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miR-96 promotes the growth of prostate carcinoma cells by suppressing MTSS1

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Prostate carcinoma (PC) is one of the most common cancers for males. Our data reinforced the finding that the level of miR-96 was higher in PC samples and cell lines than in non-cancerous tissues and normal prostate epithelial cells. In addition, serum miR-96 abundance was also found to be elevated in PC patients. Decreasing miR-96 expression was able to suppress the proliferation, clonogenicity and invasion of PC cells. Overexpressing miR-96 led to increased proliferation and colony formation of normal prostate epithelial cells. miR-96 level was found to be inversely associated with the abundance of metastasis suppressor protein 1 (MTSS1) messenger RNA, which has been proved to be a tumor suppressor for PC. The changes in miR-96 expression can affect the levels of MTSS1 both at mRNA and protein levels. miR-96 also suppressed the activity of luciferase reporter under the regulation of 3'UTR of MTSS1. Further studies showed that MTSS1 restoration accounted for the effect of miR-96 reduction on PC cells. The overexpression of a recombinant MTSS1 resistant against miRNA regulation was also demonstrated to abolish the transforming effect of miR-96 on prostate epithelial cells. Taken together, we found that miR-96 has a higher abundance in serum samples of PC patients than healthy controls, implying that it may be used as a prognostic marker. MTSS1 is a new authentic target of miR-96 in PC. The above findings suggested that targeting miR-96 may be a promising strategy for PC treatment.

Biography

Ling Zhang has completed her PhD from Jilin University and Post-doctoral studies from Cold Spring Harbor Laboratory. She is a Professor at Jilin University. She has published more than 70 papers in reputed journals.

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