ABSTRACT

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EFFECT OF INACTIVATED Lactobacillus plantarum F75 TOWARDS THE IMMUNE SYSTEM OF BALB/C MICE INDUCED WITH SHEEP RED BLOOD CELLS ANTIGEN

Viruses and bacterias are major causes of humans and farm animals diseases. Generally, vaccines and antibiotics are used to prevent diseases. However, the use of vaccines is quite ineffective because of the high cost and antibiotics are less desired due to the rise of resistant-bacteria. One alternative to deal with disease is through modulation of the immune system. One way to improve one’s immune system is through the consumption of probiotics. Probiotics are living microorganisms that when consumed has beneficial effect to the host. However, the consumption of living probiotics can caused unwanted side-effect, especially in young individuals or immunocompromised hosts. Another way to use probiotics are through “dead” or inactivated probiotics as an immunomodulator. This study aims to evaluate the effectiveness of heat-inactivated bacterium L. plantarum F75 in modulating host immune system through the activity of phagocytosis and antibody formation. Phagocytic activity assay was performed through splenocytes and cell cultures of E. coli. Phagocytic activity was measured from the inhibition percentage of E. coli’s growth. The inhibitory activity was highest (80.77%) in the group of mice given heat inactivated L. plantarum F75 and injected with sRBC. The administration of heat-inactivated L. plantarum F75 probiotics has also shown to modulate the adaptive immune system, in which antibodies are formed. However, the highest antibody titre was found on group with live L. plantarum F75 and sRBC injection treatment, reaching the value of 9.6 on day 21.

References: 63 (1978-2013)

Keyword: L. plantarum, heat killed, sRBC, phagocytosis, haemagglutination