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TITLE:

Dynamic changes in protein abundance and phosphorylation in yeast stress response

Abstract:

Yeast cells can sense changes to their environment and rapidly change their protein expression profiles. This rapid signaling in the cell is made possible by phosphorylation of key proteins. Thus, environmental changes lead to cell signaling changes. Here we describe global protein phosphorylation over time in the yeast proteome in response to oxidative stress. We observe phosphorylation changes over two hours at each 10-minute interval under steady-state growth in miniature chemostats, where we can precisely control growth rate. The data shown in this work provides quantifiable changes over time, under controlled conditions, amenable to mathematical models.