

### E313

#### Identification of the Gene and Structural Prediction of Yeast L-Galactono-1,4-lactone Oxidase

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L-Galactono-1,4-lactone oxidase was purified from the mitochondrial fraction of *Saccharomyces cerevisiae* and its amino acid sequence was analyzed. The obtained partial sequences were identical to those of an unknown ORF (NCBI gi: 575717) in the EMBL/GenBank/DDBJ accession number Z46660. In view of its amino acid sequence and molecular mass, the unknown ORF was identified as the gene of L-galactono-1,4-lactone oxidase. Computer-assisted analysis on the amino acid sequence revealed that the enzyme must be an integral membrane protein with one transmembrane segment. However, any amphiphilic  $\alpha$ -helix that may function as mitochondrial targeting signal was not found in the sequence.

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#### Culture Conditions of *Bifidobacterium spp.* for Vegetable Fermentation

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In order to confirm the culture conditions for bifids in vegetable fermentation, the effects of cysteine, pH, and salinity on the growth of *Bifidobacterium bifidum*, *B. longum*, *B. breve*, *B. globosum*, *B. animalis* and *B. magnum* were investigated in the filtrats of Kimchi and Chinese cabbage. The strain showed most wide tolerance range of salt and pH was *B. breve*. And it could grow with tolerance for the salt by 2% of NaCl in both filtrated Chinese cabbage and Kimchi media containing 500 ppm of cysteine and adjusted to pH 5.5. Meanwhile, in the case of those media containing 500 ppm of cysteine and adjusted to pH 4.5, *B. breve* could grow only filtated Chinese cabbage medium with tolerance for the salt by 2% of NaCl. The growth of *Bifidobacterium spp.* was increased by the addition of potassium chloride instead of sodium chloride in Chinese cabbage media. The viability of *B. breve* inoculated in Kimchi medium was maintained by the addition of cysteine upto about 7 days at pH 4.0 to 5.0. Amino acids, tryptophan, tyrosine, phenylalanine, and arginine showed most positive stimulatory effects on the growth of *B. breve*.