INTISARI

PUSPITASARY, K., 2017, OPTIMASI FORMULA TABLET BUKAL MUKOADHESIF PIROKSIKAM DENGAN POLIMER KITOSAN DAN KARBOPOL 940P, SERTA PENGHANCUR POLIETILEN GLIKOL (PEG 6000), TESIS, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Piroksikam adalah salah satu *non steroid anti inflammatory drug* (NSAID) yang bekerja sebagai inhibitor selektif siklooksigenase-1 (COX-1) dan siklooksigenase-2 (COX-2) yang memiliki aktivitas analgesik, dan antiinfamasi yang banyak digunakan dalam pengobatan *arthritis*, *osteoarthritis*, penyakit sendi lainnya dan kasus pembedahan mulut. Penelitian ini bertujuan membuat sediaan tablet bukal mukoadhesif piroksikam yang mempunyai mutu fisik bagus dengan campuran karbopol 940P, kitosan, dan penghancur PEG 6000; mengetahui pengaruh variasi jumlah polimer terhadap sifat fisik dan pelepasan obat.

Penentuan formula dengan *simplex lattice design* menggunakan *software Design Expert*® sebanyak 13 formula. Pembuatan formula tablet bukal dibuat menggunakan metode granulasi kering. Evaluasi uji meliputi, ketebalan, kekerasan, kerapuhan, *swelling index*, kekuatan perlekatan, lama perlekatan, keseragaman sediaan, stabilitas fisik dalam simulasi saliva, pH permukaan, dan pelepasan obat secara *in vitro*. Formula optimum diuji karakteristik fisik dan dibandingkan dengan prediksi hasil *software Design Expert*®.

Hasil uji menunjukkan bahwa kitosan dan karbopol 940P berpengaruh signifikan meningkatkan *swelling index*, PEG 6000 signifikan menurunkan *swelling index*. Karbopol 940P dan kitosan berpengaruh signifikan meningkatkan kekuatan perlekatan, PEG 6000 signifikan menurunkan kekuatan perlekatan. PEG 6000 berpengaruh signifikan meningkatkan pelepasan obat, karbopol 940P dan kitosan signifikan menurunkan pelepasan obat.

Kata kunci: piroksikam, tablet bukal, karbopol 940P, kitosan, PEG 6000.

ABSTRACT

PUSPITASARY, K., 2017, OPTIMIZATION OF PIROXICAM BUCCAL MUCOADHESIVE TABLET WITH POLYMER KITOSAN AND KARBOPOL 940P, AND ENHANCER POLYETHILENE GLYCOL 6000, THESIS, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA.

Piroxicam is one of the non steroidal anti inflammatory drug (NSAID) that acts as a cyclooxygenase-1 (COX-1) and cyclooxygenase-2 (COX-2) selective inhibitor that has analgesic, anti inflammatory activity widely used in the treatment of arthritis, osteoarthritis, other joint diseases and oral surgery cases. The aim of this research is to prepare mucoadhesive piroxicam buccal tablet having good physical quality with mixture of 940P carbopol, chitosan and crushing PEG 6000; to know the effect of variation on the number of polymers on physical properties and drug release..

Determination of the formula with simplex lattice design using Design Expert® software as much as 13 formulas. The preparation of buccal tablet formulas is made using dry granulation method. Test evaluation includes thickness, hardness, swelling index, bioadhesion strength, adhesion duration, uniformity of stock, physical stability in saliva simulation, surface pH, and drug release in vitro. The optimum formula tested the physical characteristics and compared with the predicted results of the Design Expert® software.

The test results showed that kitosan and karbopol940P significantly increased the swelling index, PEG 6000 significantly lowered swelling index. Karbopol940P and kitosan significantly increased bioadhesion strength, PEG 6000 significantly decreases bioadhesion strength. PEG 6000 significantly increased drug release, karbopol940P and kitosan significantly decreased drug release.

Keywords: piroxicam, buccal tablets, karbopol940P, kitosan, PEG 6000.