

STRESS RESPONSE OF DIFFERENT WILD-TYPE YEAST STRAINS AS A MATTER OF BACKGROUND AND CELL CYCLE

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Stresses are those environmental factors that cause a reduction in growth rate. Changes in the environmental conditions induce *Saccharomyces cerevisiae* cells to a rapid adjustment of metabolism and genomic expression program to adapt to the new situation. Our goal was to compare the response of different wild-type (wt) yeast strains to different environmental stresses. The results were obtained for three brewing, one baker and four laboratory strains. Industrial strains were clearly more sensitive to pressure than the laboratory ones. However, the opposite was seen after heat-shock and little variation occurred for ethanol treatment. Nevertheless, the critical point for survival seems to be different for different strains and it has already been correlated to cell volume. Pressurization of those wt yeast cells after incubation with sinefungin, that leads to G1 arrest, hydroxyurea, an agent that inhibit S phase, or benomyl, that leads to G2 arrest, showed a distinct pattern of response between the strains and the cell cycle point: G1 arrested cells were more resistant than the S and G2 arrested cells, while S phase arrested were at least one log more sensitive than G2 arrested. Baker and alcoholic yeast strains were again more sensitive than the laboratory ones.

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