

ABSTRAK

FORMULASI, KARAKTERISASI DAN UJI AKTIVITAS ANTIOKSIDAN *BODY SCRUB* DENGAN PENAMBAHAN EKSTRAK ETANOL DAUN PEGAGAN (*Centella asiatica*)

Kerusakan kulit akibat paparan sinar ultraviolet dan radikal bebas dapat dicegah dengan penggunaan antioksidan alami, salah satunya yang bersumber dari daun pegagan (*Centella asiatica*). Penelitian ini bertujuan untuk mengidentifikasi kandungan metabolit sekunder ekstrak etanol daun pegagan, menentukan kadar fenolik total, menguji aktivitas antioksidan ekstrak serta sediaan *body scrub*, serta mengevaluasi mutu fisik dan tingkat kesukaan (uji hedonik) sediaan. Daun pegagan diekstraksi menggunakan metode maserasi dengan pelarut etanol redestilasi. Skrining fitokimia dilakukan secara kualitatif, kadar fenolik total ditetapkan menggunakan metode Folin-Ciocalteu, dan *body scrub* diformulasikan dengan variasi konsentrasi ekstrak (F0: 0%, F1: 1%, F2: 3%, dan F3: 5%) menggunakan *apricot beads* sebagai agen eksfolian. Uji aktivitas antioksidan dilakukan dengan metode DPPH, sedangkan evaluasi mutu fisik mengacu pada SNI 16-4399-1996. Hasil skrining fitokimia menunjukkan ekstrak etanol daun pegagan positif mengandung flavonoid, saponin, tanin, steroid, dan terpenoid, tetapi negatif alkaloid. Kadar fenolik total ekstrak daun pegagan diperoleh sebesar 71,242 mg GAE/g dan *apricot beads* sebesar 42,757 mg GAE/g. Nilai IC_{50} aktivitas antioksidan ekstrak murni tergolong sangat kuat, yaitu sebesar 27,070 $\mu\text{g/mL}$. Pada sediaan *body scrub*, peningkatan konsentrasi ekstrak berbanding lurus dengan peningkatan aktivitas antioksidan, dengan nilai IC_{50} F0 sebesar 93,530 $\mu\text{g/mL}$ (kuatsediaan terbaik dan paling disukai pada parameter warna, aroma, serta tekstur).

UNIVERSITAS ISLAM NEGERI
SUNAN GUNUNG DJATI
BANDUNG

Kata Kunci: antioksidan, *apricot beads*, *body scrub*, *Centella asiatica*, DPPH, fenolik total.

ABSTRACT

FORMULATION, CHARACTERIZATION, AND ANTIOXIDANT ACTIVITY TEST OF BODY SCRUB WITH ETHANOL EXTRACT OF GOTU KOLA LEAVES (*Centella asiatica*)

Skin damage caused by exposure to ultraviolet radiation and free radicals can be prevented by using natural antioxidants, one of which is derived from gotu kola leaves (*Centella asiatica*). This study aims to identify the secondary metabolite content of the ethanol extract of gotu kola leaves, determine the total phenolic content, test the antioxidant activity of the extract and body scrub formulation, and evaluate the physical quality and degree of preference (hedonic test) of the formulation. Gotu kola leaves were extracted using the maceration method with redistilled ethanol as the solvent. Phytochemical screening was carried out qualitatively, followed by the determination of total phenolic content using the Folin-Ciocalteu method. The body scrub was formulated with variations in the concentration of gotu kola leaf extract (F0: 0%, F1: 1%, F2: 3%, and F3: 5%) using apricot beads as an exfoliant agent. The antioxidant activity test was performed using the DPPH (2,2-diphenyl-1-picrylhydrazyl) method. Evaluation of the physical quality of the preparation included organoleptic, homogeneity, pH, spreadability, specific gravity, and emulsion stability tests referring to SNI 16-4399-1996. The phytochemical screening results showed that the ethanol extract of gotu kola leaves positively contained flavonoids, saponins, tannins, steroids, and terpenoids. The total phenolic content of gotu kola leaf ethanol extract was obtained at 71.242 mg GAE/g, while for apricot beads it was 42.757 mg GAE/g. The antioxidant activity IC_{50} value of the pure extract was classified as very strong, at 27.070 $\mu\text{g/mL}$. In the body scrub formulations, an increase in extract concentration was directly proportional to an increase in antioxidant activity, with IC_{50} values for F0 at 93.530 $\mu\text{g/mL}$ (strong), F1 at 53.437 $\mu\text{g/mL}$ (strong), F2 at 45.845 $\mu\text{g/mL}$ (very strong), and F3 at 35.692 $\mu\text{g/mL}$ (very strong). Physical quality evaluation of all formulas met the SNI standard. Based on the hedonic test on 30 panelists, Formula F2 (3%) was the most preferred formulation in terms of color, aroma, and texture parameters.

Keywords: antioxidant, apricot beads, body scrub, *Centella asiatica*, DPPH, total phenolic.