P63

Cloning and Analysis of Phosphate specific transport (*pst* operon) gene in *serractia marcescens*

Seung Jin Lee, Se Hoon Kim, Ok Ryul Song,
Soo Yeol Chung[1] and Young Lark Choi

Division of Biotechnology, Faculty of Natural Resources and Life Science,
Dong-A University
Dept. of Food Science, [1]Dongju college

Recombinant plasmid DNA, pDH3 obtained from genomic library of *Serattia marcescens* and several recombinant subclones constructed from pDH3. The nucleotide sequence of a 5,077 bp segment of the pPH7 was determined and three open reading frames was detected. The three ORFs encoded the *pstC*, *pstA*, *pstB*, which were *pst*(phosphate specific transport) operon. In the case of *S. marcescens*, there are ORFs (*pstC, pstA, pstB*) presumably forming an operon and same direction of transcription. The high-level Pi accumulation was achieved by modifying the genetic regulation and increasing the dosage of the *E.coli* genes encoding polyphosphate kinase(*ppk*), *pst*(phosphate specific transport). Recombinant strain, which contained either pSPK(carrying *ppk*) or pPH7(*pst* operon), removed approximately two and threefold, respectively, more Pi from minimal medium did the control strain. The highest rates of Pi removal were obtained by strain DA23 containing pSHKST(*ppk* and *pst* operon).