

Abstract Submitted
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Tolerance of budding yeast *Saccharomyces cerevisiae* to ultra high pressure FUMIHISA ONO, Department of Applied Science, Okayama University of Science, MICHIKO SHIBATA, MOTOKI TORIGOE, YUTA MATSUMOTO, SHINSUKE YAMAMOTO, Okayama Ichinomiya Senior High School, NOBORU TAKIZAWA, Department of Applied Chemistry and Biotechnology, Okayama University of Science, YOSHIO HADA, Department of Biosphere-Geosphere System Science, Okayama University of Science, YOSHIHISA MORI, KENICHI TAKARABE, Department of Applied Science, Okayama University of Science — In our previous studies on the tolerance of small plants and animals to the high hydrostatic pressure of 7.5 GPa, it was shown that all the living samples could be borne at this high pressure, which is more than one order of magnitude higher than the proteinic denaturation pressure. To make this inconsistency clear, we have extended these studies to a smaller sized fungus, budding yeast *Saccharomyces cerevisiae*. A several pieces of budding yeast (dry yeast) were sealed in a small teflon capsule with a liquid pressure medium fluorinate (PC72, Sumitomo 3M), and exposed to 7.5 GPa by using a cubic anvil press. The pressure was kept constant for various duration of time from 2 to 24 h. After the pressure was released, the specimens were brought out from the teflon capsule, and they were cultivated on a potato dextrose agar (PDA). It was found that the budding yeast exposed to 7.5 GPa for up to 6 h showed multiplication. However, those exposed to 7.5 GPa for 12 and 24 h were found dead. The high pressure tolerance of budding yeast is weaker than that of tardigrades.

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