Lipolytic Activities of *Aspergillus japonicus*

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The lipases obtained from the genus *Aspergillus* present remarkable importance in biotechnological applications such as in the food and detergent industries. Nevertheless, in the literature there is no report regarding purification and biochemical properties of lipases from *Aspergillus japonicus*. The aim of this work was to describe the purification of an extracellular lipase from *Aspergillus japonicus*. The fungi was cultivated in a mineral liquid medium Czapeck Dox supplemented with sunflower oil (1% v/v), pH 6.0, and grown by shaking at 180 rpm and 30 °C. After 5 days of incubation, the cultures were filtered through Whatman filter no. 1 and lipase activity was measured with p-nitrophenylpalmitate (pNPP) as the substrate. To evaluate the stability of lipolytic crude extract, the supernatant aliquots were stored under different conditions of temperature (room temperature, freezer -80°C, refrigerator (4°C) and freezer (-4°C)). A pilot purification strategy was: crude extract concentration in Amicon tubes (30Kda), chromatography molecular exclusion column (Superose 12³ HR 10/30 coupled to FPLC system), ion exchange chromatography (Mono Q HR 5/5 coupled to FPLC system) and reverse-phase high performance liquid chromatography. An activity of 7 U/L was achieved and the extract was stable for two months when stored in the freezer (-80°C) with residual enzyme activity of 80%. The strategy of enzyme purification was efficient until the ion exchange chromatography step in other hand, reverse-phase chromatography cause loss of lipolytic activities. An alternative steps is being studied.

Keywords: lipases, *Aspergillus japonicus*, purification, biochemical properties

Supported by: FAPEMIG, CNPq