

Abstract

Rous sarcoma virus (RSV) takes a place of honor among retroviruses. Research of RSV allows us to uncover the secret of the origin and evolution of life, the mechanisms of tumorigenesis and the interaction between viruses and their hosts. Viruses are not able to replicate themselves without host cells. They exploit a number of cellular pathways and factors and they can reprogram the cells to produce great amounts of viral progeny. They exert pressure on their host that leads to development of new types of cellular proteins, which then results in resistance of the cells.

This thesis focuses on the host factors involved in the RSV replication cycle. It summarizes the current knowledge about the replication cycle of retroviruses and the host factors that are necessary for productive infection: cellular receptors, endocytic and secretory pathways, nuclear transport, proteosynthesis, replication of proviruses and its stimulation. The restriction mechanisms of cells are also taken into account. The current knowledge about RSV is compared with facts on mammalian retroviruses and gaps in research are highlighted. The influence of the host cell factor absence, host specificity and cellular permissiveness are correlated and discussed.