

INTISARI

KRISTIANA, R., 2013, FORMULASI DAN EVALUASI BUKAL MUCOADHESIF *PATCH* SALBUTAMOL SULFAT DENGAN VARIASI KADAR POLIVINYL PIROLIDON K-30 DAN NATRIUM KARBOKSIMETIL SELULOSA SEBAGAI MATRIKS, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Bukal mukoadhesif *patch* salbutamol sulfat untuk pemakaian sistemik dalam rongga mulut telah dikembangkan dengan variasi perbandingan CMC-Na dan PVP K-30 sebagai matriks. CMC-Na berfungsi untuk mencegah perlekatan jaringan serta untuk melokalisasi dan memodifikasi kinetik pelepasan obat terhadap membran mukosa sedangkan PVP K-30 berperan meningkatkan pelepasan obat dan daya mengembang polimer, meningkatkan elastisitas serta membentuk lapisan film pada *patch*.

Penelitian ini menggunakan empat formula dengan variasi perbandingan CMC-Na dan PVP K-30 yaitu 10:0; 9:1; 8:2; 7:3 dan satu formula kontrol. Formulasi dievaluasi pada berbagai parameter seperti keseragaman bobot, *folding endurance*, *surface pH*, *swelling index*, keseragaman kadar, dan pelepasan obat *in vitro* dengan medium buffer fosfat pH 6,8 dengan alat tipe 2 USP XXII pada suhu 37°C. Jumlah salbutamol sulfat dalam larutan diukur secara spektrofotometri pada panjang gelombang maksimum 276,2 nm.

Hasil keseragaman bobot semua formula <5%, *folding endurance*>300 kali, *surface pH* 6-7, hasil *swelling indeks* yang paling besar terdapat pada formula 4 mencapai 320,97%, pelepasan obat mengikuti kinetika pelepasan orde nol, dengan model Higuchi mengikuti mekanisme difusi yang diperkuat oleh nilai n pada Korsmeyer-Peppas dari tiap formula <0,45 sehingga mekanisme yang berperan adalah difusi Fick.

Kata kunci: formulasi, bukal mukoadhesif *patch*, salbutamol sulfat, CMC-Na, PVP K-30

ABSTRACT

KRISTIANA, R., 2013, FORMULATION AND EVALUATION OF BUCCAL MUCOADHESIVE PATCHES OF SALBUTAMOL SULPHATE WITH THE DIFFERENCE CONCENTRATION OF POLIVINYL PIROLIDON K-30 AND CARBOXIMETHYL CELLULOSE NATRIUM AS MATRIX, THESIS, FACULTY OF PHARMACY, UNIVERSITY OF SETIA BUDI, SURAKARTA

Mucoadhesive buccal patches of salbutamol sulfate for systemic administration of the oral cavity has been developed with the difference concentration of CMC-Na and PVP K-30. CMC-Na is used to prevent the tissue attachment as well as to localize and modify drug release kinetics of the mucous membranes and PVP K-30 can increase the release of the drug and the swelling of the polymers, increasing elasticity and swelling index of the patches.

This study consist of 4 formulas with the ratio of CMC-Na and PVP K-30 were 10:0; 9:1; 8:2; 7:3 and control. Formulations were evaluated at various parameters such as weight uniformity, folding endurance, surface pH, swelling index, content uniformity and in vitro drug release in phosphate buffer medium pH 6.8 using type 2 apparatus at 37 ° C USP XXII. The amount of salbutamol sulphate in the solution was measured spectrophotometrically at maximum wavelength 276,2 nm.

The results of weight uniformity from all formulas were <5%, folding endurance were >300 times, surface were pH 6-7, the results of the swelling index from 4th formula was reached 320.97%, the drug release followed zero-order release kinetics, by Higuchi model following the diffusion mechanism that is reinforced by the value of n at-Peppas korsmeyer of each formula <0.45 so that the mechanisms that contribute was the Fickian diffusion.

Keywords : formulation, buccal mucoadhesive patches, salbutamol sulphate, CMC-Na, PVP K-30