

30-0248

腸炎ビブリオの K⁺輸送系遺伝子のクローニング

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Monovalent cation regulation systems are very complex. Potassium ion (K⁺) is the major cation playing important role in Gram-negative bacteria. It is essential for intracellular pH (pH_{in}), for turgor pressure homeostasis, for the activation of enzymes, for salt tolerance. Also it serves as counter ion for many negatively charged protein residues and negatively charged substrate molecules (intermediates within the cytoplasm). Several researches have demonstrated that chemical challenge by electrophilic compounds elicits a protective mechanism that prevents protein and DNA damage as a result of rapid efflux of intracellular K⁺. In addition to bacterial systems, the potassium ion and its transport and cellular accumulation are also an important regulatory component of higher life forms. So, the necessity to study mechanism of potassium movement precisely became evident.

The potassium uptake and efflux systems in microorganism *Vibrio parahaemolyticus* still leave wide field for understanding. That is why main aim of this work is more close study of potassium ion movement control. Its role in pH homeostasis and growth.

Twelve (12) genes from *V. parahaemolyticus* genome have been cloned as possible candidates to be involved in K⁺ movement across membrane and now are under investigation. It is preliminary to make any farther suggestion, necessary to study each cloned gene more closely to make definite conclusion considering potassium movements across *V. parahaemolyticus* membrane.