CHARACTERIZATION OF MESOPHILIC LIPASE ENZYME FROM COMPOST ISOLATE BACTERIA

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**Abstract.** Lipase is a group of hydrolase enzymes that is widely used in various industrial and biotechnology fields such as the food industry, cosmetics, detergents, pharmaceuticals, organic synthesis and polymer biodegradation. This study aims to characterize the lipase of local isolate mesophilic bacteria from composting domestic waste. The research method used includes production of the enzyme lipase from compost isolate bacteria, partial purification of the lipase enzyme and characterization of the enzyme. The lipase enzyme activity test was performed using the titrimetric method and protein measurement was carried out by the Lowry method. The results showed that the production of the lipase enzyme produced crude extract of 15 U / ml. purification by fractionation of ammonium sulfate obtained enzyme activity of 16.17 U / mL and increased to 17.33 U / mL after dialysis. The results of mesophilic lipase characterization obtained the optimum conditions of pH 7 and temperature of 30 ºC. The presence of Fe3 + metal ions increases lipase activity while metal ions K +, Na +, Mg2 +, Ba2 + and Al3 + decrease the activity of the lipase enzyme. The presence of benzene and toluene organic solvents can also increase the activity of the lipase enzyme from compost isolate bacteria

**Key words:** mesophilic lipase, compost, metal ion, organic solvent