

## INTISARI

Jumlah eugenol yang dapat memberikan aktivitas antibakteri dipengaruhi oleh pelepasannya dari sediaan. Penambahan *release enhancer substance* dapat meningkatkan pelepasan eugenol dan berpengaruh terhadap terapi. Penelitian ini bertujuan untuk mengetahui pengaruh variasi penambahan *release enhancer substance*, yaitu gliserin, propilenglikol dan Tween 80 terhadap pelepasan eugenol dari sediaan *patch* bukal mukoadhesif ekstrak daun sirih.

Ekstrak daun sirih diperoleh dengan metode *freeze drying*. *Patch* dibuat dengan metode *solvent casting* menggunakan kitosan sebagai matriks. Formula dibuat dalam 3 macam berdasarkan variasi *release enhancer substance*. *Patch* yang diperoleh diuji sifat fisika kimianya, meliputi keseragaman bobot, *folding endurance*, *swelling index*, *surface pH*, dan keseragaman kadar. Uji pelepasan zat aktif dilakukan menggunakan *vertical Franz-type cells* dengan medium dapar fosfat pH 6,8. Data keseragaman bobot, *surface pH*, keseragaman kadar, *swelling index*, dan uji pelepasan zat aktif dianalisis secara statistik. Data *swelling index* dianalisis menggunakan ANOVA *one way* dilanjutkan dengan uji *Scheffe*. Data *folding endurance* dianalisis secara deskriptif.

Berdasarkan hasil uji sifat fisika kimia, *patch* dengan *release enhancer substance* gliserin dan Tween 80 memiliki keseragaman bobot dengan nilai CV <5%. Ketiga formula memiliki nilai *folding endurance* >300, *surface pH* berkisar antara 5,5-7, dan keseragaman kadar dengan nilai CV <5%. Hasil uji *swelling index* menunjukkan variasi komponen *release enhancer substance* tidak berpengaruh secara signifikan terhadap pengembangan *patch*. Dari hasil uji pelepasan zat aktif diketahui bahwa *patch* dengan *release enhancer substance* propilenglikol menghasilkan pelepasan eugenol terbesar.

**Kata kunci :** ekstrak daun sirih, *patch*, *freeze drying*, uji pelepasan

## ABSTRACT

The amount of eugenol which can provide antibacterial activity is influenced by the release of pharmaceutical dosage form. Additions release enhancer substance can increase the release of eugenol and influence on therapy. This study aims to determine the effect of variations in the addition of release enhancer substance, namely glycerin, propyleneglycol and Tween 80 on the release of eugenol from a buccal mucoadhesive patch preparation of betel leaf extract.

Betel leaf extract obtained by the method of freeze drying. Patch made by solvent casting method using chitosan as a matrix. Formula made in three types based on variations of release enhancer substance. Patch was tested chemical physical properties, including weight uniformity, folding endurance, swelling index, surface pH, and content uniformity. Release testing of active substances was performed using vertical Franz-type cells with medium phosphate buffer pH 6,8. Data uniformity of weight, surface pH, content uniformity, swelling index, and release testing of active substances analyzed statistically. Data were analyzed using a swelling index of one-way ANOVA followed by Scheffe test. Data folding endurance were analyzed descriptively.

Based on the test results of physical and chemical properties, release enhancers substance patch with glycerin and Tween 80 have a uniform weight to the value of CV <5%. All formula has a folding endurance value >300, surface pH ranging from 5,5 to 7, and uniformity levels of the value of CV <5%. The test results showed component variations release enhancer substance does not significantly influence the development of the patch. From the test results of the release of active substances known that patch with a release enhancer substance propyleneglycol produce the largest eugenol release.

**Keywords: betel leaf extract, patch, freeze drying, release testing**