A Novel Mechanism Employed by KSHV to Maintain the Latent Infection was Revealed

Kaposi's sarcoma (KS) is one of the most common malignant diseases among AIDS patients. KSHV which is the pathologic agent of KS could establish latent infection in host cells and could not be eradicated. The sero-prevalence of KSHV in general population is about 5%. It is important to reveal the mechanism of latent infection maintenance.

On November, 2009, the top virology journal "*Journal of Virology*" has published online research progress on cellular factors involved in KSHV latent infection. This research project was conducted by Ph. D candidate He Zhiheng, under supervision of Dr. Ke Lan, the Principal Investigator of Tumor Virology Unit of Institute Pasteur of Shanghai, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences.

Replication and transcription activator (RTA) encoded by ORF50 of Kaposi's sarcoma-associated herpesvirus (KSHV) is essential and sufficient to initiate lytic reactivation. In this study, researchers identified transducin-like enhancer of split 2 (TLE2) as a novel RTA binding protein by using yeast two hybrid screening of a human spleen cDNA library. This interaction recruited TLE2 to RTA bound to its recognition sites on DNA, and inhibited the induction of lytic replication and virion production driven by RTA. RBP-Jκhas been shown previously to bind to RTA, and this binding can be subject to competition by TLE2. In addition, TLE2 can form a complex with RTA to access the cognate DNA sequence of RRE (RTA responsive element) at different promoters.

In this study, researchers identified a new RTA binding protein, TLE2, and demonstrated that TLE2 inhibited replication and transactivation mediated by RTA. This provides another potentially important mechanism for maintenance of KSHV viral latency through interaction with a host protein.

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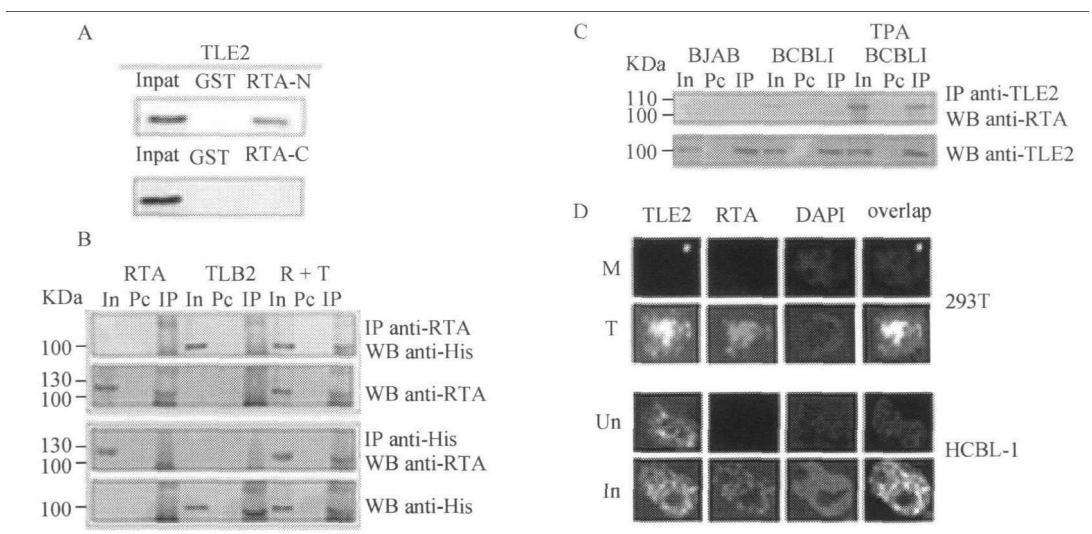

Figure GST binding assay, co-immunoprecipitation and immunofluorescence indicate that TLE2 interacts with RTA in vitro and in vivo