



MOI Project 10

The role of the microtubule cytoskeleton in infection processes

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The microtubule cytoskeleton of a eukaryotic cell is an ancient, highly conserved structure that controls numerous biological processes ranging from morphogenesis and intracellular transport to genome stability and reproduction. Pathogenic fungi such as *Ustilago maydis* employ their inherent microtubule cytoskeleton to drive infection, while obligate, intracellular bacterial pathogens such as *Chlamydia pneumoniae* hijack the host microtubule cytoskeleton for successful infection and propagation in the infected human cell. My lab is interested in understanding how microtubule modulating proteins contribute to infection processes of specific bacteria and fungi. For this we use as a model the fission yeast *Schizosaccharomyces pombe*, which has a well-studied, easily manipulatable microtubule cytoskeleton. Our research encompasses two topics: the characterization of specific chlamydial proteins that alter the microtubule cytoskeleton to their advantage, and deciphering how the fungal microtubule-modulating diphosphoinositol pentakisphosphate kinase (PPIP5K) protein family contribute to fungal infection.