Effects of siRNA-mediated silencing of Sal-like 4 expression on proliferation and apoptosis of prostate cancer C4-2 cells

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ABSTRACT. The aim of this study was to evaluate the effects of small interfering RNA (siRNA)-inhibited expression of the Sal-like 4 (SALL4) gene on the proliferation, colony formation, and apoptosis of prostate cancer C4-2 cells. C4-2 cells were cultured and divided into a si-SALL4 group, a negative control siRNA group, and a blank control group. SALL4 mRNA levels and protein expression were detected by real-time polymerase chain reaction and western blot, respectively. Changes in the cell proliferation and colony formation capacities were observed by using the MTS colorimetric method and colony formation assay, respectively. The influence of SALL4 on apoptosis was assessed with flow cytometry, and the expression of apoptosis-related proteins B-cell lymphoma 2 (Bcl-2) and bcl-like-protein 4 (Bax) were detected by western blot. The si-SALL4 group had significantly lower mRNA and protein levels of SALL4 as well as decreased proliferation and colony formation capacities than the negative control group (P < 0.05). There were significantly more apoptotic cells in the si-SALL4 group compared to the negative control (P < 0.05), and the expression of Bcl-2 and Bax decreased and increased, respectively, after treatment with
si-SALL4. Silencing SALL4 expression by using siRNA technology inhibited the proliferation and colony formation of C4-2 cells, and promoted apoptosis likely mediated by Bcl-2 and Bax expression. These results provide experimental basis for further elucidating the role of SALL4 in prostate cancer cells.

**Key words:** Small interfering RNA; Sal-like 4; Prostate cancer; Gene silencing