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Optimization of *staphylococcussaprophyticus*Lipase isolated from windrow Compost

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Abstract: Lipases are versatile biocatalysts that are used extensively in detergent and pharmaceuticalformulations. Their superior value arises from specificity and efficacy as compared to chemical catalysts.In this study we have isolated a bacterial strain *Staphylococcus saprophyticus* (WCS1C2) that showed high lipase productionof 140 units / ml from windrow compost bed. The culture parameters were optimized with altered conditions like temperature, pH, incubation time, substrate specificity and metalions. The lipidicsubstrates tested were coconut oil, olive oilandtrybutyrin. The optimized conditions where maximum lipaseof 644 units/ml producedwere found to be with pH 6.0, incubation temperature at 27^0C and incubation period of 120 hrs.The carbon, nitrogen and metal ion source to be optimal for the production of lipase was found to be with olive oil; peptone + yeast extract combination and sodium chloride 1% respectively. Under optimized conditions, lipase production by *Staphylococcus saprophyticus*increased by 5 fold compared to unoptimized conditions.
Keywords: Lipase, Optimization, Enzyme activity, *Staphylococcussaprophyticus.*

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