P51

Cloning and Analysis of *Exopolyphosphatase(ppx)* gene in *Serractia marcescens*

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In the previous study, we got partial *ppx* gene. We confirmed that *Pst* I 4.5kb fragment of *Serratia marcescens* genome DNA was hybridized with the probe DNA, partial *ppx* gene. The *Pst I* 4.5 kb fragment DNA was cloned from *Serratia marcescens* genomic library. The recombinant plasmid was designated as pCX1. The clone was digested with several restriction enzymes to obtain a restriction map of pCX1. We constructed several recombinant subclones from pCX1, the nucleotide sequence of *ppx* gene region, a 1,593 bp sequence of pSXK6 was determined and one open reading frame was detected.

A gene, *ppx*, that encodes a novel exopolyphosphatase was found downstream of the gene for polyphosphate kinase, *ppk*, and transcription of the *ppx* gene depends on the *ppk* promoter, indicating a polyphosphate(polyP) operon.

Analysis of the nucleotide sequence showed the homology in amino acid sequence between PPX protein and *E. coli*, *Salmonellia typhimurium* and *vibrio cholerae* was 68, 68 and 54% respectely.

The *ppx* gene products, polypeptide of 58KDa was confirned by SDS-PAGE. The *E. coli* strain harboring recombinant plasmid with *ppx* and *ppk* gene were increased to accumulation of polyphosphate.