ABSTRACT

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Mechanisms and functions of long non-coding RNAs in glioma (Review).

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Glioma is one of the most common primary malignancies of the adult central nervous system with malignancy grades between I-IV. Among these four grades, glioblastoma is the most malignant and aggressive type of tumor and is characterized by a poor prognosis, high recurrence rate and short median survival time after initial diagnosis. Existing treatments, such as radiotherapy, chemotherapy and surgical resection, have poor therapeutic effects; therefore, it is necessary to discover novel targeted therapies to enhance the curative effect and improve prognosis. Recently, increasing evidence has shown that long non-coding RNAs (lncRNAs) participate in the vast majority of key physiological and pathological processes. Moreover, aberrant expression levels of lncRNAs are closely associated with the occurrence and development of glioma and other malignant phenotypes. The present review summarizes new insights into the functions and mechanisms of lncRNAs at the epigenetic, transcriptional and postâ€‘transcriptional levels, describes their ability to encode functional peptides in glioma and discusses their clinical potential as new biomarkers and prospective therapeutic targets.

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