

*The master's thesis is focused on the study of response of the intracellular pH of the yeast cells on various external environments, primarily in a relation to the protonophore carbonyl cyanide m-chlorophenylhydrazone, CCCP. To measure the intracellular pH of the yeast cells we used a genetically coded fluorescent probe the ratiometric pHluorin. Using the method of synchronously scanned fluorescent spectra we were able to measure the intracellular pH of the cells with high precision. As a part of these experiments we also studied the influence of ionic strength of the cell suspensions buffers on the surface potential as well as the influence of the mineral salt KCl on the depolarization of the yeast membranes and cytosolic acidification induced by the protonophore CCCP. We examined the changes of cytosolic pH as such but we also used the measured pH as an indicator of the processes and the state of environment outside the cell. One of the most notable outcomes of this thesis is a new method of monitoring the value of the surface potential of the yeast cells by measuring the titration curves of cytosolic acidification induced by the protonophore CCCP.*