

Abstract

RNA dependent RNA polymerases synthesize RNA strand from RNA template. They can be divided into two large groups - viral (RdRp) and cellular (RDR) polymerases. Viral RdRp play a key role in the life cycle of RNA viruses, ensuring replication and transcription of their genome. The structure, which resembles the „right hand“, is similar to other types single-subunit polymerases. Large amounts of knowledge are available about the RdRp of RNA viruses with positive single strand RNA genome. This information then helps in the development of antiviral drugs targeting the RdRp. The second group consists of cellular RDR. These polymerases are found only in eukaryotes. Their active site is homologous to the active site of multisubunits DNA dependent RNA polymerases. RDR is involved in RNA silencing pathways.