

Cipto Dwi Handono, 2012, The Effect of Immunostimulatory Some Fraction of Local Sea Cucumber (*Phyllophorus sp*) on Histological Spleen of Mice (*Mus musculus*) that Have Been Infected by *Mycobacterium tuberculosis* This thesis under the guidance of Dr. Dwi Winarni, M.Si and Sugiharto, S.Si, M.Si., Department of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

This research was aimed to know the immunostimulator potential of Phylloporus sp.'s extract and fraction as response of Mycobaterium tuberculosis infection and fraction has the highest potential of immunostimulator based on histological changes in germinal center's diameter of Mus musculus. This research used 60 male mices (Mus musculus) strain BALB/C, age 3-4 months, 30-40 g, then divided into 4 groups of control and 6 groups of treatment. Negative control group (KN), positive control group (KP), polar fraction group (FP), semi-polar fraction group (FS), and non-polar fraction group (FN), then respectively divided into two group based on the day of sacrifice. KN 17, KP 17, FP 17, FS 17, and FN 17 sacrificed on day 17 with once injection of M. tuberculosis on day 14. KN 28, KP 28, FP 28, FS 28, and FN 28 sacrificed on day 28 with the second injection on day 18. KN 17 and KN 28 was only given solvent and was not injected with M. tuberculosis. Solvents were used in the fractionation stage of Phylloporus sp. for each group, polar group, semi-polar group, and non-polar group sequentially are n-hexane, ethyl acetate, and ethanol. The observation of germinal center's diameter used light microscope on 400x magnification by taking 5 germinal center on one slide of spleen with 6 slices each. Germinal center's diameter was the average of the longest and the shortest diameter from measurement. Data was then analyzed using ANOVA and Duncan test $\alpha = 0,05$. The average of germinal center diameter from each group are KN17 = 58,7 μm , KP17=58,3 μm , FP17=73,1 μm , FS17=76,9 μm , FN17=103,5 μm , KN28=57,4 μm , KP28=58,6 μm , FP28=71,2 μm , FS28=70,7 μm , and FN28=90,7 μm with p value of ANOVA=0,00. Based on the result, the negative control group has no difference with the positive one, but the positive control group are different if we compare it with the treatment group. This result indicated that the extract of Phylloporus sp has the potential to be immunostimulator and the fraction which has the highest potency is non-polar fraction.

Key word : *Phylloporus sp. Mycobacterium tuberculosis, diameter of germinal center, polar, semi-polar and nonpolar fraction*