



# Role of miRNAs in the Pathogenesis of Kaposi's Sarcoma: A Systematic Review

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## ABSTRACT

**Introduction:** Kaposi sarcoma (KS) is a cancer caused by the human herpesvirus 8. MiRNAs, one of the key elements of gene regulation at the post-transcriptional level, influence the process of cancer progression in KS by affecting related mRNAs. Abnormal gene regulation is among the most important factors in cancer incidence, diagnosis, and prognosis, as well as their potential for cancer treatment. In this study, we aimed to review the role of miRNAs in KS pathogenesis systematically.

**Search Strategy:** Based on the PRISMA guidelines, a systematic scientific search was executed using PubMed, Scopus, and Web of Science databases alongside the Google Scholar search engine for grey literature. Keywords such as "miRNA", "MicroRNA", and "Kaposi sarcoma" were utilized to conduct the search strategy. Inclusion criteria encompassed all cross-sectional studies investigating the fluctuations and changes of miRNA expression in KS. All Review and pre-clinical articles, conference papers, and editor letters were excluded. Two authors independently screened the search results, and the third author reviewed the conflicts. The quality of the included studies was assessed using the Newcastle-Ottawa scale tool, and information was organized into an extraction table.

**Results:** Primarily, 126 articles were found, and after excluding 22 duplicates and 112 irrelevant articles, 14 remained for full-text screening. Eventually, nine articles were included in the study. As a result, 169 miRNAs related to KS were found. These miRNAs played different roles in the KS pathogenesis, such as accelerating cell cycle, inducing tumor invasion, and, in some cases, inhibiting tumor progression.

**Conclusion and Discussion:** This systematic review revealed roles of miRNAs in the progression of KS. MiRNAs are used as different indexes and factors in distinct diseases. Abnormal expression of miRNAs can represent the existence of a disorder through their biomarker roles. Nevertheless, they can be used as a therapeutic target or cancer treatment, especially in KS. Due to the regulatory roles of miRNAs, they are qualified representative molecules for the detection and prognosis of cancers.

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