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RESEARCH ABSTRACT FORM

TITLE: Identification of Potential Targets of Rho5 Involved in Oxidant-Induced Cell Death

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Recent studies in our lab indicate that the Rho5 GTPase is necessary for oxidant-induced cell death in budding yeast. Unlike wild type, rho5Δ mutant was resistant to oxidants, whereas the dominant-active *rho5*^{G12V} mutant, which would express the GTP-locked Rho5, was hypersensitive to oxidants.

The objective of this study is to identify downstream targets of Rho5 using a yeast deletion strain collection. We transformed several deletion mutants with the rho5^{G12V} plasmid and then tested the growth phenotype of their transformants in the presence of oxidants. Deletion mutants that rescue the hypersensitivity to oxidants are likely to function in the Rho5-GTP mediated cell death pathway.

In the preliminary screening, we tested 8 genes known to function in the vacuole and in the process of apoptosis in yeast. We found that the deletions of *PEP4* (Vacuolar protease) and *FRE1* (Ferric and cupric reductase), rescued the hypersensitivity to oxidants. Further analyses will be necessary to confirm whether these genes function downstream of Rho5.