

C226153 : MAJOR BIOTECHNOLOGY

KEY WORD: *Streptomyces*/PROTOPLAST FUSION/DNA RESTRICTION FINGERPRINT

WALAIRAT LAOSINCHAI : ANALYSIS OF *Streptomyces* FUSANTS BY DNA RESTRICTION FINGERPRINT. THESIS ADVISOR : ASSO. PROF. PAIROH PINPHANICHAKARN, Ph.D. 96 pp. ISBN 974-582-039-3

Fusants obtained through protoplast fusion between *Streptomyces* sp. 42-9, a xylanase producing strain, and *Streptomyces* sp. 190-1, a glucose isomerase producing strain were analysed. Fusants were able to produce both xylanase and glucose isomerase but at various extents among them. DNA restriction fingerprints from these fusants were compared to those of parental strains. Only D₃ produced unique banding pattern under suitable conditions upon restriction cut with BamHI, 6 unit/ μ g of DNA, and electrophoresed on 0.7% agarose gel at 14 volt/cm.gel for 1 $\frac{3}{4}$ hr. Analysis of DNA restriction patterns by densitometer showed certain degree of similarity of these fusants to each parent. Furthermore, the degree of similarity in restriction fingerprints seemed to be related to both xylanase and glucose isomerase activities.

Xylanase and glucose isomerase from *Streptomyces* sp. 42-9, 190-1 and some fusants were partially purified. SDS-PAGE analysis of these proteins showed that fusants possessed both xylanase and glucose isomerase. Both enzymes had similar molecular weight to those obtained from the corresponding parental strains which were 48,000 and 46,000 daltons for xylanase and glucose isomerase, respectively.