ABSTRAK

FORMULASI DAN EVALUASI SEDIAAN *MUCOADHESIVE PATCH* EKSTRAK BUNGA TELANG (*Clitoria ternatea*)

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Latar Belakang: Bunga telang memiliki metabolit sekunder berupa flavonoid sekaligus antosianin yang berperan sebagai antiinflamasi dan antioksidan dalam penyembuhan luka setelah pencabutan gigi dengan konsentrasi 15%. Penggunaan sediaan di daerah mukosa, seperti *gingiva* memerlukan sediaan dengan kemampuan adhesif seperti *mucoadhesive patch*. Polimer sebagai penyusun utamanya, seperti HPMC dan PVP bekerja secara sinergis menghasilkan sediaan dengan pelepasan zat aktif yang terkontrol serta kemampuan mukoadhesif yang baik.

Metodologi: Preparasi ekstrak bunga telang dilakukan dengan metode maserasi, dilanjutkan formulasi *patch* dengan variasi konsentrasi polimer HPMC dan PVP, diantaranya FI (1% HPMC; 0,4% PVP), FII (1,5% HPMC; 0,6% PVP), dan FIII (2% HPMC; 0,8% PVP). Selanjutnya, dilakukan evaluasi sifat fisik serta profil difusi flavonoid dari sediaan.

Hasil Penelitian: Variasi konsentrasi polimer terhadap hasil formulasi *mucoadhesive patch* ekstrak bunga telang tidak berpengaruh signifikan terhadap organoleptis, keseragaman bobot, ketahanan lipatan, pH, *swelling index*, dan keseragaman kandungan flavonoid *patch*. Akan tetapi, berpengaruh signifikan terhadap ketebalan sediaan. Profil difusi flavonoid berturut-turut pada menit ke-180 dari FI, FII, dan FIII yakni 97,67%; 81,33%; dan 55,32%.

Kesimpulan: Variasi konsentrasi HPMC dan PVP menentukan sifat fisik *mucoadhesive patch* terutama aspek ketebalan sediaan. Profil difusi flavonoid dari *patch* paling tinggi ditunjukkan oleh FI sehingga semakin rendah konsentrasi polimer yang digunakan, semakin tinggi profil difusi zat aktif dari sediaan.

Kata Kunci: *Mucoadhesive patch*, bunga telang, flavonoid, antosianin

ABSTRACT

FORMULATION AND EVALUATION OF MUCOADHESIVE PATCH OF BUTTERFLY PEA EXTRACT (*Clitoria ternatea*)

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Background: Butterfly pea flower contains secondary metabolites such as flavonoid and anthocyanin, which act as anti-inflammatory and antioxidant agent in wound healing after tooth extraction at a concentration of 15%. The use of dosage form in mucosal areas, such as gingiva, requires dosage form with adhesive properties like mucoadhesive patch. Polymers as the main components, such as HPMC and PVP work synergistically to produce dosage form with controlled release of active substances and good mucoadhesive properties.

Method: The butterfly pea flower extract was prepared using the maceration method, followed by formulation of patch with varying concentrations of HPMC and PVP, FI (1% HPMC; 0,4% PVP), FII (1,5% HPMC; 0,6% PVP), and FIII (2% HPMC; 0,8% PVP). Then, the physical properties and flavonoid diffusion profile of the mucoadhesive patch were evaluated.

Results: Variations in polymer concentration in the formulation of mucoadhesive patches did not significantly affect organoleptic properties, weight uniformity, folding endurance, pH, swelling index, and flavonoid content uniformity of the patches. However, it did significantly affect the thickness of the patch. The flavonoid diffusion profiles at 180 minutes for FI, FII, and FIII were 97,67%; 81,33%; and 55,32% respectively.

Conclusion: Variation in HPMC and PVP concentrations determine the physical properties of mucoadhesive patch, especially in terms of thickness. The flavonoid diffusion profile of the patch was highest in FI, so that the lower polymer concentration used, the higher diffusion profile of the active substance from mucoadhesive patch.

Keywords: Mucoadhesive patch, butterfly pea flower, flavonoid, anthocyanin