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Proteomic analysis of susceptibility in intestinal stromal tumors

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ABSTRACT. We analyzed the susceptibility of intestinal stromal tumors using cell culture and proteomics. Human SGC7901 gastric cells were selected and divided into a blank control group (untransfected SGC7901 cells), a negative control group [SGC7901 cells transfected with negative interference control-small interfering RNA (siRNA)], and a COOH-terminus tensin-like molecule (CTEN)-siRNA-1 group (SGC7901 cells transfected with CTEN-siRNA-1). The cells were successfully transfected and subjected to analyses of cell proliferation, cell cycle, cell invasion, CTEN expression, and proteomics. The percentages of cells in the G0/G1, S, and G2/M phases were similar in the three groups ($P > 0.05$), and the OD values were also similar at 24, 48, and 72 h ($P > 0.05$). Compared with the levels in the blank and negative control groups, CTEN protein in the CTEN-siRNA-1 group decreased by 66 and 65%, respectively, and significantly fewer cells in the CTEN-siRNA-1 group were capable of invasion ($P < 0.05$). Proteomic analysis showed that in the CTEN-siRNA-1 group, 283 proteins were upregulated and 242 were downregulated; from these, the expression levels of E-cadherin and ERK proteins changed

significantly. Silencing the expression of CTEN in intestinal stromal tumor cells reduces their invasion capability. Moreover, silencing CTEN at different stages can also regulate the expression levels of E-cadherin and ERK proteins.

Key words: Proteomics; Intestinal stromal tumor; Susceptibility; CTEN

