

Analysis of flocculins in *Ashbya gossypii* reveals FIG2 regulation by TEC1.

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Abstract

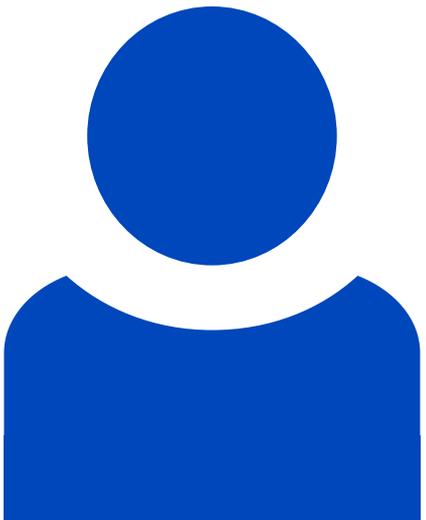
For 95% of the *Ashbya gossypii* protein-encoding genes there is a *Saccharomyces cerevisiae* homolog. Out of these 90% are arranged in a conserved, syntenic, gene order. Interestingly, *A. gossypii* adhesins, encoded by homologs of *S. cerevisiae* FLO-genes, are found in non-syntenic positions. *A. gossypii* contains only a small set of adhesins: two FLO5, a FLO11 and a FIG2 homolog, but no FLO1, FLO9, or FLO10 homolog. Here we present the functional analysis of the *A. gossypii* adhesins and their potential transcriptional regulators SFL1, FLO8, and TEC1. Deletion of individual classes of FLO-genes did not reveal any phenotype. Lack of SFL1 or FLO8 showed reduced growth. The expression of adhesins in different strain backgrounds was tested using promoter-lacZ-fusions. We found that SFL1 acts as a suppressor of one of the FLO5 genes and FLO8 but particularly of FIG2. Interestingly, FIG2 expression was abolished in a *tec1* mutant. We identified three potential Tec1-binding sites in the FIG2-promoter by similarity to *S. cerevisiae* Tec1-binding sites. The AgCHT2 promoter, which regulates a sporulation specific chitinase, also harbours potential Tec1-binding sites. Consequently, expression of CHT2 was not detected in a *tec1* strain. This suggests that Tec1-binding sites are conserved between *A. gossypii* and *S.*

cerevisiae even though there are different Tec1 target genes in each of these organisms.

Beteiligte Forschungseinheiten

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