

## Cell cycle-specific effects of tumor necrosis factor on human gastric cancer cell line

Gang Huang, Sheng-Ben Zhang, Zhong-Qiong Cai, Liang Chen

Gang Huang, Department of General Surgery, Guangdong Provincial Corps Hospital, Chinese People's Armed Police Forces, Guangzhou 510507, Guangdong Province, China

Sheng-Ben Zhang, Department of General Surgery, Daping Hospital, Third Military Medical University, Chongqing 410042, China

Zhong-Qiong Cai, Department of Obstetrics and Gynecology, Guangdong Provincial Corps Hospital, Chinese People's Armed Police Forces, Guangzhou 510507, Guangdong Province, China

Liang Chen, Department of Obstetrics and Gynecology, Deyang County Hospital, Deyang 618000, Sichuan Province, China

Author contributions: All authors contributed equally to the work.

Correspondence to: Dr. Gang Huang, Department of General Surgery, Guangdong Provincial Corps Hospital, Chinese People's Armed Police Forces, Guangzhou 510507, Guangdong Province, China

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### Abstract

**AIM:** To study the effects of tumor necrosis factor (TNF) on

proliferation cycle of human gastric cancer cell.

**METHODS:** Exponentially dividing cells were collected. Cells were treated with TNF at 234 U/mL, harvested at every 24 h up to the 96 h, stained with propidium iodide, and analyzed for cell cycle distribution by flow cytometry. Percentages of cells in the different cell cycle phase were calculated.

**RESULTS:** The proliferation index (PI) of SGC-7901 dropped from 19.8% to 5.6% in 72 h ( $P < 0.01$ ). When SGC-7901 cells were exposed to TNF for 72 h, the proportion of G-2M DNA content increased from 6.5% to 49.8% ( $P < 0.01$ ). However, the proportion of G<sub>0</sub>, G<sub>1</sub> and S phase DNA contents decreased from 73.7% to 44.6% ( $P < 0.01$ ) and 19.8% to 5.6% ( $P < 0.01$ ). The effects of TNF reduced 72 h later.

**CONCLUSION:** TNF can inhibit SGC-7901 cell proliferation and arrest cells in G-2M. The peak period is 72 h.

**Key words:** Stomach neoplasms; Tumor necrosis factor; Cell cycle; Flow cytometry

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