

Yeast chemotrophic growth: an attractive model system

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An important property of *Saccharomyces cerevisiae* (yeast) is their ability to propagate as haploids. Haploid **a**- and α -cells secrete type-specific pheromones that promote cell fusion and the formation of an **a**/ α diploid. Pheromone stimulation leads to a well-defined series of events required for mating, including readily-assayed responses, such as MAPK phosphorylation, new gene transcription and morphological changes. In particular, **a**-cells undergo chemotrophic growth in which they elongate in the direction of increasing pheromone concentration. Thus yeast is an attractive model system for studying cell differentiation and gradient sensing. We present recent computational and experimental investigations designed to elucidate the signaling events that lead to chemotrophic growth.