

Identification of Optimal Condition for Yeast Producing Superoxide Dismutase

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Abstract

Yeast are eukaryotic microorganism that produces superoxide dismutase (SOD), an antioxidant enzyme, which accelerates the oxidation/reduction process of toxic superoxide radical and protects the body from oxidative damage produced by active forms of oxygen. This enzyme can be used as a therapeutic agent against disease mediated from reactive oxygen species (ROS). The main objectives of this experiment were to isolate and observe the morphology of yeast using different samples like flower, fruit peel, and soil, as well as to identify the optimal conditions for yeast producing highest SOD. Yeast strains were isolated in yeast extract peptone dextrose (YPD) growth media and incubated at 30°C for 24 hours. After serial dilution and isolation, different strains of *Saccharomyces* species were identified from their distinct morphological characteristics. Furthermore, the *Saccharomyces* species was observed to have highest SOD activity after 28 hours of cultivation. In conclusion, SOD activity of different yeast strains varied according to sample and growth conditions. Hence, the yeast strain with the highest SOD activity could be used as supplements with various antioxidants in human nutrition.

Key words: antioxidant, *Saccharomyces*, serial dilution, superoxide dismutase, yeast

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