

## **Abstract**

Phosphoinositides are very important in regulation activity of many signaling proteins not just in cellular membranes. Phosphatidylinositol - 4 - kinases (PI4K) generate phosphatidylinositol - 4 - phosphate, an emerging regulatory molecule and precursor of important regulatory phosphoinositides. PI4Ks are associated with pathogenicity of several RNA viruses including *Picornaviridae* (poliovirus, coxsackie virus, aichi virus, enterovirus 71) and *Flaviviridae* (hepatitis C virus). PI4Ks also play important role in cancer. This study strives to clarify the mechanism of regulation of PI4K type II  $\alpha$  by its potential interaction with Vesicle - associated membrane protein 3 (VAMP 3) of the SNARE protein family (Soluble N - ethylmaleimide Sensitive Fusion Attachment Protein Receptor).