Thermostable extracellular lipase from *Scytalidium thermophilum*: production and some biochemical properties.

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Microbial lipases are the focus of growing interest due to their potential application in detergent, food and pharmaceutical industries, as well as biodiesel production, wastewater treatment and bioremediation. Here we present data on the production and biochemical properties of an extracellular lipase from *Scytalidium thermophilum*. The highest levels of total activity were obtained in liquid medium using 1% olive oil and 1% soy bran as carbon source, after 120h culture at 40°C. Negligible production was observed with glucose, glycerol, Tween, Arabic gum or oleic and estearic acids as carbon sources, and glucose inhibited by 70% lipase production in olive oil. Enzyme production using olive oil as carbon source was stimulated by proline, alanine, lysine and asparagine, but strongly inhibited by the presence of gelatin, soy protein, calcium, wheat bran, Arabic gum and Tween 20 or 80. Optima of pH and temperature of lipase activity in crude extracts, using *p*-nitrophenyl-palmitate as substrate, were 6.5 and 50ºC, respectively. Lipase activity was thermostable up to 60 min at 50°C; at 55°C, the activity fell to 75% of the control after 60 min, remaining constant for additional 120 min. Calcium, manganese, lead, cobalt or magnesium (1mM) stimulated lipase activity (about 2.0-fold). Activity was inhibited 50, 23 and 12% by deoxycholate, polidocanol and CHAPS (1mM), respectively. Interestingly, lipase activity was stimulated about 1.8-fold after 90 min incubation under stirring at 25°C in 50% n-hexane, retaining 59 and 54% of control activity in methanol and dimethylsulfoxide, respectively. Data suggest that *S. thermophilum* lipase has good potential for industrial purposes.
Keywords: extracellular lipase, *Scytalidium thermophilum*, thermal stability.
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