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Targetable long non-coding RNAs in cancer treatments

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Abstract

Aberrant expression of many long non-coding RNAs has been observed in various types of cancer, implicating their crucial roles in tumorigenesis and cancer progression. Emerging knowledge with regard to the critical physiological and pathological roles of long non-coding RNAs in cancers makes them potential targets in cancer treatments. In this review, we present a summary of the relatively well studied long non-coding RNAs that are involved in oncogenesis and outline their functions and functional mechanisms. Recent findings that may be utilized in therapeutic intervention are also highlighted. With the fast development in nucleic acid-based therapeutic reagents that can target disease associated RNAs, lncRNAs should be explored as potential targets in cancer treatments.

Keywords: lncRNA, cancer, oncogenesis, therapeutics, dysregulation.

Highlights

. Dysregulation of long non-coding RNAs is common in cancers.

. Some long non-coding RNAs are known to play critical roles in specific types of cancers.

. It is highly possible and of great significance to develop cancer treatments targeting long non-coding RNAs.