

TRANSCRIPTION AND REPLICATION OF INFLUENZA VIRUS RNA



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Summary

The Influenza viruses are among the most dangerous human pathogens, since they have a wide animal reservoir and re-emerge continuously in the human population. They constitute a collection of highly variable pathogens that cause respiratory infections in man. Influenza type A viruses contain a segmented genome composed by 8 RNA molecules of negative

polarity. Each one replicates and transcribe independently as a ribonucleoprotein (RNP) in the nucleus of infected cells. Our long-term goal is to elucidate the structure of the influenza virus polymerase complex and the RNP to understand the mechanisms by which this molecular machine transcribe and replicate the virus genome. Essential for this aim will also be to unravel the interplay between the virus-encoded RNP and cellular factors involved in these processes, as well as in the post-transcriptional control of virus gene expression. Our group is addressing these objectives by a combination of experimental approaches including structural, molecular and cellular biology techniques.

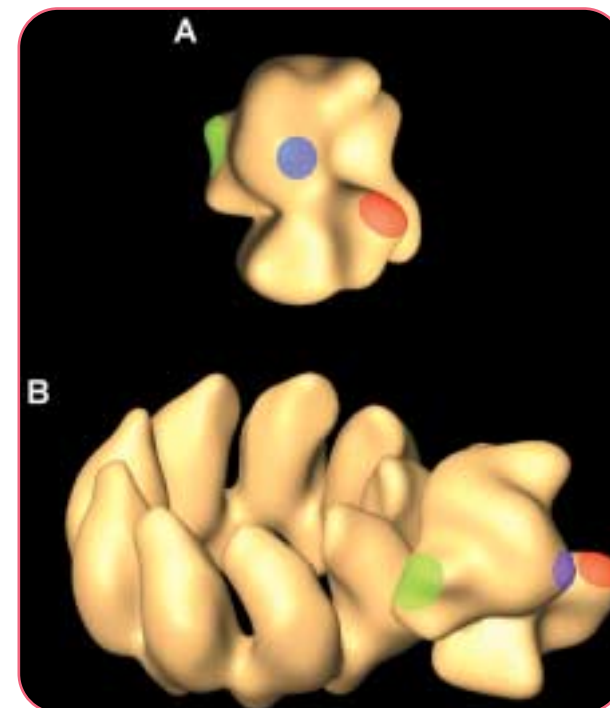


Figure 1. Three-dimensional structure of the influenza virus polymerase (A) and a recombinant mini-ribonucleoprotein with 9 nucleoprotein monomers (B). The coloured areas indicate the approximate localisation of the polymerase subunits: Red-PB2; Violet-PA; Green-PB1.

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