

**THE IMMUNE RESPONSE OF LONG-TAILED MACAQUE (*Macaca fascicularis*) IMMUNIZED WITH POLIOVIRUS AS A DEVELOPMENT OF VIRAL REVERSE FLOW CONCEPT IN ANIMAL POLIOMYELITIS MODEL**

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**ABSTRACT**

The purpose of this study is to analyze the effect of polio vaccine *seeds* administered to the central nervous system (CNS) on immune responses in terms of changes in the number of CD4<sup>+</sup> T cells of long-tailed macaque (*Macaca fascicularis*). The experimental animals were observed for paralysis symptoms and the number of the CD4<sup>+</sup> T cell population before and after treatment. CD4<sup>+</sup> T cell populations were measured using flow cytometry. The result shows that CD4<sup>+</sup> T cell population before and after treatment doesn't have significant difference with p value = 0,433 (p>0,05). The treatment had a clinical effect in the form of extremity paralysis symptoms as much as 64,28% of the experimental animals. It is concluded that treatment has an impact on female animals paralysis is greater as compared to male animals. The treatment doesn't give any significant effect on the number of CD4<sup>+</sup> T-cell population, indicating the absence of virus from vaccine *seed* to induce the immune system to provide a response in the form of CD4<sup>+</sup> T cell proliferation in a time-related. This indicates the lack of reverse flow of poliovirus vaccine, which administered intraspinally. Therefore, the risk of poliovirus from the vaccine to cause enteric-phase can be claimed to be minimal.

**Keywords:** Poliovirus reverse flow, CD4+, *Poliomyelitis*