# ABSTRACT

## ANTI-INFLAMMATORY ACTIVITY OF *p*-METHOXYCINNAMIC ACID IN SOLID LIPID NANOPARTICLES SYSTEM USING HYDROXYPROPYL METHYLCELLULOSE 4000 GEL

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*Inflammation is a tissue response in the body to injury and infection. Empirically, p-metoxicinnamic acid has been used as medicine to reduce it. In order to know the effect of anti-inflammatory solid lipid nanoparticles SLN (p-methoxycinnamic acid – Cetyl Alcohol 10%– Tween 80 12%) system from HPMC 4000 gel, it has been done the research where it was evaluated using carrageenan 1%.*

*This research used the complete random design, with 25 Wistar male rats which were 7-8 weeks old and 150-200 g. They were divided into five groups. Group I was treated negative control which using gel base, group II was treated by positive control using 1%sodium diclofenac and group III was treated by p-methoxycinnamic acid gel without addition of Cetyl alcohol and Tween 80 (FI). Group IV was treated by p-methoxycinnamic acid gel with addition of Cetyl alcohol and Tween 80 without SLN formed (FII) and then group V was treated by p-methoxycinnamic acid gel with addition of Cetyl alcohol and Tween 80 in SLN formed (FIII).*

*The survey of hind paws edema was done in 12 hours. From this data, it could be calculated the value of AUC of the edema's thickness to the time, and then the researcher determined the percentage of anti-inflammatory capacity. The result showed that the effect of anti-inflammatory to the Carrageenan-induced paw edema in rats was significant. The most effective was FI, then the second one was FIII and the less effective was FII.*

***Keyword (s)*** *: p-Methoxycinnamic Acid, Solid Lipid Nanoparticles (SLN), HPMC 4000, anti-inflammatory*