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PII: S0344-0338(18)30712-X
DOI: https://doi.org/10.1016/j.prp.2018.08.014
Reference: PRP 52157

To appear in:

Received date: 8-6-2018
Revised date: 6-8-2018
Accepted date: 18-8-2018

Please cite this article as: Ji D, Zhong XY, Jiang X, Leng K, Yi X, Li Z, Huang L, Li J, Cui Y, The role of long non-coding RNA AFAP1-AS1 in human malignant tumors, *Pathology - Research and Practice* (2018), https://doi.org/10.1016/j.prp.2018.08.014

The role of long non-coding RNA AFAP1-AS1 in human malignant tumors

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Abstract

Objectives: Long non-coding RNAs (lncRNAs) are a type of endogenous RNA longer than 200 nucleotides in length, and this kind of RNAs lack or possess limited ability of coding proteins. A large number of studies have demonstrated that lncRNAs could take part in massive biological processes, such as transcriptional activation and interference, cellular differentiation, proliferation, migration, invasion and apoptosis. The abnormal expression of lncRNAs has been clarified to play extremely important roles in various diseases, especially in human cancers. LncRNA actin filament-associated protein 1 antisense RNA 1 (AFAP1-AS1) is a newly recognized cancer-related lncRNA deriving from the antisense strand of DNA at the AFAP1 coding gene locus. A slew of new studies suggest that AFAP1-AS1 is involved in many kinds of malignant tumors. Moreover, in recent years, the dysregulated expression of AFAP1-AS1 has been confirmed to be associated with oncogenesis and tumor progression. Evidence has increasingly shown that AFAP1-AS1 could probably serve as a novel potential molecular biomarker in tumor diagnosis and therapeutic target in tumor treatment (Table 1). In this review, we sum up present stage new hottest research issues in respect of the biological functions and molecular mechanisms of AFAP1-AS1 in occurrence and progression of human tumors.