

## INTISARI

**NUGROHO, AB., 2016, PENGARUH VARIASI KONSENTRASI NATRIUM NIKARBONAT DAN ASAM SITRAT TERHADAP DAYA MENGAPUNG DAN MENGEMBANG SERTA DISOLUSI OBAT DARI TABLET FLOATING VERAPAMIL HCl DENGAN METODE FACTORIAL DESIGN, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.**

Verapamil HCl digunakan untuk terapi hipertensi. Verapamil HCl memiliki bioavailabilitas sebesar 20% dan waktu paruh 2 jam sehingga dapat dibuat sediaan gastroretentive untuk meningkatkan bioavailabilitas dan memperpanjang pelepasan obat. Penelitian ini bertujuan mengetahui pengaruh variasi konsentrasi natrium bikarbonat dan asam sitrat terhadap kemampuan mengapung, mengembang dan pelepasan obat pada tablet floating verapamil HCl.

Penelitian ini menggunakan empat formula variasi konsentrasi natrium bikarbonat dan asam sitrat dengan metode kempa langsung dan dilakukan pengujian terhadap sifat fisik serbuk dan tablet serta pelepasan obat. Pengaruh konsentrasi natrium bikarbonat dan asam sitrat terhadap kemampuan mengapung, mengembang dan pelepasan obat dilihat menggunakan software Design Expert®.

Hasil penelitian menunjukkan bahwa faktor natrium bikarbonat berpengaruh terhadap penurunan *floating lag time*, kenaikan *floating time* dan penurunan pelepasan obat. Faktor asam sitrat berpengaruh peningkatan *floating lag time* dan *floating time* serta penurunan pelepasan obat. Interaksi komponen natrium bikarbonat dan asam sitrat menurunkan pelepasan obat di awal serta menurunkan kemampuan mengembang. Faktor natrium bikarbonat aras tinggi dan asam sitrat aras tinggi (70 : 30) memiliki *floating time* lama, *floating lag time* cepat dan kemampuan mengembang besar serta pelepasan mengikuti orde nol.

Kata kunci : verapamil HCl, *floating*, natrium bikarbonat, asam sitrat.

## ABSTRACT

**NUGROHO. AB., 2016 EFFECT OF CONCENTRATE VARIATION SODIUM BICARBONATE AND CITRIC ACID ON FLOATATION BEHAVIOR, SWELLING AND DRUG DISOLUTION OF VERAPAMIL HCL FLOATING TABLET WITH FACTORIAL DESIGN METHOD, THESIS, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA.**

Verapamil HCl used to treatment of hypertension. Verapamil HCl has a bioavailability of 20% and half-life of 2 hours so that it can be made preparations gastroretentive to improve the bioavailability and prolong the drug release. The aim of study were knowing influence of sodium bicarbonate and citric acid on floatation behavior and swelling, and drug released of verapamil HCl floating tablet.

The research was using four variation of concentration sodium bicarbonate and citric acid by direct compression method and it was evaluated for physical properties of powder and tablet, and drug released. The influence of concentration sodium bicarbonate and citric acid on floatation behavior and swelling, and drug release was determined by software Design Expert®.

The results showed that sodium bicarbonate affect on decreased of floating lag time, increased of floating time and decreased in drug released. Citric acid affect on the increased of floating lag time and floating time but decreased in drug release. Interaction of sodium bicarbonate and citric acid decreased drug released at the beginning and decreased ability of swelling. High level of sodium bicarbonate and citric acid (70 : 30) had the longest floating time, the fastest floating lag time and the largest ability of swelling and followed zero order.

Keyword : verapamil HCl, floating, sodium bicarbonate, citric acid