

**THE EFFECTS OF *YAR1* GENE DELETION ON YEAST GROWTH RATE, MORPHOLOGY, AND CELL SIZE. D.L. Mastandrea and R.M. Seiser\*, Roosevelt University, Department of Biological, Chemical and Physical Sciences, Schaumburg, IL 60173, rseiser@roosevelt.edu**

In the budding yeast *Saccharomyces cerevisiae*, a plethora of proteins are implicated in the production of ribosomes, the protein synthesis machines of the cell. One of these proteins is the small ankyrin repeat protein, Yar1. Previous studies found that Yar1 interacts with Rps3, a component of the small ribosomal subunit and with Ltv1, which is involved in small subunit export from the nucleus. Deletion of the *YAR1* gene results in defects in ribosomal RNA production, slow colony growth, and sensitivity to antibiotics and environmental stressors. In this study, we examined the effects of *YAR1* gene deletion during recovery from nutrient depletion. We grew cultures of both wild-type and *YAR1* deletion strains in media containing glucose and assayed the growth rate, morphology and size of cells in these cultures. We show that cells lacking the Yar1 protein grow slower than wild-type cells in newly inoculated cultures and when diluted into fresh media after overnight growth. After this prolonged lag phase, growth rate increases to wild-type levels. We also found that after 16 hours of growth in rich medium, the culture of  $\Delta yar1$  mutants contained fewer small, unbudded cells and more large, unbudded and budded cells than the wild-type culture. These results suggest that cells lacking Yar1 are compromised in the ability to enter the stationary phase and resume normal growth when nutrients are restored.

