Cloning, Expression and Preliminary Characterization of the perosamine synthase Gene *per* from *E. coli* O157

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Abstract

The *per* gene, encoding a perosamine synthase enzyme, has been cloned from *E. coli* O15. Per can synthesize GDP-D-perosamine from GDP-4-keto-6-deoxy-D-mannose. The D-perosamine is found as a main constituent of LPS in *E. coli* O157, *Brucella* spp., and *Vibrio cholerae* O1. And it is the intermediate of antibiotic perimycin of *Streptomyces coelicolor* var. *aminophilus*. In this study, Per from *E. coli* O15 was expressed and characterized. The molecular mass of His_6-tagged Per, as determined by SDS-PAGE, was 44 kDa. The optimal temperature was 37 °C, and optimal pH was 7.5. It showed the high activity to L-glutamate, L-glutamine, L-aspartate, L-asparagine, and L-alanine as amino donor.

Reference

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