ABSTRACT

ANTIBACTERIAL ACTIVITY OF PROBIOTIC MICROSPHERE *Lactobacillus acidophilus* FNCC-0051 USING SODIUM ALGINATE MATRIX TO *Propionibacterium acnes* ATCC 11827 IN pH 4,5 AND 6,0

Siti Nafisah

The aim of this study is to analyze antibacterial activity of probiotic *Lactobacillus acidophilus* FNCC-0051 microsphere in buffer media pH 4,5 and 6,0. The microsphere using sodium alginate 2% as matrix and $CaCl_2$ 1,0 M as cross-linked solution. Antibacterial activity test completed by diffusion method using *Propionibacterium acnes* ATCC 11827 as a bacteria experiment. Antibacterial activity shown by inhibitory zone. The inhibitory zone was presented to a linear regression equation y = 6,6000x + 6,3191. The results had an antibacterial activity equivalence of probiotic microsphere to clindamycin phosphate against *Propionibacterium acnes* ATCC 11827. The results in pH 4,5 were 10,11 ± 1,07; 12,16 ± 1,25; 15,73 ± 2,36; 18,81 ± 3,20; 22,99 ± 2,38; 30,74 ± 5,24 ppm and the results in pH 6,0 were 20,98 ± 2,41; 25,58 ± 2,40; 31,04 ± 3,57; 36,09 ± 2,62; 40,47 ± 2,12; 48,38 ± 4,73 ppm. The antibacterial activity of probiotic microsphere in pH 6,0 is bigger than the antibacterial activity of probiotic microsphere in pH 4,5 ($p<0,05$).

Keywords: *Probiotic, Microsphere, Antibacterial activity, pH 4,5, pH 6,0*