

Meeting abstract

Fungal GPCR signaling in pheromone response

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The mushroom *Schizophyllum commune* shows several phenotypes linked to pheromone signaling and Ras-dependent development. The genes involved in MAPK signaling, cAMP dependent signaling and Rho signaling all turned on after pheromone recognition in a Ras-dependent manner have been analyzed using the genome sequence. Receptor-pheromone recognition leads to mating and is dependent in mated dikaryons for nuclear migration and clamp cell fusion. In vitro mutagenesis could show domains in the protein involved in ligand recognition. Receptor localization and expression studies could elucidate the involvement in clamp cell fusion. The signal is transmitted through a MAPK cascade and via Ras. Ras constitutive mutant alleles transformed into a wildtype recipient as well as deletion of a RasGap lead to enhanced intracellular signaling. By this approach phenotypes in clamp cell fusion, mushroom development and meiosis, as well as hyphal directional growth can be linked to Ras signaling.

The genome sequence allowed us to identify components, which are used for expression studies during pheromone response and mating. A proteome analysis additionally is used to define components involved in pheromone response in this easily tractable fungus.