

## **Abstract**

The family of 14-3-3 proteins is one of great regulatory significance, which can be found in all the eucaryotic organisms and consists of seven isoforms in human cells. The function of 14-3-3 proteins rests in the interaction with their ligands, of which several hundreds has been identified. The key role of these partners comes to pass in many cellular processes such as signalization, regulation of a cell cycle and division, apoptosis and others.

This thesis deals with the interaction of 14-3-3 protein with fosfatidylinositol 4-kinase III $\beta$  on a molecular level using the method of X-ray crystallography. Phosphatidylinositol 4-kinase III $\beta$  (PtdIns4KIII $\beta$ ) situated on a cytosol side of mostly Golgi aparatus membranes catalyses the connection of a phosphate group to the fourth carbon of an inositol circle. The activity of PtdIns4KIII $\beta$  depends upon the phosphorylation of Ser294. Not only this phosphorylation increases the kinase activity PtdIns4KIII $\beta$ , but is the condition of 14-3-3 proteins binding as well. This interaction provides the protection of PtdIns4KIII $\beta$  against dephosphorylation and this way it guarantees continual synthesis of phosphatidylinositol 4-phosphate, a major signalization molecule and the precursor of other phosphate derivatives of phosphatidylinositol. (In Czech)