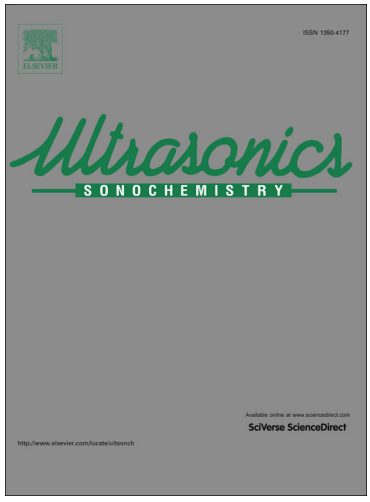

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PII: S1350-4177(16)30422-9
DOI: http://dx.doi.org/10.1016/j.ultsonch.2016.11.035
Reference: ULTSON 3449

To appear in: *Ultrasonics Sonochemistry*

Received Date: 26 October 2016
Revised Date: 27 November 2016
Accepted Date: 28 November 2016

Please cite this article as: C. Dai, F. Xiong, R. He, W. Zhang, H. Ma, Effects of low-intensity ultrasound on the growth, cell membrane permeability and ethanol tolerance of *Saccharomyces cerevisiae*, *Ultrasonics Sonochemistry* (2016), doi: http://dx.doi.org/10.1016/j.ultsonch.2016.11.035

Effects of low-intensity ultrasound on the growth, cell membrane permeability and ethanol tolerance of *Saccharomyces cerevisiae*

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Abstract

Effects of low-intensity ultrasound (at different frequency, treatment time and power) on *Saccharomyces cerevisiae* in different growth phase were evaluated by the biomass in the paper. In addition, the cell membrane permeability and ethanol tolerance of sonicated *Saccharomyces cerevisiae* were also researched. The results revealed that the biomass of *Saccharomyces cerevisiae* increased by 127.03% under the optimum ultrasonic conditions such as frequency 28 kHz, power 140 W/L and ultrasonic time 1 hour when *Saccharomyces cerevisiae* cultured to the latent anaphase. And the membrane permeability of *Saccharomyces cerevisiae* in latent anaphase enhanced by ultrasound, resulting in the augment of extracellular protein, nucleic acid and