F327 Molecular Cloning and Organization of the Arginine Biosynthetic Gene Cluster of *Corynebacterirum glutamicum*

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A cluster of arginine biosynthetic genes has been cloned and sequenced from fragments of *Corynebacterium glutamicum* DNA isolated by complementing a *Escherichia coli* mutants. Clones complementing defects in *argC, argJ, argB, argD, argF, argG,* and *argH* of *E. coli* were isolated. The gene order has been established as *argCJBDFGH* by linkage and sequencing analysis. Nucleotide sequences of 9.2-kb region allowed the identification of eight ORFs which showed significant homology with the *arg* genes of *Mycobacterium tuberculosis*. The *argR* has also been located in the upstream region of *argG*. Transcriptional analysis by Northern hybridization experiment revealed that three transcripts corresponding to *argC-J*, to *argB-D-F-R*, and to *argG-H* were identified.

F328 Cloning and Sequencing of the *aroA* and *aroD* Genes of *Salmonella typhi* KNHI100 Isolated from Korea

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Typhoid fever is a systemic illness of human which occures as a result of infection of the reticuloendothelial system by *Salmonella typhi*. In this experiment, we used an isolate *S. typhi*, which was isolated by Korea National Institute of Health. The *aroA* and *aroD* genes from *S. typhi* KNIH100, encoding 5-enolypyruvylshikimate-3-phosphate synthase and 3-dehydroquinase, respectively, were cloned into *Escherihcia coli* and consequently the DNA sequence was determined. We cloned 5.0-kb *SalI*(*aroA*) and 3.2-kb *Sal*(*aroD*) fragments containing the structural gene from chromosomal DNA of *S. typhi* KNIH100. The cloned genes were considered to be functional by complementation of *E. coli aroA*$^-$ and *aroD*$^-$ mutants. The *aroA* and *aroD* genes, respectively, were composed of 1,284 and 775 base pairs with ATG initiation codon and TAA termination codon. Sequence comparison of the *aroA* gene exhibited 99%, 98% and 77% identity with that of *S. typhi Ty2, S. typhymurium* and *E. coli*. As in the cases of *Salmonella* sp. and *E. coli*, the *aroA* and *serC* genes lie in a single operonic structure. The use of the cloned *aroA* and *aroD* genes in the development of a vaccine strain against *S. typhi* is discussed.