TRANSPOSONS, PLA-KIDS AND BACTERIOPHAGES AS TOOLS IN GENETIC ANALYSIS OF RHIZOBIUM FROM SESBANTA ROSTRATA

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Sesbania rostrata, a tropical legume which forms nodules on both the roots and the stems, was reported to have a high nitrogen fixing potential (1). The *Rhizobium* strain isolated from stem nodules is capable of growing in culture on atmospheric nitrogen, so that it appears to be an extremely useful *Rhizobium* for genetic research on \( \text{N}_2 \) fixation (2).

Since the use of transposon mutagenesis is a powerful tool to generate mutants with altered symbiotic properties, we tried to introduce Tn5 (Km\(^R\)) transposon in the stem strain ORS 571 using the "suicide" plasmid pJB41 (gent\(^R\), Km, Tn5). (3). We obtained \( \text{Er}^R\text{Gm}^S \) transconjugants at a frequency of \( 10^{-7} \) per recipient. The characterization of the transconjugants obtained is currently being investigated.

Since plasmids are known to play a role in the control of the symbiotic properties of a number of *Rhizobium*, (4), we attempted to detect the presence of plasmids in a strain isolated from stem nodules (root strain ORS 502). The root strain was found to carry a plasmid for ca. \( 100 \times 10^6 \) daltons, whereas the stem strain did not show any plasmid.

To explore the possibility of using bacteriophages for the genetic study of *Rhizobium* strains from *S. rostrata*, we sought to isolate and characterize specific phages. Up to now, we have isolated an icosahedral phage to the stem strain ORS 571.


