



FOXO1 is a tumor suppressor in cervical cancer

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ABSTRACT. Forkhead box protein O1 (FOXO1) is an important transcriptional regulator of cell proliferation, and is considered essential for tumor growth and progression. However, the function of FOXO1 in human cervical cancer remains unclear. In this study, we investigated the role of FOXO1 in cervical cancer. Our results showed that FOXO1 expression was lower in cervical cancer than in cervical intraepithelial neoplasia and normal cervix by immunohistochemical analysis ($P < 0.05$). The level of FOXO1 in high-grade lesions was significantly lower than in low-grade lesion ($P < 0.05$), indicating that deficient expression of FOXO1 is involved in tumor progression and significantly associated with late-stage tumors ($P < 0.05$), which was further supported by clinicopathological, real-time polymerase chain reaction, and Western blotting analysis. Moreover, we confirmed that the overexpression of FOXO1 remarkably repressed cell growth and blocked cell proliferation, accompanied by cell-cycle arrest in the G₂/M phase and upregulation of caspases-3 and -9 gene expression. Collectively, our data suggest that FOXO1 plays a vital role in inhibiting cervical cancer development by inducing cell-cycle arrest

and apoptosis. FOXO1 expression is a favorable prognostic factor for human cervical cancer.

Key words: Cell apoptosis; Cell proliferation; Cervical cancer; Cell cycle; Forkhead box protein 01; Immunohistochemistry