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Characterization of a polygalacturonase from trichoderma harzianum grown on citrus peel with application for apple juice
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Abstract
A polygalacturonase (PGase) was purified from Trichoderma harzianum, grown on citrus peel, by anion exchange and size exclusion chromatographies. The enzyme had molecular mass of 29 kDa. The extent of hydrolysis by PGase was decreased with increasing of pectin esterification degree. Km and Vmax, using polygalacturonic acid as substrate, were 1.42 mg and 0.66 µmol reducing sugar, respectively. PGase had a broad pH optimum ranged from 4.5 to 7.0 and temperature optimum at 55°C. PGase was stable up to 50°C after incubation for 30 min. All the examined metal cations showed partial inhibitory effects, except for Hg2+which was completely inhibited the enzyme activity. The effect of PGase and wheat α-amylase on apple juice was studied, where the mixture of the two enzymes increased the quantity (135% fold) and clarity degree of apple juice. © 2009, INSInet Publication.

Author Keywords
Apple juice; Mandarin citrus peel; Polygalacturonase; Properties; Purification; Trichoderma harzianum

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