

P001 Activation of cell separation through Ace2p is coordinated to cytokinesis and morphogenesis

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Schizosaccharomyces pombe is a yeast which divides by medial fission by constriction of a contractile actomyosin ring and is an attractive model for the study of cytokinesis. Since *S. pombe* cells are surrounded by cell wall, the division involves the synthesis of a division septum. This septum must subsequently be cleaved for completion of cell separation. Several glucanases, such as the β -1,3-glucanase Eng1p and the α -glucanase Agn1p, are involved in cell separation, alongside proteins of unknown function (Adg1p, Adg2p and Adg3p).

These proteins are coded for by genes whose expression oscillates throughout the cell cycle with a maximum peak before septation. Their expression is regulated by the zinc finger transcription factor Ace2p. *ace2*⁺ expression is also cyclical and peaks before its target genes.

Furthermore, Ace2p is a phosphoprotein and phosphorylation state is important for its stability and its function. The NDR Kinase Orb6p and the GC Kinase Sid1p influence Ace2p localization, stability and function.

The signal for activation of cell separation through Ace2p is produced after the actin ring has formed and has begun to contract. Activation of Ace2p is inhibited by the Septum Initiation Network (SIN). Ace2p only promotes transcription when the SIN is inactivated.