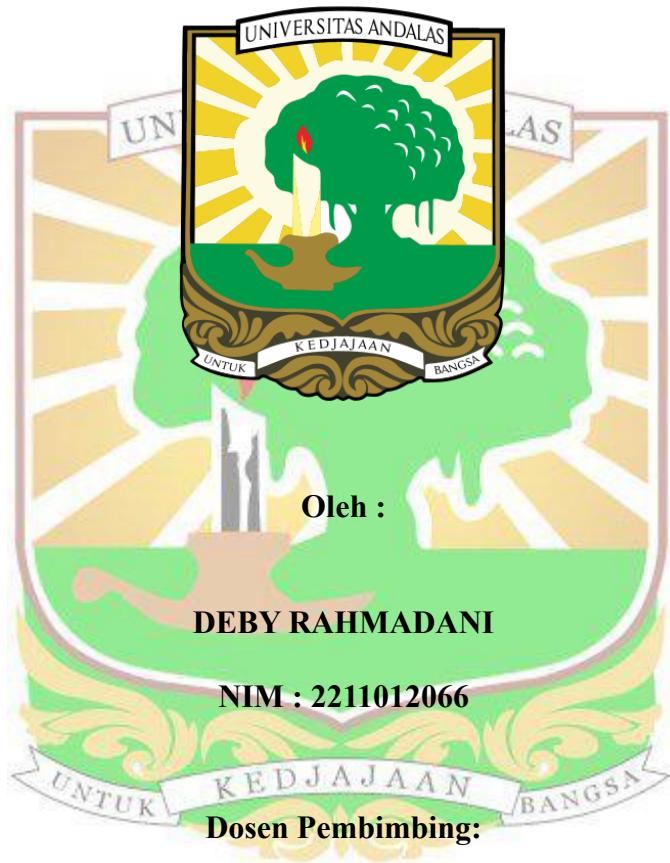


SKRIPSI SARJANA FARMASI

FORMULASI DAN EVALUASI SEDIAAN KOSMESEUTIKAL *SHEET MASK* DARI SERBUK GETAH BUAH PEPAYA (*CARICA PAPAYA L.*)



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**FAKULTAS FARMASI
UNIVERSITAS ANDALAS
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ABSTRAK

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(Program Studi Sarjana Farmasi)

Perawatan kulit, khususnya eksfoliasi, berperan penting dalam menjaga kesehatan dan penampilan kulit. Namun, eksfoliator fisik dan kimia yang umum digunakan berpotensi menimbulkan iritasi, sehingga diperlukan alternatif yang lebih aman, seperti eksfoliator enzimatik. Getah buah pepaya (*Carica papaya L.*) mengandung enzim proteolitik, terutama papain, yang mampu mengangkat sel kulit mati secara lembut. Penelitian ini bertujuan untuk memformulasikan sediaan kosmeseutikal *sheet mask* dari serbuk getah buah pepaya yang stabil secara fisik serta mampu mempertahankan aktivitas proteolitik enzim. Serbuk getah pepaya diperoleh melalui metode pengeringan *freeze drying* untuk menjaga stabilitas enzim. Basis *essence* diformulasi dengan variasi konsentrasi xantan gum (0,1–0,5%), penambahan dapar sitrat pH 5,8 dan disodium EDTA, kemudian dipilih formula terbaik berdasarkan uji pendahuluan. Formula terpilih (F4) selanjutnya ditambahkan serbuk getah pepaya konsentrasi 0,31%. Evaluasi sediaan meliputi uji organoleptik, homogenitas, pH, viskositas, serta potensi eksfoliasi melalui pengukuran aktivitas proteolitik menggunakan metode kasein-Folin. Uji stabilitas dilakukan dengan metode *freeze thaw* selama 6 siklus, dan data dianalisis menggunakan uji *One Way ANOVA*, *Kruskal Wallis*, *Independent sample t-test*, dan secara deskriptif. Hasil penelitian menunjukkan bahwa sediaan berbentuk cairan kental, homogen, berwarna putih keruh, dengan pH $5,53 \pm 0,01$ dan viskositas $516,7 \pm 6,9$ cPs. Hasil aktivitas proteolitik memiliki perbedaan signifikan ($p < 0,05$) dengan aktivitas proteolitik larutan serbuk getah buah pepaya ($0,0977$ U/mL) dan formula dengan serbuk getah buah pepaya ($0,0840$ U/mL). Dapat disimpulkan bahwa serbuk getah buah pepaya masih memiliki aktivitas proteolitik setelah diformulasikan menjadi sediaan kosmeseutikal *sheet mask*.

Kata kunci: *sheet mask*, getah pepaya, papain, aktivitas proteolitik, eksfoliator, *freeze drying*

ABSTRACT

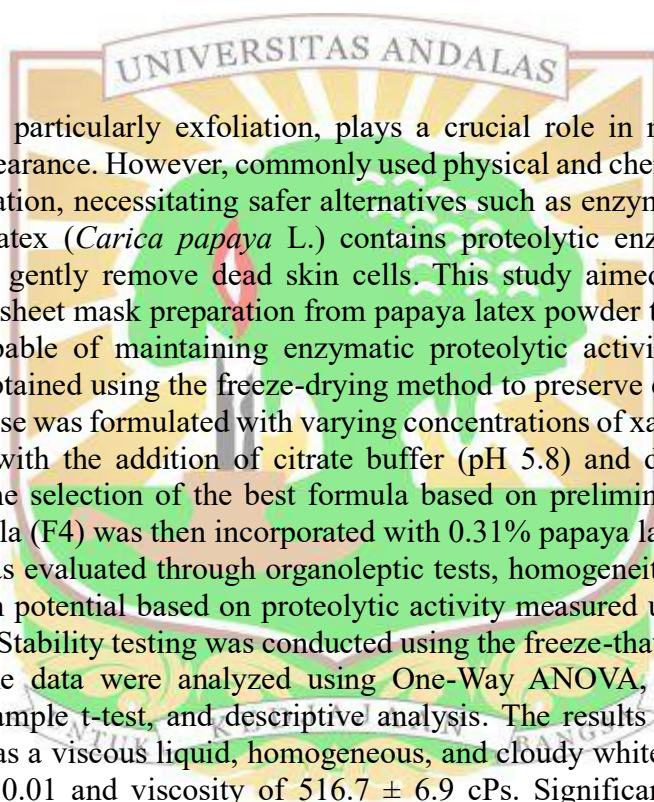
FORMULATION AND EVALUATION OF A COSMECEUTICAL SHEET MASK CONTAINING PAPAYA (*CARICA PAPAYA* L.) LATEX POWDER

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Skin care, particularly exfoliation, plays a crucial role in maintaining skin health and appearance. However, commonly used physical and chemical exfoliators can cause irritation, necessitating safer alternatives such as enzymatic exfoliators. Papaya fruit latex (*Carica papaya* L.) contains proteolytic enzymes, primarily papain, which gently remove dead skin cells. This study aimed to formulate a cosmeceutical sheet mask preparation from papaya latex powder that is physically stable and capable of maintaining enzymatic proteolytic activity. Papaya latex powder was obtained using the freeze-drying method to preserve enzyme stability. The essence base was formulated with varying concentrations of xanthan gum (0.1–0.5%), along with the addition of citrate buffer (pH 5.8) and disodium EDTA, followed by the selection of the best formula based on preliminary studies. The selected formula (F4) was then incorporated with 0.31% papaya latex powder. The preparation was evaluated through organoleptic tests, homogeneity, pH, viscosity, and exfoliation potential based on proteolytic activity measured using the casein-Folin method. Stability testing was conducted using the freeze-thaw method for six cycles, and the data were analyzed using One-Way ANOVA, Kruskal Wallis, independent sample t-test, and descriptive analysis. The results showed that the formulation was a viscous liquid, homogeneous, and cloudy white in color, with a pH of 5.53 ± 0.01 and viscosity of 516.7 ± 6.9 cPs. Significant differences in proteolytic activity were observed ($p < 0.05$), with activity values of 0.0977 U/mL for papaya latex solution and 0.0840 U/mL for the formulated product.. In conclusion, freeze-dried papaya fruit latex powder retained its proteolytic activity after being formulated into a cosmeceutical sheet mask.

Keywords: sheet mask, papaya latex, papain, proteolytic activity, exfoliator, freeze drying