Evaluating the expression of long non coding RNA "linc-ROR" involved in pluripotency in AGS human Gastric cancer cell line

Farhangian P, Jahandoost S, Khalili M.*

Department of Medical Genetic and Molecular Medicine, Faculty of Medicine, Zanjan University of Medical Sciences, Zanjan, Iran

*E-mail Address: m.khalili@zums.ac.ir

Abstract

Introduction: Gastric cancer is the second reason of cancer-related death in the world with particularly high prevalence in East Asia. Based on cancer stem cells (CSCs), malfunction of signaling pathways that are essential for normal growth and development also involved in the tumor initiation and progression. Recently, the function of Long Non-coding RNAs (lncRNAs) as tumor suppressors or oncogene have appeared in prevalent cancer types, such as gastric cancer. LincRNA-ROR plays a key role in the survival and maintenance of iPSC and ESCs and contributes to the tumorigenesis. In this project, we aimed to evaluate the expression level of lincRNA-ROR in human gastric cancer cell line (AGS) compared to breast (MBA-MD468) cancer cell line, conjunctiva derived mesenchymal stem cells (Conj, by Dr Nadri) and also human embryonal carcinoma cell line (NT2).

Methods: Cell lines were cultured in the RPMI1640 (NT2, Conj and AGS) or DMEM (MBA-MD468). Total RNA was extracted using TRIZOL reagent (invitrogene). cDNA synthesis was performed by PrimeScript™ 1st strand cDNA Synthesis Kit (TAKARA) and real time PCR was performed by using TaqMan master mix (TAKARA) on Step one Plus™ instrument (ABI).

Results: Despite of reports indicating the high expression of lincROR in some cancers, our results showed no expression for Linc-ROR in AGS, MBA-MD468 cancer cell lines and also mesenchymal stem cells. But NT2 embryonal carcinoma cell line showed very high expression of Linc-ROR compared to AGS and MBA-MD468.

Conclusion: According to our results, it seems that the expression of Linc-ROR is limited to embryonic cell lines such as NT2 and hasn't remarkable expression in gastric cell line.

Key words: long non coding RNA, Linc-ROR, gastric cancer