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## **Kaposi's sarcoma-associated herpesvirus microRNAs in viral life cycle and cellular transformation**

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The discovery of microRNAs (miRs) encoded by viruses indicates that these small non-coding RNAs play a role in their life cycle and associated diseases. Kaposi's sarcoma-associated herpesvirus (KSHV), an oncogenic virus associated with Kaposi's sarcoma (KS) and several other lymphoproliferative diseases, encodes 25 miRs derived from 12 pre-miRs. Recent works from our laboratory and others have shown that KSHV miRs promote viral latency, which is a strategy to evade host immune surveillance, by either directly targeting essential viral replication genes or upregulating specific cellular pathways such as NF- $\kappa$ B pathway to inhibit viral replication. Genetic dissection reveals that KSHV miRs are also required for KSHV-induced cellular transformation and tumor induction. Further genetic complementation has identified the specific miRs and the targeted cellular pathways that mediate KSHV cellular transformation and tumor formation. A systems biology approach was used to identify a number of specific targets, providing insight into the molecular mechanism mediates cellular transformation of these viral miRs, and implicating their potential use as therapeutic targets.

### **Biography**

Shou-Jiang (SJ) Gao is a HEB Distinguished Chair for Cancer Research and Professor at University of Texas Health Science Center at San Antonio. He has received his Ph.D. from University of Bordeaux, France in 1993, completed his Postdoctoral training at University of Massachusetts at Amherst, Massachusetts (1993-1994), and Columbia University in New York, New York (1994-1997). He is serving on the Editorial Boards for several peer-reviewed journals and as a reviewer for over 30 peer-reviewed journals in the area of Virology and Cancer Biology. He has published over 90 peer-reviewed papers as well as several reviews and book chapters.