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Succinic Acid Synthesis by Ethanol-Grown Yeasts

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Summary

The synthesis of succinic acid in ethanol-containing media has been tested in 32 yeasts of different genera (*Debaryomyces*, *Candida*, *Pichia*, *Saccharomyces*, *Torulopsis*). The capability of succinic acid synthesis was revealed in 29 strains, from which two most effective producers were selected. When grown in a fermentor under high aeration in mineral medium with pulsed addition of ethanol, the strain *Candida catenulata* VKM Y-5 produced succinic acid up to 5.2 g/L with mass yield of 32.6 % and energy yield of 14.8 %; the other strain, *Candida zeylanoides* VKM Y-2324, excreted 9.4 g/L of succinic acid with mass and energy yields of 39 and 17.8 %, respectively. It was indicated that succinic acid formation in the yeasts was accompanied by the synthesis of considerable amounts of malic acid, which was apparently due to a high activity of the glyoxylate cycle. Growth characteristics of both strains were studied in dependence on the concentrations of ethanol, zinc ions and nitrogen in the medium.

Key words: succinic acid, *Candida catenulata*, *Candida zeylanoides*, ethanol

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