
Talk

New strategies to find chromatin silencers in the pathogenic fungus *Ustilago maydis*



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ABSTRACT

Ustilago maydis is a smut fungus that infects maize, causing tumors, stunted growth and consequently reduced yields leading to economic losses [2]. A key aspect of the pathogenic development of *U. maydis* is the action of effectors, which are secreted virulence factors with principal roles in plant defense suppression and host's metabolism alterations. Many genes encoding effector proteins are grouped in silenced clusters in the genome highly induced during infection. It has been shown that introduction of resistance marker genes with high expression promoters in these clusters de-repress the surrounding region of the insertion point [3]. Consequently, it is suggested that these clusters are subjected to chromatin silencing. However, *U. maydis* lacks the canonical factors involved in chromatin silencing. The main purpose of this project is to find regulators that control the silencing state of these regions. To achieve this goal we are going to perform a screening in a *U. maydis* strain harboring an antibiotic resistant marker gene inside a silenced cluster. In order to do this strain, we decided to introduce in one of these clusters an antibiotic marker that will be controlled by an endogenous promoter followed of a different resistance marker gene with a high expressed promoter that will disturb the silencing of the region of insertion. Once we obtained this strain, we restored silencing by removing the high expressed gene, which is flanked by two direct repeat sequences, expressing the flippase recombinase [1]. We are currently performing the first steps of the mutagenesis assay using the recently generated strain.

REFERENCES

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