

ABSTRACT

THE INCREASE OF IgM IN MICE (*Mus musculus*) GIVEN WITH *Toxoplasma gondii* SOLUBLE PROTEIN Ag (SPTAg) WITH AND WITHOUT INTRANASAL CHOLERA TOXIN (CT) ADJUVANT

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This study was aimed generally to find the appearance of IgM immune response of the experimental animals against *Toxoplasma gondii* SPTAg immunization applied intranasally with or without CT adjuvant. This laboratory experimental study used Same-Subject Factorial design involving 60 BALB/c mice of 6 – 8 weeks old. These animals were divided into three treatment groups, i.e., control group given with PBS, treatment group with *Toxoplasma gondii* SPTAg, and treatment group with SPTAg and CT adjuvant. Serum was taken from orbital plexus 1 day after immunization 5 times consecutively. IgM immune response was determined from OD (Optical Density) value obtained from Indirect ELISA examination. Data were analyzed using Same Subject factorial Anova. The results showed that immune response measurement, particularly IgM level for each intranasal treatment every day, revealed average OD values in control group in day 1, 2, 3, 4, 5 were 0.32200, 0.29925, 0.30900, 0.31225, and 0.29050; in treatment group with *Toxoplasma gondii* SPTAg in day 1, 2, 3, 4, 5 were 0.37133, 0.35050, 0.38833, 0.44700 and 0.38850; and ; in treatment group with SPTAg + CT in day 1, 2, 3, 4, 5 were 0.29700, 0.31150, 0.929200, 0.27350 and 0.27275. From these results, it is apparent that the highest OD value (0.44700; $p < 0.05$) was obtained in treatment group SPTAg at day 4. It was apparent that in treatment group with *Toxoplasma gondii* SPTAg without CT adjuvant IgM immune response increases higher than that in treatment group with SPTAg + CT. Statistical analysis revealed, first, significant difference ($p < 0.05$) in IgM immune response profile between treatment group with SPTAg and that with SPTAg + CT intranasally; second, significant effect of time ($p < 0,05$) in IgM immune response for treatment groups with SPTAg and SPTAg + CT intranasally, and third, significant interaction of time and treatment ($p < 0.05$) in groups with SPTAg and SPTAg + CT. In conclusion, treatment group with *Toxoplasma gondii* SPTAg could induce the increase of IgM immune response. This was not found in treatment group with SPTAg + CT, which was likely due to short length of observation (5 days), so that the length of observation should be prolonged in further studies.

Keywords : *T. gondii*, SPTAg, CT adjuvant, intranasal immunization, optical density, IgM.