- **PROJECT-7 : Regulation of plasmid copy number**

We obtained a mutation designated *cpeB2* that maps in or very close to *rpoB* (the gene encoding b -subunit of RNA polymerase) with the following phenotypes : (i) conditional lethality on low osmolarity medium at 420C; (ii) moderate increase in *proU* expression at low osmolarity; and (iii) lethality of all cells in stationary phase following transformation with the ColE1-like plasmid vector *pACYC184* (1). We are at present undertaking a detailed genetic and molecular characterization of *cpeB2* including isolation of suppressors of the pACYC184-lethality phenotype. One class of suppressor mutations maps to the *hns* gene (1). Preliminary data suggest that an association exists between the onset of lethality of *pACYC184* transformants and a massive increase in the plasmid copy number in the cells. It is therefore expected that these studies will shed light on the roles of various chromosomal genes on regulation of copy number of the ColE1-like plasmids.

1. Jayashree, P., and J. Gowrishankar. 1995. An unusual suicidal interaction in *Escherichia coli* between nucleoid protein H-NS, a mutant RNA polymerase and a 105-bp fragment from plasmid vector *pACYC184*. J. Genet. **74**: 1-17.
