

Potential halophilic cellulases for *in situ* enzymatic saccharification of ionic liquids pretreated lignocelluloses

Abstract

Ionic liquids (ILs) have been used as an alternative green solvent for lignocelluloses pretreatment. However, being a salt, ILs exhibit an inhibitory effect on cellulases activity, thus making the subsequent saccharification inefficient. The aim of the present study is to produce salt-tolerant cellulases, with the rationale that the enzyme also tolerant to the presence of ILs. The enzyme was produced from a locally isolated halophilic strain and was characterized and assessed for its tolerance to different types of ionic liquids. The results showed that halophilic cellulases produced from *Aspergillus terreus* UniMAP AA-6 exhibited higher tolerance to ILs and enhanced thermo stability in the presence of high saline conditions.

Keywords; Ionic liquids, Cellulases, Lignocelluloses, Saccharification, Halophiles