**P007** The effect of Sch9 on activity, cAMP binding and expression levels of PKA in yeast cells

**Wendy Louwet, Paula Portela, Silvia Moreno and Johan Thevelein**

*Flanders Interuniversitary Institute for Biotechnology Department of Molecular Cell Microbiology, KULeuven Institute of Botany and Microbiology Kasteelpark Arenberg 31 B-3001 Leuven Belgium, Laboratorio de Biologia Molecular Departemento de Quimica Biologica FCEyN UBA Ciudad Universitaria-Pabellon 2 Piso 4 1428 Buenos Aires Argentina*

In all organisms, external factors regulate intracellular processes via signal transduction-pathways. In *Saccharomyces cerevisiae*, nutrient availability regulates metabolism and growth. Yeast prefers glucose as energy source and is the first messenger of important signalling pathways, such as the cAMP-PKA signalling pathway. The cAMP–dependent protein kinase (PKA) plays a key role in this signalling pathway. cAMP transiently activates PKA and this causes a phosphorylation cascade that activates or inactivates enzymes and transcription factors. Another nutrient-induced signalling pathway requires not only a fermentable carbon source, but all other nutrients required for growth (e.g. nitrogen, phosphate and sulphate). Hence this pathway is called fermentable-growth-medium-induced (FGM) pathway. Activation of this pathway is not mediated by cAMP, but requires only the catalytic activity of PKA (Tpk1, Tpk2 or Tpk3). The Sch9 protein kinase is required for the nitrogen-induced activation of the FGM-pathway and is homologous to the yeast TPK-genes and to protein kinase B from higher eukaryotes. Sch9 was proposed to act as an inhibitor of PKA. In this study we suggest that Sch9 might be required for proper post-translational modification of PKA which could be essential for its signalling function.

Key words: Saccharomyces cerevisiae, nutrient sensing, Protein kinase A