

Enhancing yeast ethanol tolerance for biofuel production

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The decrease of fossil fuel availability has created a high demand for alternative fuels, including bioethanol produced by yeast fermentation of carbohydrate. Relatively low yields of ethanol can be a major problem in this bioconversion. Approaches to increase efficiency in the fuel ethanol industry include improving yeast metabolic flux and fermentation rate and selection of yeast with higher ethanol tolerance. This study has an alternative approach, aiming to enhance ethanol tolerance of several strains of *Saccharomyces cerevisiae* through modification of growth medium composition. It focuses specifically on two important components which have been shown to positively affect yeast stress tolerance; inositol and L-proline. Various concentrations of these compounds are being added to laboratory scale fuel ethanol fermentations to determine levels that potentiate the highest ethanol tolerance and productivity of the yeast.

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