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5-Azacytidine suppresses the proliferation of pancreatic cancer cells by inhibiting the Wnt/β-catenin signaling pathway

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ABSTRACT. 5-Azacytidine has been shown to be an effective anti-pancreatic cancer drug, but the mechanism remains unknown. In the current study, we explored the effect of 5-azacytidine on abnormal activation of the Wnt-β-catenin signaling pathway in pancreatic cancer cells. The human pancreatic cancer cell line Bxpc-3 was treated with different concentrations of 5-azacytidine for various times. The proliferation and early apoptosis of the cells were evaluated using the CCK8 method and flow cytometry, respectively. mRNA and protein expression of β-catenin, c-myc, and cyclinD1 were detected using real-time fluorescent quantitative polymerase chain reaction and Western blot analysis, respectively. The proliferation of Bxpc-3 cells was suppressed by 5-azacytidine. The early apoptosis of the cells was significantly enhanced over time and with increasing drug concentrations. The expression of β-catenin, c-myc, and cyclinD1 were down-regulated, showing significant differences between different concentrations and

treatment times ($P < 0.05$). 5-Azacytidine suppressed the proliferation of pancreatic cancer cells by inhibiting the Wnt/β-catenin signaling pathway, particularly the expression of β-catenin, c-myc, and cyclinD1. This study may provide a new potential strategy for diagnosing and treating pancreatic cancer.

Key words: 5-Azacytidine; c-Myc; CyclinD1; Pancreatic cancer; Wnt/β-catenin

