**Oxidative Stress / H2O2 treatment**

Defense mechanisms in *Saccharomyces cerevisiae:*

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Aerobic organisms utilize oxygen, so they have developed defense mechanisms to combat the effects of Reactive Oxygen Species (ROS).

Oxidative Stress:When the concentration of ROS present in the cell exceeds the capacity of the cells ability to detoxify or to repair damages

Oxidative Stress: **H2O2 Overload**

When the H2O2 exceeds the capacity of Catalase and Gulathione peroxidase, it can be reduced to form a hydroxyl radical ·OH.

The hydroxyl radical is highly reactive and can lead to:

DNA Degradation

Protein Peroxidation

Lipid Peroxidation

**SOD: Superoxide dismutase GPx: Glutathione peroxidase**

<http://www.fluidessentials.com/images/glisodin-chart.gif>

**Hydrogen Peroxide is formed from an oxygen radical and considered to be an (ROS) because it has the ability to form ·OH in the presence of metal ions.**

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http://www.vivo.colostate.edu/hbooks/pathphys/misc\_topics/ros.gif