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Effect of siRNA targeting *EZH2* on cell viability and apoptosis of bladder cancer T24 cells

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ABSTRACT. We investigated the effect of siRNA targeting enhancer of EZH2 on cell proliferation, invasion, migration, and apoptosis of human bladder cancer T24 cells. An siRNA-expressing plasmid targeting the *EZH2* gene was transfected into T24 cells. Quantitative polymerase chain reaction and Western blot analysis were used to detect EZH2 expression at the mRNA and protein levels, respectively. Proliferation, invasion, and migration of T24 cells were examined *in vivo* using MTT, wound healing, and transwell chamber migration assays, respectively. Annexin V-fluorescein isothiocyanate/propidium iodide flow cytometric analysis was performed to determine cell apoptosis levels. Expression of EZH2 in T24 cells was suppressed at the mRNA and protein levels. Following transfection for 48 h, growth was inhibited by 37.9%, which was markedly lower than that in the negative control group ($P < 0.05$). Following a wound-healing assay for 24 h, transfected cell migration distance was 1.37 ± 0.12, which was

markedly less than the horizontal migration distance of negative control group cells ($P < 0.01$). In addition, the cell invasion ability of EZH2-siRNA group cells decreased by 67% compared with negative control group cells ($P < 0.01$). Following transfection for 48 h, early- and late-stage apoptosis rates for T24 cells were 22.8 and 3.60%, respectively, which were higher than in the negative control group ($P < 0.01$). *EZH2* gene silencing effectively suppressed the proliferation, invasion, and migration abilities of human bladder cancer cells, promoting apoptosis.

Key words: Apoptosis; Bladder cancer; Enhancer of zeste homolog 2; biological behavior; siRNA

