

ABSTRACT

Adwiyah. Rabiatul. 2013. The Effect of Gotu Kola Leaf Extract (*Centella asiatica* (L.) Urban) on levels of superoxide dismutase (SOD) antioxidant and glutathione superoksida hydroxyl (GSH) in the ovaries of mice (*Mus musculus*). Thesis, of Biology Department, Faculty of Science and Technology of the Maulana Malik Ibrahim State Islamic University of Malang. Supervisor: Dr. drh. Hj. Bayyinatul Muchtaromah, M.Si.

Keyword : Gotu Kola Leaf Extract (*Centella asiatica* (L.) Urban), levels of SOD antioxidant and GSH, ovaries of mice (*mus musculus*)

Gotu kola contains triterpenoid saponin compounds, genin triterpenoids, flavonoids, alkaloids and Asiatic acid which can be used as antifertilitas. Gotu kola can reduce the number of follicles in high doses whereas at low doses can increase the number of ovarian follicles. Possible decrease in the number of follicles has been damage to the granulosa cells from the effects of the low toxicity of extracts of *Centella asiatica*. The damage of Cell that occurs due to the toxic effect of *Centella asiatica* extract resulted in the formation of the immune system by increasing the intracellular enzymatic antioxidants SOD and GSH. SOD and GSH serves to repair cells that can inhibit the growth and development of follicles in the ovaries. The presence of triterpenoid saponin and phytosterol compounds in gotu kola can effect negative feedback on the release of gonadotropin hormones that can interfere with the formation of follicles (folliculogenesis) in the ovaries, follicles consequently can not develop into a mature follicle (de graff). Purpose of this study to determine the effect of the leaf estrak pegagan (*Centella asiatica* (L.) Urban) on SOD and GSH levels in the ovaries of mice (*Mus musculus*).

This is an experimental study using a completely randomized design (CRD) with 4 treatments (doses of 125, 200, 275, and 350 mg/kg body weight) and 5 replications. Tests carried out using a One Way ANOVA test was continued the Least Significant Difference (LSD) 5%. Animals used is fertile strain female mice Balb/c.

The results of this research showed the leaf extract of gotu kola (*Centella asiatica* (L.) Urban) dose of 200 mg / kg body weight, 275 mg / kg body weight and 350 mg / kg body weight, can reduce levels of SOD in the ovaries of mice, which could interfere with the repair process granulosa cells caused by cytotoxic properties of *Centella asiatica* leaf extract. This resulted in decreasing the number of follicles in the ovaries of mice that can be used as atifertilitas. However, at a dose of 125 mg / kg body weight can increase SOD levels in the ovaries of mice compared with control mice (without treatment). Observations GSH did not influence GSH levels were obtained