

## **Abstract**

Polyomaviruses are small DNA viruses, which are able to induce a broad variety of tumors. The main oncoprotein of the mouse polyomavirus (MPyV) is middle T antigen (MT antigen) which is able to transform cells. MT antigen has not an enzymatic activity of its own. It is able to activate signal transduction of host cells through its interactions with certain cellular proteins. These proteins include protein phosphatase 2A (PP2A), Src kinase, phosphatidylinositol 3 kinase (PI3K), Shc protein, 14-3-3 protein and phospholipase C $\gamma$ 1 (PLC $\gamma$ 1). This work is focused on interaction between MT antigen and cellular proteins and on the impact of this interaction on cell transformation. Since MT antigen is a potent oncogene, the work also deals with the character of transformed cells and tumor development in mouse mammary epithelium.

**Keywords:** polyomaviruses, MT antigen, PP2A, PI3K, PLC $\gamma$ 1, Shc protein, 14-3-3 protein