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Title: Studies on the Regulation of STR3 in *Saccharomyces cerevisiae*

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Keywords: Biology
Sulphur
Biochemistry
Genes
Saccharomyces cerevisiae

Issue Date: 12-Jul-2017

Publisher: IISER-M

Abstract: The STR3 gene of *Saccharomyces cerevisiae* encodes the enzyme cystathionine beta lyase. This enzyme of the sulphur pathway converts cystathionine to homocysteine. STR3 is known to be under sulphur regulation, but recent studies have suggested that the regulation of STR3 might be more complex. Phylogenetic analysis of the STR3 promoter was carried out to initially identify conserved motifs in the promoter. This was followed up by expression analysis of the STR3 promoter using STR3-GFP reporter fusions. The role of the conserved motifs were investigated by deletion analysis and also by examining expression in different transcription factor deletion backgrounds. This analysis suggested a role for GCN4 in achieving full sulphur derepression. We also investigated the roles of the three MET31/MET32 motifs present in the STR3 promoter but could not find a role, as seen by the mutation of individual motifs. STR3 also did not appear to be upregulated by intracellular cystine based on the reporter gene fusion studies, nor was it affected by the MET12 gene product. A two hybrid analysis of Met12p –Str3p interaction revealed that the two proteins do not appear to physically interact.


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