

OS01-2 Enzymatic mechanism of replication and transcription of the influenza virus genome

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The eight-segmented and negative-stranded RNA genome complexed with viral RNA-dependent RNA polymerases and nucleoprotein (NP) is the basic unit for replication and transcription of the viral RNA genome in the infected cell nucleus. We have been characterizing their molecular properties not only by biochemical and molecular biological methods but also at the basis of genetics and structure biology. Furthermore, we should consider the function of host factors in the context of host-specific pathogenesis. By dissection and reconstitution of established *cell-free* systems for replication and transcription and using a newly developed viral replicon system in yeast cells, we have identified RAF-1/Hsp90, RAF-2p48/NPI-5/UAF/BAT1, RAF-2p36, IREF-1/MCM complex, and IREF-2, and Tat-SF1 and Prp18, respectively. In addition, the study on the detailed mechanism of the intracellular transport of progeny vRNPs is ongoing. Since viral factors and the interface between viral and host factors are to be good drug targets, we will discuss the possibility for development of novel antiviral drugs based on our studies.