

Some characteristics of lipases from thermophilic fungi isolated from palm oil mill effluent

ABSTRACT

Rhizopus oryzae and Rhizopus rhizopodiformis are thermophilic fungi isolated from palm oil mill effluent (POME). They are able to grow up to 50°C and produce remarkable amounts of extracellular lipases. The extracellular lipases from both fungi displayed quite similar characteristics. The optimum pH and temperature for both lipases were 6.0 and 45°C, respectively. However, lipase from *R. rhizopodiformis* was slightly more thermostable than that of *R. oryzae* lipase but the latter was more stable over broader pH ranges compared to the former, specially at acidic pH. Both the enzyme showed rapid loss of activities at temperatures above 50°C and pH above 7.0. Lipase from *R. oryzae* showed broader specificities to substrates than *R. rhizopodiformis*, but both displayed little reactivity for triacetin and polyoxysorbitan (Tween 20, 40, and 60). Both the lipases are 1,3 specific.

Keyword: Lipases; *Rhizopus oryzae*; *R. rhizopodiformis*; Thermophilic fungi