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SETD8 and lncRNA-ATB genes expression in cancer cell lines and stomach cancer tissues

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Background: Epithelial-to-mesenchymal transition (EMT) plays critical roles in different biological and pathological processes such as embryogenesis stem cell biology and cancer progression. EMT can be controlled by various signaling pathways and regulatory transcriptional networks. DNA methylation plays a vital role in the regulation of gene expression in cells. The histone lysine methyl-transferase, *SETD8* is over-expressed in different types of cancers and is involved in EMT process. TGF- β signaling stimulates metastasis by controlling the expression of downstream target genes. A TGF- β -induced long non-coding RNA (lncRNA), *lncRNA-ATB*, stimulates EMT through competitively binding to miR-200s and sequestering them away from their mRNA targets: *ZEB1* and *ZEB2*, thus promoting metastasis.

Aim: The aim of this study was to examine the expression of *SETD8* and *lncRNA-ATB* genes in various cultivated cells and gastric cancer tissues.

Methods: The human cell lines A542, SKBR3, MCF7, NT2, and HUVECs were cultured. Total RNA was extracted from cell lines and forty paired gastric cancer tissues. Then quantitative real-time RT-PCR was performed with specific primers for *SETD8* and *lncRNA-ATB* genes as well as GUSB gene (as an internal control).

Results: Our results showed that all tested cells have *lncRNA-ATB* and *SETD8* expressions with the A542 and HUVECs cells having the highest level of expression for *lncRNA-ATB* and *SETD8*, respectively. LncRNA-ATB and *SETD8* gene expression analysis in paired gastric cancer tissues is under study.

Conclusion: These results suggest that IncRNA-ATB and *SETD8* expressions are modulated during cancer. The elucidation of the precise molecular mechanisms governed by these gene expressions needs further investigation.

Biography

Nooshin Nourbakhsh has completed her BSc in Laboratorial Science from Shahid Sadoghi University of Yazd and at present she is a student in MSc in Isfahan University of Medical Sciences, Iran.

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