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Cloning of lichenase gene into *Bacillus subtilis* and partial characterization of the enzyme

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Enzymes used as feed additives increase the ability of animals to benefit from feed. From these enzymes, animals fed with lichenase enzyme can produce animal foods with high immunity and performance. Therefore, it is possible to obtain more healthy, high quality products in a shorter time. In this study, the recombinant vector pNW33N carrying the lichenase gene of *Streptococcus bovis* genome was transferred into *Bacillus subtilis* RSKK245 strain via electroporation technique. Besides, the DNA band of lichenase obtained from recombinant vector pNW33N/Lichenase after restriction endonucleases was observed on agarose gel. Enzymatic activity sites around *B. subtilis* RSKK245 colonies are shown by staining with Congo-red. The molecular weight of the enzyme was determined as 26 kDa via SDS-PAGE and zymogram analysis. This study has successfully demonstrated expression of lichenase gene in *B. subtilis* RSKK245 strain.

Keywords: Feed conversion rate, β-1,3(4)-Glucanase, Recombinant DNA