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Purification and Characterization of Endo Poly (α-L-Guluronate) Lyase in the Enzyme System from *Flavobacterium multivolum*

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An alginate lyase was purified from a crude enzyme of *Flavobacterium multivolum* K-11 by successive column chromatographies, such as cation exchange, chromatofocusing, and gel filtration. The enzyme thus obtained migrated as a single band on SDS-PAGE. The relative molecular mass of the enzyme was 43-kDa by SDS-PAGE and 41-kDa by HPLC gel filtration chromatography. The isoelectric point of the enzyme was 8.7. The enzyme exhibited maximum activity at pH 8.0 and 40°C, and was stable in the pH range of 6.0 to 9.0 and at temperatures up to 30°C. The enzyme activity was remarkably inhibited by chemical compounds such as EDTA, PCMB, MIA, TNBS, and *N*-bromosuccinimide. The enzyme was specific for poly-guluronate and produced several kinds of oligomers. Thus, the results suggested that the enzyme was classified as endo poly (α-L-guluronate) lyase (EC 4.2.2.11).

Keywords: alginate lyase, guluronate lyase, alginic acid, *Flavobacterium multivolum*

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