

Happy Mary Ramadany, 2011, The Effect of Giving Three Local Species Sea Cucumber Extract from Pantai Timur Surabaya for Liver of Mice (*Mus musculus*) which Infected by *Escherichia coli*. This Thesis is guided by Dr. Dwi Winarni, M.Si. and Hari Soepriandono, S.Si., M.Si. Department of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

The study was conducted to determine the potential of three species of local sea cucumber spread over Pantai Timur Surabaya (*Paracaudina australis*, *Phyllophorus sp.* and *Colochirus quadrangularis*) to improve immune response by its effect on the liver of mice that is the number of bacteria that migrate to the liver and the extent of inflammation areas in liver tissue 3 days after *E. coli* infection. Experimental animals used male *Mus musculus* Swiss Webster strains were divided into 4 groups namely T0 (without a sea cucumber extract), T1 (given the *Paracaudina australis* extract), T2 (given the *Phyllophorus sp.* extract) and T3 (given the *Colochirus quadrangularis* extract). Extract of sea cucumber performed for 14 days by gavage with a dosage as much as 0,0548 g dry mass/ 20 g weight of mice. 10^8 cell of *Escherichia coli* was intraperitonium injected on day 15th. Determination of the number of bacteria that migrate to the liver is done by TPC (Total Plate Count) in EMB after incubation at 37°C for 24 hours. The inflamed area is calculated using a microscope equipped with the lens of graticulae, magnification 40x10. The data obtained were analyzed with the Kruskal-Wallis test, and to find a significant difference between the two groups performed the Mann-Whitney test. The results showed that *Phyllophorus sp.* is able to enhance the immune response, whereas *Paracaudina australis* is unable to enhance the immune response and *Colochirus quadrangularis* showed immunosuppressive activity.

Keyword: *Paracaudina australis*, *Phyllophorus sp.*, *Colochirus quadrangularis*, immunomodulator, *Escherichia coli*, liver, inflammation