일반학술발표(포스터) 초록

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Enzymological properties of *Paenibacillus* sp. JB-13 cyclodextrin glucanotransferase in 2-*O*-α-D-glucopyranosyl L-ascorbic acid

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2-*O*-α-D-glucopyranosyl L-ascorbic acid(AA-2G) produced from L-ascorbic acid(AA) and dextrin was purified and then identified through spectral and NMR analysis. A series of maltooligosaccharide(AA-2Gn) substituted 2-o-á-derivatives of L-ascorbic acid were examined by HPLC analysis. These were thoroughly hydrolyzed to AA-2G and glucose by treatment with glucoamylase. CGTase exhibited gluoamylase-like activity which removed glucose units sequentially from non-reducing end of oligosaccharide moiety conjugated to AA. However, the linkage between AA and glucose was not cleaved during this incubation period. CGTase may act on AA-2Gn through its glucoamylase-like activity to hydrolyze terminal glucosic bonds readily. In order to hydrolyze efficiently AA-2Gn, glucoamylase-producing microorganism was isolated from Korean Nuruk and identified as *Rhizopus* mold through 16S rDNA sequence analysis. The optimum pH was around 4.5 and the enzyme was stable at pH 6.0-10.0. The optimum reaction temperature for the enzyme was 50℃ and the enzyme was stable up to 45℃. Glucoamylase from *Rhizopus* sp. JP3 was as effective as the glucoamylase purchased from Sigma for the hydrolysis of AA-2Gn.