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## Influenza virus – molecular biology

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### Abstrakt

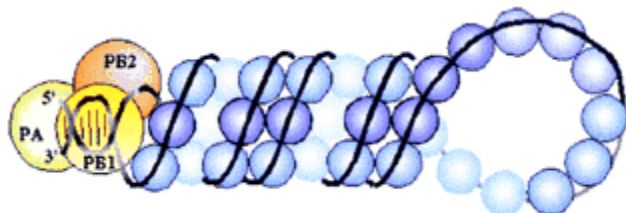
Nucleoprotein (NP) is generally a RNA binding protein. The primary function is to encapsidate the virus genome for RNA transcription, replication and packaging purposes. NP is not only a structural protein, but it also has the function like adapter in the interaction between virus and host cell.



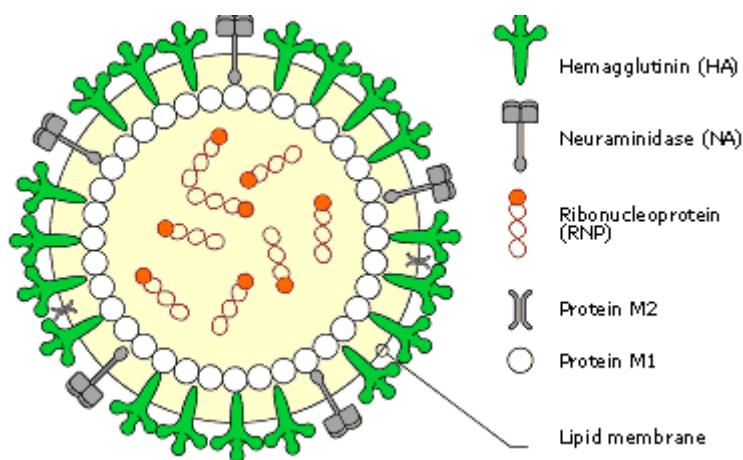
The influenza virus consists of a lipid envelope with three surface and membrane integrated proteins (HA, NA, M2), under the lipid envelope there is M1 protein (major structural protein) that connects the lipid membrane with RNP (ribonucleoprotein). RNP is composed of segmented genomic RNA, polymerase complex (PB1, PB2 and PA) and stoichiometric amounts of NP. Functional NP ring is composed of 9 NP monomers. Monomers interlock



system loop pocket. The flexible loop of one monomer fits in pocket of second NP ... until there is the ring formed by 9 NP monomers. NP (blue beads) interacts with PB2 and both the 5' and 3' end of each segment (ss vRNA marked in black).



The aim of the project was to find a dominant inhibitor of wild nucleoprotein (NP). Five NP mutants were designed with mutation which would result in change in the structure of the NP protein to the extent that would be impossible to assemble the NP ring (9 NP monomers), which is essential for viral transcription and replication. One NP mutant could inhibit the formation of the entire RNP.



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