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Oncogenic Functions of Long Non-Coding RNA XIST in Human Nasopharyngeal Carcinoma by Targeting MiR-34a-5p

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Abstract : Long non-coding RNA (lncRNA) X inactivate-specific transcript (XIST) has been verified as an oncogenic gene in several human malignant tumors, and its dysregulation was closed associated with tumor initiation, development and progression. Nevertheless, whether the aberrant expression of XIST in human nasopharyngeal carcinoma (NPC) is corrected with malignancy, metastasis or prognosis has not been elaborated. Here, we discovered that XIST was up-regulated in NPC tissues and higher expression of XIST contributed to a markedly poorer survival time. In addition, multivariate analysis demonstrated XIST was an independent risk factor for prognosis. XIST over-expression enhanced, while XIST silencing hampered the cell growth in NPC. Additionally, mechanistic analysis revealed that XIST up-regulated the expression of miR-34a-5p targeted gene E2F3 through acting as a competitive 'sponge' of miR-34a-5p. Taking all into account, we concluded that XIST functioned as an oncogene in NPC through up-regulating E2F3 in part through 'spongeing' miR-34a-5p.

Keywords : X inactivate-specific transcript; hsa-miRNA-34a-5p, miR-34a-5p; E2F3, nasopharyngeal carcinoma, tumorigenesis
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