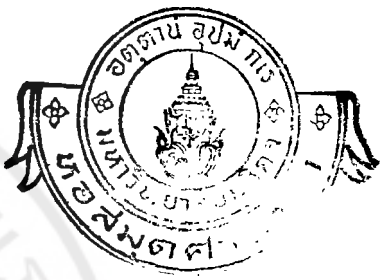
TRANSFER OF PLASMIDS IN BACILLUS THURINGIENSIS SUBSP. ISRAELENSIS



BY

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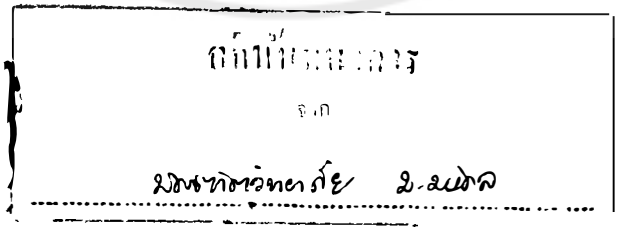
A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENT FOR THE DEGREE OF
MASTER OF SCIENCE
(MICROBIOLOGY)



IN THE
FACULTY OF GRADUATE STUDIES
OF
MAHIDOL UNIVERSITY
1984

SUMMARY

The two selective markers plasmid was constructed, designated pCT 20, by ligation of plasmid pC 194 and plasmid pTp 5. The hyrid plasmid was transformed into *B. subtilis* where it stably maintianed and expressed both chloramphenicol resistance and tetracycline resistance phenotype simultaneously. This plasmid might be very useful in future experiment on genetic manipulation in *B.t.i.*

The transformation of *B. thuringiensis* subsp. *israelensis* (*B.t.i.*) with various plasmid vectors including pCT 20 was carried out by using either protoplast or competent cell transformation but successful result could not be obtained. A lysozyme sensitive mutant i.e. *B. thuringiensis* O 016, was isolated and could be shown to be effectively transformed with plasmid pC 194 and pHV 33 using protoplast transformation technique.

The plasmid pC 194 from *B. thuringiensis* strain O 016-194 could be transferred to *B.t.i.* by the new method of "conjugation-like" process. The plasmid pBC 16 from *B. cereus* could also be transferred to *B.t.i.* with high frequency by using conjugation like process. Additionally, both plasmids, pC 194 and pBC 16, could be transferred between strains of *B.t.i.* which resulted in *B.t.i.* transcipient strain that harbored and expressed both plasmids.

The kinetics of plasmid transfer between *B. cereus* and *B.t.i.* showed that the maximal number of transcipient could be obtained after 18 h of mating. Results obtained in this study on the development of appropriate plasmid vector together with the conjugation-like process of gene transfer in *B.t.i.* could lead to future development of effective gene transfer system in *B. thuringiensis* subsp. *israelensis*.