

## INTISARI

### **AWOMBO, J. R. C., FORMULASI DAN UJI MUTU FISIK GEL NATRIUM DIKLOFENAK DENGAN VARIASI KONSENTRASI CARBOPOL 940 SEBAGAI GELLING AGENT, KTI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA**

Natrium diklofenak merupakan anti inflamasi dan analgesik, mempunyai efek samping seperti mual, gastritis, tukak lambung. Untuk mengurangi efek samping, pendekatan yang dilakukan dengan membuat sediaan topikal. Penelitian ini menggunakan carbopol sebagai basis gel karena bersifat non toksik dan tidak menimbulkan reaksi hipersensitif secara topikal. Carbopol 940 dapat mempengaruhi mutu fisik gel, untuk itu perlu diteliti pengaruh carbopol 940 terhadap mutu fisik gel dan konsentrasi carbopol 940 yang dapat menghasilkan mutu fisik gel natrium diklofenak yang baik

Konsentrasi carbopol 940 yang digunakan dalam penelitian ini adalah 1%, 1,5% dan 2%. Mutu fisik gel yang diuji meliputi organoleptis, homogenitas, viskositas, daya lekat, daya sebar dan pH. Hasil pengujian dianalisis dengan menggunakan pendekatan teoritis yang membandingkan hasil pengujian dengan pustaka dan pendekatan statistik menggunakan Anova dengan taraf kepercayaan 95%.

Hasil penelitian menunjukkan variasi konsentrasi carbopol 940 berpengaruh terhadap viskositas, daya lekat dan daya sebar gel, namun tidak berpengaruh terhadap organoleptis, homogenitas, dan pH. Semakin tinggi konsentrasi carbopol 940 yang digunakan, maka viskositasnya semakin tinggi dan daya lekatnya semakin besar tetapi daya sebar gel rendah karena berbanding terbalik dengan viskositas. Hasil pengujian menunjukkan gel natrium diklofenak dengan variasi carbopol 940 1% dan 1,5% memiliki mutu fisik yang baik selama 4 minggu. Sediaan gel dengan konsentrasi carbopol 940 2% memiliki daya sebar yang buruk karena tidak mencapai rentang 5-7cm.

Kata kunci: gel, natrium diklofenak, carbopol 940, mutu fisik gel.

## **ABSTRACT**

**AWOMBO, J. R. C., THE FORMULATION AND A PHYSICAL QUALITY TEST OF DICLOFENAC NATRIUM GEL WITH A CONCENTRATION VARIATION OF GELLING CARBOPOL 940 AS A GELLING AGENT, SCIENTIFIC PAPER, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA**

Diclofenac sodium has anti-inflammatory and analgesic effects, has side effects such as nausea, gastritis, peptic ulcer. To reduce the side effects, the approach performed by making a topical formulation. This research has done by using the Carbopol gel as a gel base because it has non-toxic effect and does not cause hypersensitive reactions. Carbopol 940 can affect the quality of physical gels, for it needs to be examined the effect of Carbopol 940 on the physical quality gels of the diclofenac sodium and the concentration of carbopol 940 that can produce gel of diclofenac sodium with good physical quality.

The concentration of Carbopol 940 that used in this research was 1%, 1.5% and 2%. The physical quality of the gel being tested includes an organoleptic test, homogeneity, viscosity, adhesion, dispersive power and pH. The test results were analyzed by using a theoretical approach that compares the test results with the literature and statistical approach using ANOVA at 95% trust level.

The results showed variations in the concentration of Carbopol 940 affected the viscosity, the adhesion and the dispersive power of the gel, but did not affect the organoleptic, homogeneity, and pH. More high the concentration of Carbopol was used, then the viscosity and the power of adhesion become more high and great, but it has low dispersive power of the gel because it was inversely proportional to the viscosity. The test results showed that the gel of diclofenac sodium with a 1% and 5% concentration variations of Carbopol 940 have a good physical quality for 4 weeks. The gel formulation with a 2% concentration of Carbopol 940 has a bad dispersive power because it did not reach the range of 5-7 cm.

Keywords: gel, diclofenac sodium, carbopol 940, physical quality of the gel.