

# **Isolation and Identification of Lipase Producing Bacteria from Vermicompost**



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## ABSTRACT

Lipases are enzymes that catalyze the hydrolysis of fat and perform essential role in digestion, transport, and processing in dietary lipids. These biocatalyst are interesting substitute for chemical catalyst because of their fast rate of reaction and better specificity. Lipases are produced by various plants, animals and microorganisms. Lipases such as triacylglycerol hydrolyses are important group of enzyme related to biotechnology. The present study was aimed to isolate microorganisms having the ability to produce lipase, from vermicompost. Isolated strains were identified as *Staphylococcus* sp, *Bacillus* sp, *Pseudomonas* sp, and *Corynebacterium* sp. Detection of lipase enzyme was carried out using three different methods. Isolated strains were grown on agar plates augmented with olive oil as lipid substrate. Formation of transparent rings around bacterial colonies shows hydrolysis of lipids was due to production of extracellular lipases. Methyl orange was used as indicator to detect acidic changes in the medium. Bacterial isolates are grown on agar plates with olive oil as substrate, color change of methyl orange suggested conversion of lipid substrate into fatty acids confirming lipase activity. Production of lipase was also confirmed by UV- spectrometry. UV-spectrometry was carried out after every 7 days for 5 weeks at 470nm; increase in absorption shows presence of lipase. The study was concluded on the note that vermicompost is the potential source of lipase producing bacteria and should be considered for production of bacterial lipases in environmental biotechnology.

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