

+ssRNA viruses after entering the cell develop platforms for RNA replication called replication organelles. Due to the activity of phosphatidylinositol 4-kinases in these areas there is a higher concentration of PI4P, which establishes a suitable binding environment for the viral polymerase 3D^{POL}. One of these kinases is PI4KB, which is recruited to the membrane by the ACBD3 protein, which is itself recruited by giantin. Some kobuviruses and enteroviruses from the *Picornaviridae* family use their 3A protein to displace ACBD3 protein from the complex with giantin and transfer it from Golgi apparatus to the replication organelles. Here, PI4KB binds to ACBD3 protein and synthesizes PI4P. Recently, two proteins – TBC1D22A and TBC1D22B – were discovered to bind to the same area of ACBD3 protein as PI4KB. The goal of this project was verification of this interaction and its subsequent characterization (e.g. dissociation constant measurements). My goal was to crystallize complexes of these interaction partners and to solve three-dimensional structure. Our results suggest, that interaction of ACBD3 protein with peptides derived from TBC1D22A and TBC1D22B proteins is much lower compared to interaction between ACBD3 protein and PI4KB. I successfully prepared crystals, however, they diffracted poorly, not allowing us to solve the three-dimensional structure, the crystals must be further optimized. (In Czech)