SOMPORN TANSKUL : DNA RESTRICTION ANALYSIS OF STREPTOMYCES BY AGAROSE GEL ELECTROPHORESIS. THESIS ADVISOR :ASSO.PROF. PAIROH PINPHANICHAKARN , Ph.D. 93 PP.

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A method for analysis of Streptomyces chromosomal DNA was described. Chromosomal DNAs from various species of Streptomyces namely Streptomyces sp. 42-9 or S. griseoruber, Streptomyces sp.190-1 or S. cyaneus , S. glaucescens , S.coelicolor A3(2)and S. lividans 1326 were extracted and purified. They were completely cut with type II restriction enzymes. The restriction fragments were separated by one dimensional agarose gel electrophoresis. Suitable restriction enzymes that give distinct restriction banding patterns of DNA among these Streptomyces spp. were BamHI, PstI, BglII and EcoRI. Complete digestion of DNA was performed by incubation with 6 units of enzyme / microgram of DNA at 37°C for 6 hrs. It was observed that the increase of voltage for agarose gel electrophoresis from 8 V / cm of gel length to 14 V / cm of gel length could increased banding resolution.

The restriction fragment fingerprint patterns of the five known Streptomyces spp. were obviously distinguishable. Moreover, the restriction fragment fingerprint patterns of ten unknown Streptomyces spp. being tested were different from those of the known Streptomyces spp. Therefore, species of the unknown Streptomyces could not be identified at present due to the limited number of known Streptomyces spp.