi sehingga aman diaplikasikan ke kulit.
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Previous studies reported that oyster mushroom (Pleurotus ostreatus) was potential as antioxidant and tyrosinase inhibitory effect so be able to inhibit melanin formation.

The aim of the study was to formulate into gel containing Pleurotus ostreatus extract which had the antioxidant and tyrosinase inhibitor activity, stable and safe. The methode used 1,1- diphenyl-dipicrylhydrazil (DPPH) to determine antioxidant activity and dopachrome to determine tyrosinase inhibitory effect. The parameters for identifying the activity were determined by IC50 dan inhibitory percentage. Physical stability test was done for 12 weeks and safety test in human used single application closed patch epicutaneous test under occlusion method.

The results showed that 70% ethanolic extract was higher in IC50 (79,0324 g/mL; 1,125 mg/mL) than water extract (94,4674 g/mL; 2,350 mg/mL). The 70% ethanolic extract was formulated into gel for three kinds concentrations (0,2; 0,4 and 0,8% (w/w). The results for antioxidant and tyrosinase

inhibitory activities were gel 0,2% (52,63; 22,73%), gel 0,4% (64,9; 29,74%) dan gel 0,8% (70,47; 38,22%). The physical activity test for 12 weeks showed that three concentrations of gel were stable and safety test for gel 0,8% no irritation was found. It?s be concluded that the gel was safe for skin topical.