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Highly active pectinases from newly isolated *Aspergillus tubingensis* strain

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Pectinolytic enzymes represent a large group of enzymes that catalyze the reactions of depolymerization and deesterification of pectin polysaccharides[1]. Saprophytic fungi produce pectinases on a large scale for industrial purposes. These enzymes have a various biotechnological application and their global annual production represents 25% of total industrial enzymes [1,2]. Agro-waste is widely used as economical substrate for the production of pectinases by solid state fermentation [3]. In this study, sugar beet pulp, as a good source of pectin[3], was used as a substrate for enzyme production by *Aspergillus tubingensis*. This strain was isolated from the quince fruit and identified by the molecular DNA marker calmodulin (*CaM*). SSF was performed with this strain on sugar beet pulp (80%) in combination with wheat bran (20%), a potent substrate for pectinase production [3]. The obtained high pectinolytic activity (15 U/mL), determined by 3,5-dinitrosalicylic acid reagent, was in the range of commercial pectinases. Zymography detection, using Ruthenium Red to visualize endo-pectinase activity and pectin-methyl esterase activity revealed several pectinase activity bands. Hydrolysis of different pectin substrates with the obtained pectinase complex was analyzed by thin layer chromatography in order to detect different products such as pectic oligosaccharides, which are emerging prebiotics superior to intact pectin.

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