Title:	Study on Folate Homeostasis in Saccharomyces Cerevisiae under Folate Starvation
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Abstract:	Folates or vitamin B9 are essential water soluble vitamin which plays an important role in various metabolic functions like purine biosynthesis, methionine regeneration, and epigenetic regulation. Many prokaryotes and some eukaryotes have the ability to synthesize folate de novo, one of which is the yeast Saccharomyces cerevisiae. It synthesizes folates by folate biosynthetic pathway. The first step of folate biosynthesis is the conversion of GTP to 7,8-dihydroneopterin triphosphate which is catalysed by GTP cyclohydrolases encoded by the FOL2 gene. Besides its ability to synthesise folate, Saccharomyces cerevisiae has ability to take up exogenous folates from the media. This study focuses on folate homeostasis in Saccharomyces cerevisiae under folate starvation. Earlier studies in the lab had looked at the transcriptome of Saccharomyces cerevisiae wildtype (WT) strain under synthetic folate starvation condition. fol2Δ strain which is a folate auxotroph was grown under folate limitation and the cells were harvested and subjected to RNA sequence analysis. Many genes of the folate cycle and the methionine cycle exhibited altered expression under this condition. Few genes were chosen for a validation by LacZ reporter assay for which LacZ gene was cloned in pRS426 multicopy vector to create a reporter expression vector.
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