

Abstract

During development of *Saccharomyces cerevisiae* colonies on solid substrate, metabolic transitions occur, which are reflected by pH changes around the colony and also by changes in cell membrane potential. Analyses of transmembrane potential oscillations revealed a function for Plasma Membrane Proteolipid 3 (Pmp3p) in this process. The thesis discusses possible function of Pmp3p protein mainly on the basis of direct observation of Pmp3p localization in vivo under variety of cultivation conditions. Yeast strains with different variants of Pmp3p protein fused with different protein tags that allow monitoring of Pmp3p localization and concentration in cells were prepared by homologous recombination. Localization of Pmp3p in the plasma membrane and in lipid particles was found. The Pmp3p level in cells was stable during development of colonies growing on either respirative or fermentative carbon source medium. High concentration of extracellular sodium chloride did not evoke increase in Pmp3p-GFP concentration.

Key words: Pmp3p, proteolipids, UPF0057 (PMP3) family, *Saccharomyces cerevisiae*, long term survival, lipid particles