Enzyme-chemical Studies on Plant Cell Wall Degrading Enzymes from *Acremonium cellulolyticus*.

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The xylanase and pectinase components derived from a commercial enzyme preparation of *Acremonium cellulolyticus*, were extensively purified to essential homogeneity by using consecutive column chromatographies. The molecular weight and p*I* values of xylanases I, II and III were 30 kDa and 5.1, 25.5 kDa and 5.2, and 33.5 kDa and 5.7, respectively. The optimum pH and temperature for xylanases I, II and III were pH 3.5 and 55°C, pH3.8 and 55°C, and pH 3.5 and 50°C, respectively. The enzymes were characterized as *endo*-type on the basis of their action patterns on soluble xylan and xylooligosaccharides. Xylanases I, II and III seem to be isoforms judging from N-terminal amino acid sequences, physicochemical and enzymatic properties as well as substrate specificities.

On the other hand, the molecular weight and pI values of pectinases I, II-A, II-B, III and IV were 42 kDa and 6.9, 41.5 kD and 3.7, 98.5 kDa and 4.2, 41.5 kDa and 3.6, and 41 kDa and 4.1, respectively. The optimum pHs and temperatures of pectinases I, II-A, II-B, III and IV for polygalacturonic acid were 4.5 and 50°C, 4.5 and 55°C, 4.5 and 60°C, 5.0 and 60°C, and 4.5 and 50°C, respectively. All purified pectinases seemed to be in favor of polygalacturonic acid and pectin without methoxyl groups as substates. Pectinase II-B seemed to be an *exo*-type enzyme judging from its mode of action and reaction product, on the other hand, other pectinases would be *endo*-type enzymes.