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## Isoproturon increases *Saccharomyces cerevisiae* UE-ME3 proliferation, blocking NADPH and pyruvate generation via cytosolic dehydrogenases

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The isoproturon (IPU) is an herbicide used in Autumn-Winter crops that often persists in soils and aquifers at levels considered toxic by European legislation. In eukaryotic cells the IPU can generate ROS and consequently oxidative stress and it may be involved in triggering of serious illnesses like cancer. Accordingly, it is urgent to find microorganisms useful in bioremediation of this phenylurea. The aim of this study was to evaluate the effect of IPU on survival and antioxidant response of wild-type *Saccharomyces cerevisiae* UE-ME$_3$ from Alentejo wines, Portugal, that present great resistant to metals and adverse cellar conditions. *S. cerevisiae* at mid-exponential phase were inoculated in absence (YEP) or presence of 2% glucose (YEP-D) liquid media without or with 100 μM isoproturon (YEP-IPU; YEP-D-IPU) and incubated at 28°C during 72 hour. The cultures were used to draw growth curves (OD; cfu) and to estimate dry weight as well as to prepare post-12 000 ***g*** supernatant for spectrophotometric determination of protein contents, CAT A, G6PD, and NADP-ME activities. Yeast cells grown in presence of IPU, using glucose as main carbon source or in glucose starvation conditions exhibit a similar growth pattern (OD). However, the number of viable cells (cfu) is greater whenever yeast cells were grown in presence of IPU, fact that reflects higher cell proliferation conditioned by IPU. The CAT A, G6PD and NADP-ME activities has showed higher values in *S. cerevisiae* grown in YEP-D medium than yeast cells grown in YEP-IPU media. The same response pattern was observed when compared YEP-D-IPU with YEP-IPU. Probably, this response can be related with a catabolic repression of oxidative metabolism concomitantly with a eventual enhances of glycolytic flux and fermentation even in the presence of oxygen, caused by IPU inhibition of cytoplasmic conversion malate-pyruvate of *S. cerevisiae* UE-ME$_3$, which conferred a selective growth advantage useful in bioremediation.