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Enzymatic production of 2-O- α -D-Glucopyranosyl L-ascorbic acid(AA-2G) by repetitive batch membrane bioreactorKIM, SU-MIN, HAE-YUN KIM, SUNG-KOO KIM² AND HONG-KI JUN¹¹Division of Biological Science, Pusan National University, Pusan 609-735, Korea²Department of Biotechnology and Bioengineering,
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2-O- α -D-Glucopyranosyl L-ascorbic acid(AA-2G), a stable derivative of L-ascorbic acid(AA), is produced by cyclodextrin glucanotransferase(CGTase, E.C.2.4.1.19) in species of *Bacillus*. In contrast to AA, AA-2G is characterized by its high stability toward thermal and oxidative degradation in various aqueous solutions throughout wide range of pH and its non-reducibility. Therefore, enzymatic large-scale production of AA-2G will be very useful for industrial application. The most enzymatic processes in use currently are carried out in batch reactor. Batch reactors suffer with a number of limitations such as batch-to-batch oscillations, high labor cost, frequent start-up and shut-down procedures, and the need to recover the enzyme, or enzyme preparation, after each batch. So we tried to produce AA-2G in a repetitive batch bioreactor with ultrafiltration where a constant conversion could be reached easily even at low enzyme concentration. The production of AA-2G was performed over 13 cycle at 37°C in a reaction volume of 20 ml for 26 days including reaction and filtration. and with the addition of fresh enzyme, the conversion rate was maintained constantly.