C425826 : MAJOR BIOCHEMISTRY
KEY WORD: CYCLODEXTRIN GLYCOSYLTRANSFERASE / CGTase / Bacillus sp. A11
SUPISSARA WANNA : RESTRICTION MAP AND LOCALIZATION OF THE PRESUMED CYCLODEXTRIN GLYCOSYLTRANSFERASE GENE CLONED FROM Bacillus sp. A11. THESIS ADVISOR : VICHIEN RIMPHANITCHAYAKIT, Ph.D., THESIS CO-ADVISOR : ASSIST. PROF. PEERADA MONGKOLKUL, Ph.D., 80 pp. ISBN 974-632-131-5

An enzyme cyclodextrin glycosyltransferase (CGTase ; E.C.2.4.1.19) is able to convert starch to cyclodextrins (CDs), cyclic products that are known to be used in several industries. A CGTase gene from Bacillus sp. A11 had been cloned into an E. coli JM101 using E. coli vectors, pUC18 and pSE411. Recombinant plasmids with CGTase were named pCSBC5 and pCSBC8, respectively. Studing of the restriction map reveal that the DNA insert in pCSBC5 and pCSBC8 are similar, but they are opposite direction. The pCSBC5 also has several extra restriction sites at 3' and 5' ends of the DNA insert (Kpn I, Pst I, Sma I, Sal I and Acc I). No CGTase activity was measurable in transformant CSBC5. However, dextrinizing activity, part of CGTase activity was detected. By subcloning 5 DNA fragments from DNA insert of pCSBC5 into an E. coli vector pUC118, the recombinant plasmids pCSBC9, 10, 11, 12 and 13 were obtained. Transformants containing these plasmids were tested for dextrinizing activity, compare to that containing pCSBC5. The dextrinizing activity of transformant CSBC12 was more or less comparable to that of transformant CSBC5. The DNA insert in pCSBC12 was derived from an EcoR I to Nde I fragment of DNA insert in pCSBC5, which is 1.7 kilobase pair. The dextrinizing activity in transformant CSBC12 was not under the control of lac promoter.

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