

The genetic manipulation of lactic acid bacteria, used in farm animal diets

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SUMMARY

The purpose of our research was to establish experimental recombinant DNA techniques appropriate with some Gram (+) bacteria, such as lactic acid bacteria. We used strains commonly used as probiotics in farm animal diets. The most frequently used microorganisms are strains of *Lactobacillus* species and *Bacillus* species.

Our research focused on two main directions: a) isolation and characterization of some plasmids obtained from lactic acid bacteria; b) improvement and analysis of gene transfer systems in lactic acid bacteria, i.e. protoplasts transformation and electrotransformation of intact cells.

Three plasmids isolated from Gram (+) bacteria were used in our experiments: pC 194, pUB 110 and pHV 41.

Transformation frequencies ranging from 10^2 to 10^2 transformants per μg DNA were obtained with the techniques used by us, the method of electrotransformation having however, a higher transformation efficiency.

Keywords: farm animals, diets, lactic acid bacteria, genetic manipulation, transformation efficiency