

## ABSTRACT

### **The Increase of Immunoglobulin A Titer in Mice (*Mus musculus*) after The Immunization of Soluble Protein of *Toxoplasma gondii* with or without Cholera Toxin Adjuvant Intranasally**

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This study was conducted to investigate the difference effect of intranasal immunization of *Toxoplasma gondii* SPTAg with or without CT adjuvant on IgA intestinal mucosa level. This experimental study was also to find out the interaction effect between combined group of treatment and time of flushing intestinal mucosa collection that influenced IgA intestinal mucosa level. This study was an experimental study designed using factorial 3x4 post test only design. Forty eight mice were divided into 3 groups: First group was the control group, immunized with PBS (*Phosphate Buffer Saline*), second group immunized with SPTAg; third group was immunized with SPTAg and CT adjuvant. Immunization was done once at the beginning of the course of this study. Samples of flushing intestinal mucosa, were collected every week up to week four post immunization. The titration of IgA was performed using ELISA method. Data were analyzed using factorial ANOVA test and LSD test. The use of SPTAg without adjuvant increased Ig A significantly, particularly during week 1 (0,669), and decreased during the subsequent week, because degradation of SPTAg by intestinal normal flora. In mice immunized with SPTAg and CT adjuvant showed, that Ig A response was low at week 1 (0,386), but then was followed with significant increase and reached the peak of IgA response at week 3 (0,632). Subsequently, it reduced and became insignificant ( $p>0,05$ ) up to week 4 (0,551). The result showed that immunization with SPTAg and CT adjuvant was able to maintain IgA response of intestinal mucosa longer than that of immunization without CT adjuvant, probably CT adjuvant could reduce the degradation of intestinal flora, and because IgA switching relative higher in intestinal mucosa than in serum. Conclusively, the immunization with SPTAg and CT adjuvant intranasally was able to induce the increase and change of immune response profile better than SPTAg only.

Keywords : *T. gondii* SPTAg-CT adjuvant – intranasally-IgA