



Letter to Editor

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HSF1: a main aim in treatment of cancers

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Abstract

HSF1 is a main regulator factor associated with several proteins especially HSPs. It is also a factor with important role in tumor severity, and can be a biomarker in the diagnostic investigations. This Letter discusses about role of HSF1 as a therapeutic aim in cancer.

Keywords: HSF1, Cancer, Therapeutic aim.

Dear Editor

HSF1 (Heat shock transcription factor 1) is a key regulator related to proteins of heat shock specially HSP90 and HSP70. This factor is highly overexpressed in tumors. It is also responsible for tumor severity, and can apply as a prognostic or diagnostic marker [1].

Metabolism regulation is another duty of HSF1. Signaling pathways including PI3K-AKT-mTOR, nuclear factor-kappaB (NF-κB) and protein kinase C (PKC) are also regulated by this factor. Also, microRNAs and long non-coding RNAs are controlled by it [1]. Generally, HSF1 has an important role in the cell migration, proliferation and anti-apoptosis in tumors. Thus, this factor can be a probable therapeutic goal for several cancers [2].

HSF1 role in colorectal and bladder cancers is investigated in this letter.

A therapeutic idea about colorectal cancer is related to the HSF1/LINC00857/ANXA11. Studies have showed that several enhancers have filled many gene loci in colorectal tumor. These super enhancers are vital for the transcription of genes in the cells. An investigation was performed about one of HSF1-related super enhancer, lncRNA-LINC00857, which applies its features in stimulating cell proliferation through regulation of metabolism of glutamine. HSF1 can increase the LINC00857 enhancer action by the augmentation of acetyltransferase (P300) to loci related to it, participating in transcription. LINC00857 collaborates with HSF1 to stimulate transcription of ANXA11. The ANXA11 knockout diminishes creation of colorectal cancer *in vivo* [3].

Poor prognosis in bladder cancer is related to severe lymphatic metastasis. Studies have investigated role of HSF1 in this metastasis process that this will help better treatment. The expression of HSF1 is related to cancer stage, status of metastasis and tumor grade. Vitally, HSF1 stimulates the initiation of cancer metastasis by increasing the transition of epithelial-mesenchymal of cells in tumor especially in the primary stages. Thus, HSF1 can be a potential aim in the therapeutic protocols for patients with bladder tumor that are in the lymphatic metastasis phase [4].

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