

Phosphatidylinositol 4-kinases (PI4K) are enzymes that form phosphatidylinositol-4-phosphate, which is an important regulatory molecule and precursor for the synthesis of other regulatory molecules. PI4K are interesting from medical aspect, because of connection between their function and viral, malignant, metabolic and neurodegenerative diseases. PI4K type II are inhibited by calcium cations, whereas PI4K type III aren't. The goal of this thesis was to elucidate the relationship between structure and regulation of function of PI4K II $\alpha$ , specifically regulation by calcium cations. We failed in preparation of mutated forms of PI4K II $\alpha$  that wouldn't be inhibited by calcium cations. However, the results obtained suggest, how aminoacids N313, D346 and E193 affect the kinase activity of PI4K II $\alpha$ .

(In Czech)