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Assay of Lipase and Biosurfactant Production Activity of Two Keratinolytic Bacteria*Aeromonas media* LU04 and *Enterobacter tabaci* PK09

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Abstract : Assay of lipase and biosurfactant productionactivity of keratinolytic bacterial isolateshas been conducted. Bacterial isolates was collection of Microbiology Laboratory,Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Sumatera Utara, Medan, Indonesia. Assay on lipase activity was done qualitatively using sensitive plate assay method using rhodamine-B olive oil agar and quantitatively using copper soap colorimetric method with cuppric acetate-pyridine reagent and olive oil as substrate. Characterization of lipase was performed in different pH and temperature. Biosurfactant production assay was conducted using oil displacement method to measure oil displacement area (ODA) and measured emulsification index (EI24).The two potential bacteria *Aeromonas media* LU04 and*Enterobacter tabaci* PK09 out of four bacterial isolates showed higher lipase activity with produced more orange fluorescence around the colony with lipase activity of3.767 and 2.054 U/mL and specific activity were 0.443 and 0.346 U/mg, respectively. The lipase activity of both bacteria was optimum at pH 7 and at temperature of 40^{o}C. Biosurfactant production activity showed ODA value of 38.0 and 15.0 mm, and with emulsification index of 20 and 15%. Biosurfactant activity was in line with lipase activity. This might indicated that biosurfactant prodcution and activity was needed in lipase activity.

Key words : biosurfactant, keratinolytic bacteria, lipase,*Aeromonas media*, *Enterobacter tabaci*.

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