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Identification of Osmo-inducible loci in *Salmonella typhimurium.*

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Most microorganisms adapt and survive to osmotic stress conditions by inducing of specific adaptative system. The purpose of this study is to identify genes participating on osmo-inducible adaptive system in *Salmonella typhimurium.* By using MudJ(km, *lac*) operon fusion technique, we have identified two osmo-inducible *lac* operon fusions, *osib1011, osic1011,* in *Salmonella typhimurium.* Induction fold of these *lac* operon fusions to high osmotic condition was 3-5 folds(*osib1011*) and 15-20 folds(*osic1011*), respectively, and the β-galactosidase assay was performed in several osmotic conditions. In growth rate, B1011 decreased and C1011 was about the same compared with wild type. Both loci are located about 54-57 min. on the chromosome.

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Construction of Mini-shuttle Vector pKU12 and Restriction Enzyme Map

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Mini-shuttle vector, pKU12 was constructed using binary vector pKB1 which was recombinated with pBR322 and pKU10 isolated from *E. coli* and *Pseudomonas putida* KU816, respectively. The pKU12 having ampicillin resistance gene as an antibiotics marker has recognition sites for 7 restriction enzymes and its size is about 5.9 kbs. The restriction map of pKU12 was basically constructed by these restriction enzyme patterns. The pKU12 has ability to be transformed in *E. coli, P. putida,* and *Acinetobacter calcoaceticus* KU48. To investigate the usefulness of pKU12 in cloning of various genes concerned with degradation of recalcitrant aromatic compounds, *xylE* gene was cloned by means of this mini-shuttle vector pKU12. It was confirmed that this vector was useful in cloning of various degrading genes for aromatic compounds.