**Presentation title:** The use of keratin-7 antisense represents a novel and highly effective strategy to suppress tumorigenesis and promote apoptosis in cases of breast cancer.

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**Abstract**

Expression of the keratin-7 (KRT7) is upregulated in breast cancer, and has been shown to correlate with cancer’s poor prognosis; however, the precise mechanisms underlying its involvement in tumorigenesis and apoptosis are largely unexplored. In the present study, by using specific oligonucleotide antisense against KRT7, in combination with KRT7-AS overexpression, we investigated the in vitro effects of the knockdown of KRT7 on tumorigenesis and apoptosis of breast cancer cell lines. According to the results, antisense targeting KRT7 exerted a dose-dependent inhibitory effect on the viability of MDA-MB-468 and MCF-7 cell lines, whereas no cytotoxic effect was observed in normal cells. Our results suggest that KRT7 plays a significant role in directed migration, invasion, and proliferation during tumor growth, leading us to interpret that KRT7 is a metastasis-associated protein and has regulatory activity in EMT and subsequent cancer metastasis. In addition, our cellular studies showed that this approach resulted in a remarkable decrease in mammosphere formation (37% in mammosphere’s number and 25% in size; in comparison to the control group of MDA-MB-468 and MCF-7 cells), as well as a decrease in cancer cells migration and an increase in cancer cell apoptosis (48% and 45%, respectively). Altogether, our findings have effectively established the involvement of KRT7 in the advancement of breast cancer through its regulation of the post-transcriptional sense mRNA.

**Biography (150-200 words):**

M. Rahmati is currently an Assistant Professor at the Guilan University of Medical Sciences, Rasht, IRAN. Dr. M. Rahmati received his PhD degree in Medical Biotechnology from Zanjan Medical University - Iran. Dr. M. Rahmati published a number of papers in several preferred Journals, and presented academic as well as research-based papers at preferred conferences. His areas of interests are targeting of tumorigenesis-related pathways in order to diagnosis and treatment, cancer targeted therapy, and antisense therapy.