F316 Molecular Cloning and Sequence Analysis of the *argC* and *argD* Genes from *Bacillus amyloliquefaciens*

Ji Young Lee*, Jin Yang Baek, and Kyung Hee Min
Department of Biology, Sookmyung Women's University

The 7.8 kb *EcoRI-EcoRI* restriction fragment of *Bacillus amyloliquefaciens* chromosomal DNA was cloned into pUC19. Restriction enzyme analysis revealed that the resulting plasmid, pRGE8, contained the entire *argCJBD* cluster of *B. amyloliquefaciens*. The 7.8 kb insert fragment in pRGE8 was subcloned into pGEM-7Zf and pUC19 for the sequencing. These subcloned plasmids, pRC11 and pRD20, complemented with *E. coli* auxotrophs, which are mutated in genes encoding different enzymes of the arginine biosynthetic pathway. These results suggested that pRC11 and pRD20 contained *argC* gene encoding *N*-acetylglutamate-5-semialdehyde dehydrogenase and *argD* gene encoding *N*-acetylornithine-5-aminotransferase, respectively, of *B. amyloliquefaciens*. The nucleotide sequence of *argC* and *argD* genes were determined. Each complete *argC* of 1,038 bp and *argD* of 1,155 bp contain 346 and 385 amino acid corresponding to a calculated molecular mass of 38.4 and 42.7 kDa. Computer analysis of amino acid sequence homologies reveals a high similarity with *B. subtilis* enzymes which are the products of the *argC* and *argD* genes.

F317 Molecular Cloning and Organization of the Histidine Biosynthetic Genes from *Corynebacterium glutamicum*

Jae-Yeon Chun*, Ju-Young Kim, Sam-Il Jung and Myeong-Sok Lee
Department of biology, Sookmyung Women's University

The genes of *Corynebacterium glutamicum* involved in histidine biosynthesis were cloned and sequenced by complementation of *Escherichia coli* mutants. Complementation of *E. coli hisA,B,C,D,F,G,* and *hisE* genes allowed localization of the corresponding *C. glutamicum* genes, in which the *his* genes were mapped in three unlinked loci. Each locus contains *hisD,C,B* genes, *hisH,A,impA,F* genes, and *hisE,G* genes respectively. Transcriptional organization of the *C. glutamicum his* genes were determined by northern blot and primer extension analysis.