PEMANFAATAN MEMBRAN SELULOSA BAKTERI DARI KULIT PUTIH SEMANGKA SEBAGAI MATRIKS MASKER ANTIOKSIDAN

Deby Regita Saputri
221FF04030

Program Studi S1 Farmasi, Fakultas Farmasi
Universitas Bhakti Kencana

ABSTRAK

Matriks masker wajah yang berasal dari selulosa bakteri memiliki beberapa kelebihan yaitu memiliki nilai toksisitas rendah, ramah lingkungan, menghidrasi kulit, serta memiliki daya serap yang baik. Kulit putih buah semangka diketahui memiliki kandungan *citrulline* yang dapat digunakan mengencangkan kulit dan mencegah keriput pada wajah karena memiliki aktivitas antioksidan. Penelitian ini bertujuan untuk membuat formulasi sediaan matriks masker wajah dari kulit putih buah semangka. Penelitian terdiri dari uji organoleptik, ketebalan, rendemen, kadar air, kadar serat kasar, karakterisasi SEM, kuat tarik dan aktivitas antioksidan. Hasil fermentasi nata pada penelitian ini menunjukan bahwa pada uji organoleptik sampel kulit putih semangka, kombinasi kulit putih semangka dan air kelapa memiliki tekstur cukup kenyal dan pada sampel air kelapa memiliki tekstur kenyal. Uji ketebalan pada sampel kulit putih semangka sebesar 1.102 cm, kombinasi kulit putih semangka dan air kelapa sebesar 0.704 cm dan air kelapa sebesar 1,207 cm. Uji rendemen pada sampel kulit putih semangka sebesar 80,42%, kombinasi kulit putih semangka dan air kelapa sebesar 61,79% dan air kelapa sebesar 91,04%. Uji kadar air pada sampel kulit putih semangka sebesar 97,89%, kombinasi kulit putih semangka dan air kelapa sebesar 98.52% dan air kelapa sebesar 96.06%. Uji kadar serat kasar pada sampel kulit putih semangka sebesar 1.25%, kombinasi kulit putih semangka dan air kelapa sebesar 1.49% dan air kelapa sebesar 1.58%. Uji kuat tarik dan elongasi pada sampel kulit putih semangka yaitu 8.88 (Mpa) dan 12.71 (Mpa), kombinasi kulit putih semangka dan air kelapa sebesar 17.09 (Mpa) dan 27.28 (Mpa), dan air kelapa sebesar 4.63 (Mpa) dan 27.25 (Mpa). Pada aktivitas antioksidan yang didapatkan sangat lemah. Nata kulit putih semangka mempunyai nilai IC50 sebesar 1874.56 μg/mL, kombinasi nata kulit putih semangka dan air kelapa mempunyai nilai sebesar 2342.33 μg/mL, dan nata air kelapa sebesar 3396.25 μg/mL.

Kata Kunci : antioksidan, matriks masker, membran selulosa bakteri

UTILIZATION OF BACTERIAL CELLULOSE MEMBRANE FROM WATERMELON WHITE SKIN AS AN ANTIOXIDANT MASK MATRIX

Deby Regita Saputri
221FF04030

Departement of Pharmacy, Faculty of Pharmacy
Universitas Bhakti Kencana

ABSTRACT

The facial mask matrix derived from bacterial cellulose has several advantages, namely it has a low toxicity value, is environmentally friendly, hydrates the skin, and has good absorption. Watermelon white skin is known to contain citrulline which can be used to tighten the skin and prevent wrinkles on the face because it has antioxidant activity. This study aims to formulate a facial mask matrix preparation from watermelon white skin. The study consisted of organoleptic tests, thickness, yield, water content, crude fiber content, SEM characterization, tensile strength and antioxidant activity. The results of nata fermentation in this study showed that in the organoleptic test of watermelon white skin samples, the combination of watermelon white skin and coconut water had a fairly chewy texture and the coconut water sample had a chewy texture. The thickness test of the sample on the watermelon white skin was 1.102 cm, the combination of watermelon white skin and coconut water was 0.704 cm and coconut water was 1.207 cm. The yield test on the watermelon white skin was 80.42%, the combination of watermelon white skin and coconut water was 61.79% and coconut water was 91.04%. The air sample content test on the white watermelon skin was 97.89%, the combination of white watermelon skin and coconut water was 98.52% and coconut water was 96.06%. The crude fiber sample content test on the white watermelon skin was 1.25%, the combination of white watermelon skin and coconut water was 1.49% and coconut water was 1.58%. The tensile strength and elongation test on the white watermelon skin sample were 8.88 (Mpa) and 12.71 (Mpa), the combination of white watermelon skin and coconut water was 17.09 (Mpa) and 27.28 (Mpa), and coconut water was 4.63 (Mpa) and 27.25 (MPa). The antioxidant activity obtained was very weak. Watermelon white rind nata has an IC50 value of 1874.56 µg/mL, the combination of watermelon white rind nata and coconut water has a value of 2342.33 µg/mL, and coconut water nata is 3396.25 µg/mL.

Keywords: antioxidants, mask matrix, bacterial cellulose membrane