Febby Ristarina, 2011. **Effect of Extracts of Three Types of Cucumbers Local East Coast Surabaya to The Number of Neutrophil Invasion After *Escherichia coli* Infection.** This thesis was guided by Dr. Dwi Winarni, Dra., M.Si and Drs. Rai Pidada, M. Si, Departemen of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

This research was aimed to know the potential of three local sea cucumber *Paracaudina australis*, *Phylloporus sp.* and *Colochirus quadrangularis* in enhancing immune responses to *E. coli* bacterial infections and to know the types of sea cucumbers among *P. australis*, *Phylloporus sp.* and *C. quadrangularis* which have highest potential to enhance the immune response in the body. This research use completely randomized design with using 25 male mice (*Mus musculus*) strain Swiss Webster. *Mus musculus* were divided into 5 treatment group (K1, K2, P1, P2 and P3). K1 and K2 were the control groups were given solvent, while the treatment groups (P1, P2 and P3) were subjected respectively to extracts of sea cucumber *P. australis*, *Phylloporus sp*. and *C. quadrangularis*. Treatment was done for 14 days. The dose of sea cucumber extract given was equivalent to 0.0548 g dry weight of mice/20 g. Each mice was injected by 10^8 *E. coli* intraperitoneally except K1 at day 15 and 18. One hour later, intraperitoneal fluid was taken and those neutrophils were counted using hemocytometer under 400x magnification of microscope. The data were analyzed by ANOVA followed by t test. The Result showed that the number of neutrophil of all groups (K1, K2, P1, P2, and P3) were $3{,}2x10^4 \pm 0{,}99x10^4$; $6{,}75x10^4 \pm 1{,}323x10^4$; $6{,}45x10^4 \pm 2{,}117x10^4$; $16{,}75x10^4 \pm 7{,}274x10^4$ and $18{,}95x10^4 \pm 4{,}715x10^4$. So, the extract of *Phyllophorus sp*., and *C. quadrangularis* had effect on immune response by enhancing the number of neutrophils that invaded the intraperitoneal fluid after *E. coli* infection while *P. australis* not, and that the extract of sea cucumber of *Phylloporus sp.* and *C. quadrangularis* had the same potential in enhancing the immune response based on the indicators of the number of neutrophils that invaded the intraperitoneal fluid after infection with the bacterium *E. coli*.

Keywords: Surabaya East Coast, *P. australis*, *Phylloporus sp.*, *C. quadrangularis*, invasion of neutrophils, *E. coli*, triterpene glycoside