

# Analysis of Biological Effect of DBD-type Non-thermal Atmospheric Pressure Plasma on *Saccharomyces Cerevisiae*

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Application of plasma technology on microbial sterilization has been frequently studied. In spite of accumulating number of studies, many have been focused on bacteria. Reports on eukaryotic yeasts and filamentous fungi are limited. In addition, mechanism of plasma effect still needs to be clarified. In this study, we analyzed the effect of non-thermal atmospheric pressure plasma on the budding yeast, *Saccharomyces cerevisiae* using DBD-type device. When yeast cells were exposed to plasma (at 2 mm distance) and then cultured on YPD-agar plate, number of cells survived (shown as colony) were reduced proportionally to exposure time. More than 50% reduction in number of colonies were observed after twice exposure of 5min. each. Colonies much smaller than those of control (no plasma exposure) were appeared after twice exposure of 5 min. each. It seems that small colonies are resulted from delayed cell growth due to the damage caused by plasma treatment. Microscopic analysis demonstrates that yeast cells treated with plasma for 5 min. twice have more rough and shrinked shape compared to oval shape with smooth surface of control.

**Keywords:** plasma, *Neurospora*, yeast, fungi, biofilm