Molecular Cloning and Organization of the Arginine Biosynthetic Gene Cluster of *Corynebacterium 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 argC-JBDFGH 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.

Cloning and Sequencing of the *aroA* and *aroD* Genes of *Salmonella typhi* KNH1100 Isolated from Korea

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Typhoid fever is a systemic illness of human which occurs 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* KNH1100, encoding 5-enolpyruvylshikimate-3-phosphate synthase and 3-dehydroquinase, respectively, were cloned into *Escherichia coli* and consequently the DNA sequence was determined. We cloned 5.0-kb *SalI*(aroA) and 3.2-kb *SalI*(aroD) fragments containing the structural gene from chromosomal DNA of *S. typhi* KNH1100. 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.