



MOI Project 11

The role of the Exon Junction Complex EJC during infection of *Ustilago maydis*

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Background:

A hallmark for fungal pathogens is a morphological switch from yeast-like to hyphal growth. This holds true for human pathogens such as *Cryptococcus neoformans* or *Candida albicans* as well as for plant pathogens such as *Ustilago maydis*. In the latter, the morphological transition is particularly important during the formation of infectious hyphae. These are essential to penetrate the plant for infection. We discovered that polar growth of infectious hyphae is intricately regulated at the level of RNA biology including regulation of mRNA transport and stability. Recently, we observed that components of the exon junction complex involved in splicing and quality control of mRNA maturation are crucial to orchestrate infectious growth.

Aim of the project:

Study the underlying molecular mechanisms of EJC function that determine efficient formation of infectious hyphae and thus having a deep impact on fungal pathogenicity.

Work program:

In order to address the new mode of regulation the applicant will combine a number of important techniques such as:

- Fungal genetics
- Live imaging using fluorescence microscopy
- Microfluidics
- RNA seq
- Infection studies using the *U. maydis*/corn pathosystem

Thus, we offer a broad education in various modern techniques and are looking for a highly motivated candidate to learn and apply these techniques.