Phosphoregulation of Nrg1 in *Candida albicans*

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The Ascomycete *Candida albicans* colonizes the mucosal epithelium of humans. In healthy people this fungus has a commensal interaction with the host although it could behave as an opportunistic pathogen in people with a deficient immune system. This fungus is able to rapidly activate different developmental programmes in response to changing environmental cues during the colonization of different niches within the host. One of these transcriptional programmes is the yeast-to-hypha transition where the transcription of Hypha-Specific-Genes (HSGs) is regulated through different signalling pathways. During yeast growing conditions, the expression of these HSGs are negatively regulated by the repressor Nrg1. In response to hyphal growth inducers, this repressor is inactivated by a poorly understood mechanism.

In this work, we have studied the regulation of Nrg1 during the yeast-hyphal transition. Using sited-directed mutagenesis and fluorescence microscopy, we found that Nrg1 is a phosphoprotein that is temporal and spatially regulated in response to serum (a hyphal inducer). Our data suggest the existence of two independent mechanisms: a) Activation of Nrg1 degradation upon phosphorylation of a SP cluster present at the N-terminal of Nrg1. b) Disruption of the Nrg1-DNA interaction that might be regulated by the Ndr1 Kinase Cbk1.

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