

How do yeast cells become tolerant to high ethanol concentrations? - DTU Orbit (09/11/2017)

How do yeast cells become tolerant to high ethanol concentrations?

The brewer's yeast *Saccharomyces cerevisiae* displays a much higher ethanol tolerance compared to most other organisms, and it is therefore commonly used for the industrial production of bioethanol and alcoholic beverages. However, the genetic determinants underlying this yeast's exceptional ethanol tolerance have proven difficult to elucidate. In this perspective, we discuss how different types of experiments have contributed to our understanding of the toxic effects of ethanol and the mechanisms and complex genetics underlying ethanol tolerance. In a second part, we summarize the different routes and challenges involved in obtaining superior industrial yeasts with improved ethanol tolerance.

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Authors: Snoek, T. (Intern), Verstrepen, K. J. (Ekstern), Voordeckers, K. (Ekstern)

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