

Regulation of telomerase activity by recombinant human tumor necrosis factor *in vitro*

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Abstract

AIM: To investigate the effect of recombinant human tumor necrosis factor (rhTNF) on telomerase activity in hepatoma cell line HepG2 and HepG1-6.

METHODS: TRAP-ELISA method was used to determine the

telomerase activity in HepG2 and HepG1-6 cells which were treated by different concentrations of rhTNF. In addition, the TERTLuc (800) plasmid was transiently transfected, which was inserted 800 bp of the human telomerase reverse transcriptase (hTERT) promoter, into HepG2 cells by Lipofect. Different concentrations of rhTNF were added into the culture media 2 h later, and the activity of the hTERT promoter was detected 48 h after transfection.

RESULTS: The telomerase activity of HepG2 was suppressed by rhTNF in a dose-dependent manner. The results also revealed that the activity of hTERT promoter was inhibited linearly with rhTNF at the dose of 10-1000 IU/mL.

CONCLUSION: Inhibition of the hTERT promoter expression by rhTNF may contribute to its anti-tumor activity.

Key words: Tumor necrosis factor; Telomerase activity; Liposomes; Transfection; Liver neoplasms; *In vitro*

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