

P001 Functional analysis of chimeras and deletion mutants of phosphate transporters in *Saccharomyces cerevisiae*.

Popova Yulia, Thevelein Johan

*Flanders Interuniversity Institute for Biotechnology,
Department of Molecular Microbiology, VIB10, Laboratory of
Molecular Cell Biology, KULeuven, Kasteelpark Arenberg 31,
B-3001, Belgium.*

Metabolism of *S.cerevisiae* yeast changes depending on the ambient nutrients and their amount. Yeast cell monitors nutrient availability using sensing systems localized in the plasma membrane, which translate information into signal transduction pathways. Pho84, Pho87, Pho90 and Pho91 carriers sustain phosphate-induced activation of trehalase, which is a typical target of the PKA-pathway. To determine parts of phosphate transporters, which are responsive for the transmission of phosphate signal, we constructed different deletion alleles. It was found that deletion of the C-terminal part of Pho87, Pho90 and Pho91 abolished phosphate uptake capacity and trehalase activation. Deletion of the N-terminal part of these proteins did not influence these parameters. In contrast, Pho84 deprived the N-terminal part could not support the transport and trehalase activation. Deletion of the C-terminal part had not such effect. To obtain additional information about function of terminal parts of Pho84, Pho87, Pho90, we tested chimeric transporters on their ability to support transport and trehalase activation. It was found that chimera, where the C-terminal Pho84 part was changed on the C-tail of Pho90, was completely functional phosphate transporter mediating trehalase activation. Replacement of the N-terminal part of Pho84 caused loss of the phosphate-induced trehalase activation, but this protein kept ability to support transport. This result agrees with data obtained with deletion versions of these proteins. It proves that the N-terminal Pho84 part is important for supporting of phosphate signalling. This result also shows that N-terminal part of Pho90 is essential for transport capacity.