ABSTRAK

NIKEN PRADELA, 2023, PENGARUH FORMULASI SEDIAAN TABLET *LIQUISOLID* NIFEDIPIN MENGGUNAKAN KOMBINASI TRANSCUTOL DAN LAKTOSA TERHADAP MUTU FISIK DAN DISOLUSI, SKRIPSI, PROGRAM STUDI S1 FARMASI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA. Dibimbing oleh Dr. apt. Ilham Kuncahyo, M.Sc. dan apt. Drs. Widodo Priyanto, M.M.

Nifedipin merupakan obat yang memiliki kelarutan rendah dan permeabilitas tinggi. Upaya menaikkan disolusi dan memperbaiki bioavaibilitas nifedipin dilakukan dengan metode *liquisolid.* Tujuan penelitian ini untuk mengetahui pengaruh transcutol dan laktosa terhadap mutu fisik dan disolusi tablet *liquisolid* nifedipin, serta untuk mengetahui formula terbaik pada pembuatan tablet *liquisolid* nifedipin.

Penelitian ini menggunakan nifedipin dengan bahan tambahan transcutol sebagai pelarut *non-volatile* dan laktosa sebagai *carrier material* menggunakan metode kempa langsung. Tablet dicetak dengan bobot kurang lebih 200 mg dengan variasi perbandingan formula. Formula 1 (20% transcutol : 80% laktosa), formula 2 (25% transcutol : 75% laktosa), formula 3 (30% transcutol : 70% laktosa), dan satu formula sebagai kontrol. Uji yang dilakukan yaitu uji fisik tablet dan disolusi. Data hasil penelitian dianalisis menggunakan *Oneway* ANOVA dan *Turkey's honest significant difference.*

Hasil uji tablet menggambarkan transcutol berpengaruh signifikan menurunkan kerapuhan, menaikkan kekerasan, waktu hancur, keseragaman kandungan, dan laju disolusi tablet, sedangkan laktosa tidak berpengaruh signifikan terhadap mutu fisik tablet, dan memberikan sedikit pengaruh signifikan pada uji granul. Formula yang baik dari seluruh uji mutu fisik, dan uji disolusi yaitu pada formula 2 dengan perbandingan (25% transcutol : 75% laktosa) dan formula 3 dengan perbandingan (30% transcutol : 70% laktosa).

Kata kunci : *liquisolid* nifedipin, transcutol, laktosa, uji mutu fisik tablet, disolusi.

ABSTRACT

NIKEN PRADELA, 2023, THE EFFECT OF LIQUISOLID NIFEDIPIN TABLET FORMULATION USING A COMBINATION OF TRANSCUTOL AND LACTOSE ON PHYSICAL QUALITY AND DISSOLUTION, THESIS, S1 PHARMACEUTICAL STUDY PROGRAM, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA. Supervised by Dr. apt. Ilham Kuncahyo, M.Sc. and apt. Drs. Widodo Priyanto, M.M.

Nifedipine is a drug that has low solubility and high permeability. Efforts to increase dissolution and improve bioavailability of nifedipine were carried out with the liquisolid method. The purpose of this study was to determine the effect of transcutol and lactose on the physical quality and dissolution of nifedipine liquisolid tablets, and to determine the best formula for making nifedipine liquisolid tablets.

This study used nifedipine with transcutol as a non-volatile solvent and lactose as a carrier material using the direct felting method. Tablets were molded with a weight of approximately 200 mg with various formula comparisons. Formula 1 (20% transcutol: 80% lactose), formula 2 (25% transcutol: 75% lactose), formula 3 (30% transcutol: 70% lactose), and one formula as control. The tests carried out were physical tablet and dissolution tests. The data were analyzed using Oneway ANOVA and Turkey's honest significant difference.

The tablet test results illustrated that transcutol had a significant effect on reducing friability, increasing hardness, disintegration time, content uniformity, and dissolution rate of tablets, while lactose had no significant effect on the physical quality of tablets, and had a slight significant effect on the granule test. Good formulas from all physical quality tests, and dissolution tests are in formula 2 with a ratio (25% transcutol: 75% lactose) and formula 3 with a ratio (30% transcutol: 70% lactose).

Keywords : nifedipine liquisolid, transcutol, lactose, tablet physical quality test, dissolution.