

**REVEALING THE EUKARYOCYTE RESPONSE
PATHWAY TO A COLD PLASMA JET USING
S.CEREVISIAE SINGLE DELETION MUTANTS**

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A cold plasma micro-jet (PMJ) has been shown very effective in inactivating numerous kinds of bacteria. However, when treating eukaryocytes, such as yeasts or human cells lines, the effects of a cold plasma on them are more complicated than simple inactivation. This may be due to the complex pathways within eukaryotic cells in response to different kind of stress. Here we used the budding yeast *S. cerevisiae*, a well-studied model, to investigate the eukaryotic response pathways to a treatment by a cold plasma. Different single deletion mutants of *S. cerevisiae* were exposed to an atmospheric-pressure, cold plasma microjet and their respective viability after treatment was measured.

It was found that mutants of oxidative stress-resistant genes are much more vulnerable to the application of a cold plasma than unrelated genes. We further speculate that genes involved in the cell wall pathway are also important during the process. The full details of the interaction of the genes and of the pathways in response to a cold plasma exposure will be discussed at the conference.

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