ABSTRACT

Optimization of HPMC 606 Concentration as A Rate Controlling Membrane On The Release of Meloxicam from Reservoir Type Patch using Cross-Linker at Drug Reservoirs

Rifa'atul Mahmudah

Transdermal drug delivery is controlled release of drugs through the skin to obtain therapeutic levels locally or systemically. One of the dosage form of transdermal preparation is patch. Meloxicam which formulated as transdermal patch have a lot of potential advantages of avoiding hepatic first pass metabolism, maintaining constant therapeutic levels at local sites, minimaze side effect and avoid gastrointestinal adverse effect due to local contact with gastric mucosa by oral administration so that can improve compliance. The effectivity of meloxicam transdermal patch depends on the release of the drug from the base, the amount of drug release from reservoir type patch determined of drug reservoir and rate controlling membrane. In this study, drug reservoir were made using cross-linker agent $CaCl_2$ to increase the mechanical properties of polymer used. Microspheres were evaluated for its FTIR spectrum, DTA thermogram, entrapment efficiency and particle size. Microspheres were made using drug:polymer ratio 1:2 was used as drug reservoir while HPMC 606 was used as rate controlling membrane at various concentration, the physico-chemical characteristics of patch include organoleptic, weight, thickness, drug content and drug content uniformity were evaluated. Meloxicam release from patch were analyzed using dissolution tester paddle method with phosphat buffer saline pH 7,4 ± 0,05 as medium at 37 ^oC for 10 h. Meloxicam concentration was measured using spectrophotometer Uv at 363 nm. The largest cumulative percent value of meloxicam release from transdermal patch as well as flux value was in F3 (HPMC 10%) which is equal to 73,2 ± 0,83 $\mu g/cm^2/menit^{1/2}$.

Keywords: Reservoir type transdermal patch, meloxicam, cross-linking.