ABSTRACT

Comparison of Antibacterial Activity between Starfish *Culcita sp.* Extract and Ceftriaxone in *Escherichia coli* Growth Inhibition via *In Vitro*

By

ADI NUGRAHA DJ ANWAR

Lampung province is famous for the marine resources, but it is still not been developed optimally. One of these is starfish *Culcita sp*. that could be potentially developed as an antibacterial because it has asterosaponin bioactive components. The main purpose from this research about starfish *Culcita sp*. is to determine the difference in the antibacterial activity of starfish extracts *Culcita sp*. with Ceftriaxone in *Escherichia coli* growth inhibition via in vitro.

In this research, I synthesize starfish extract in a concentration of 1000, 2000, 4000, 8000, and 16000 ppm through multiple extraction process using starfish dry powder and evaporation process. Bacterias that were obtained from Lab. Health Lampung Province are identified through the gram bacteria test, bacteria isolation, and also biochemical identification. Bacterias that have been bred are mixed into the culture medium Muller Hinton Agar (MHA) with addition of antibacterial starfish extract and ceftriaxone through cup-plate technique. MHA are incubated at 37°C for 24 hours and measuring the inhibition zone.

Antibacterial activity of starfish *Culcita sp.* extract in *Escherichia coli* growth shown from inhibition zone measurement. There are differences between antibacterial activity of starfish extracts and ceftriaxone, where ceftriaxone is better at inhibiting the growth of *Escherichia coli*. Starfish extracts *Culcita sp*. with concentration of 16000 ppm had a greater inhibitory compared with all variable concentrations of starfish extract in this research.

Keywords: *Culcita sp.*, Cup-plate technique, *Escherichia coli*.