Purification and Properties of an Enzyme Capable of Degrading the Polysaccharide of the Cyanobacterium, *Nostoc commune*[§]

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Nostoc commune, Paenibacillus glycanilyticus, Polysaccharide-Degrading Enzyme

A novel *Nostoc commune*-polysaccharide (NPS)-degrading enzyme with a molecular mass of 128.5 kDa was purified from *Paenibacillus glycanilyticus* DS-1. The optimum pH and temperature of the enzyme activity were 5.5 and 35 °C, respectively. The enzyme completely degraded NPS to oligosaccharides, ranging from tetra to hexasaccharides and could degrade the xylan weakly whereas xanthan, gellan, cellulose, curdlan and *p*-nitrophenyl-β-D-xylopyranoside were not degraded. Homology analysis of the *N*-terminal amino acid sequence of the NPS-degrading enzyme against the PIR and SWISS-PROT databases indicated that the sequence was not homologous to any other polysaccharide-degrading enzyme.