Abstract

Zika and Dengue viruses codes their own enzymes which helps them in different stages of the replication cycle. NS3 and NS5 proteins and their cofactors play an essential role in flaviviral life cycle. Although their structure was already solved, many aspects of their function remain unclear. The main subject of this bachelor thesis is the role of these proteins in flaviviral life cycle, polyprotein cleavage, replication and protein-protein interaction. These enzymes keep many particular enzymatic activities such as protease, helicase, methyltrasferase and polymerase. They are both structurally and functionally separated, which is interesting regarding autoactivation and protein-protein interaction. Since Zika and Dengue infections remain a serious health care issue, it is necessary to understand the molecular mechanisms behind their replication.

Keywords: protease, polymerase, Zika, Dengue, polyprotein processing, antiviral therapy