Abstract

Due to their structure and ability to enter cells where they release their content, viral particles represent an attractive tool to deliver cargo to a cell. For therapeutic usage of viruses it is necessary to ensure the specific and highly efficient entry to target cells. This thesis offers an overview of methods used for virus retargeting with the intention to evaluate the success of retargeting in terms of specificity and efficiency of designed viral particles when entering a cell. On the basis of published data and considering the mechanisms of viral infection, the thesis demonstrates the difficulty to prevent the nonspecific viral particles from entering the cell and concludes that reaching total specificity is apparently impossible. Despite these small limitations, viral nanoparticles are a revolutionary therapeutic tool for delivering cargo to the cell and it is necessary to exploit their potential.