

ASSEMBLY OF Tat AND Rev COMPLEXES

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HIV Tat and Rev are essential viral regulatory proteins that are potential targets for antiretroviral therapies. Both proteins function by binding to specific RNA elements in the viral mRNA. Tat binds to TAR RNA and enhances transcription elongation while Rev binds to the Rev response element (RRE) and promotes the export of unspliced viral mRNAs. Our work on Tat currently centers on identifying and characterizing interacting partners of Tat and TAR, building transcription complexes for EM analyses, and understanding how post-translation modifications affect complex assembly. Recent studies of Rev have defined high-affinity oligomeric complexes with the RRE and have uncovered additional RNA-binding sites and new modes of recognition. These studies are being conducted partly through the HARC Center (HIV Accessory and Regulatory Complexes), which is comprised of principal investigators at UCSF and UC Berkeley and outside collaborators. The HARC Center aims to create a comprehensive structural picture of interactions between HIV and host proteins at early stages in the viral life cycle, focusing on the essential regulatory and accessory proteins: Int, Tat, Rev, Vif, and Nef.