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解放军第85医院 药剂科, 上海 200235;第二军医大学 长征医院 器官移植科, 上海 200003;第二军医大学 长征医院 器官移植科, 上海 200003;第二军医大学 长征医院 器官移植科, 上海 200003;第二军医大学 长征医院 器官移植科, 上海 200003;第二军医大学 长征医院 器官移植科, 上海 200003;第二军医大学 长征医院 器官移植科, 上海 200003

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摘要:

目的: 研究雷公藤内酯醇 (triptolide, TP) 对人肝癌SMMC-7721细胞增殖的影响以及对 P53 基因的去甲基化作用。方法: MTT法检测TP对SMMC-7721细胞增殖的影响, 甲基特异性PCR检测TP对SMMC-7721细胞 P53 基因甲基化的影响, RT-PCR检测SMMC-7721细胞甲基转移酶 DNMT1、DNMT3a、DNMT3b mRNA的表达, Western blotting检测SMMC-7721细胞中P53蛋白的表达。结果: TP剂量依赖性抑制SMMC-7721细胞的增殖 ($P < 0.05$), 40 ng/ml时的抑制率达 (73.5±3.02)%, 其半数抑制浓度 (IC₅₀) 约为20 ng/ml。TP显著抑制SMMC-7721细胞中 DNMT1、DNMT3a、DNMT3b mRNA的表达 ($P < 0.05$, $P < 0.01$); TP作用后 P53 基因的高甲基化被逆转, 并呈剂量依赖性; TP可显著增强SMMC-7721细胞中P53蛋白的表达。结论: TP可通过抑制甲基转移酶使 P53 基因去甲基化, 促进P53蛋白的表达, 从而抑制SMMC-7721细胞的增殖。

关键词: [雷公藤内酯醇](#) [P53 基因](#) [甲基化](#) [SMMC-7721细胞](#) [甲基转移酶](#)

Triptolide down-regulates P53 gene methylation and inhibits proliferation of hepatocarcinoma SMMC-7721 cells [Download Fulltext](#)

[WU Ying](#) [LIU Fang](#) [GUO Wen-yuan](#) [XIAO Liang](#) [YANG Jie-yu](#) [XIE Jiang-ping](#) [DING Guo-shan](#)

Department of Pharmacy, No. 85 Hospital of PLA, Shanghai 200235; Organ Transplantation Center, Changzhang Hospital, Second Military Medical University, Shanghai 200003, China; Organ Transplantation Center, Changzhang Hospital, Second Military Medical University, Shanghai 200003, China; Organ Transplantation Center, Changzhang Hospital, Second Military Medical University, Shanghai 200003, China; Organ Transplantation Center, Changzhang Hospital, Second Military Medical University, Shanghai 200003, China; Organ Transplantation Center, Changzhang Hospital, Second Military Medical University, Shanghai 200003, China; Organ Transplantation Center, Changzhang Hospital, Second Military Medical University, Shanghai 200003, China

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Abstract:

Objective: To study the effect of triptolide (TP) on the proliferation of hepatocarcinoma SMMC-7721 cells and its effect on demethylation of P53 gene. Methods: The effect of TP on proliferation of SMMC-7721 cells was measured by MTT method, the effect of TP on P53 gene methylation in SMMC-7721 cells was analyzed by methylation specific PCR, the expressions of methyltransferase DNMT1, DNMT3a and DNMT3b mRNA in SMMC-7721 cells were measured by RT-PCR, and the protein expression of P53 in SMMC-7721 cells was detected by Western blotting assay. Results: TP inhibited the proliferation of SMMC-7721 cells in a dose-dependent manner ($P < 0.05$), with the inhibitory rate being (73.5±3.02)% at 40 ng/ml TP, and IC₅₀ of TP was 20 ng/ml. TP significantly inhibited DNMT1, DNMT3a, and DNMT3b mRNA expressions in SMMC-7721 cells ($P < 0.05$, $P < 0.01$), and dose-dependently reversed the hypermethylation of P53 gene and enhanced P53 protein expression in SMMC-7721 cells. Conclusion: TP can inhibit the proliferation of SMMC-7721 cells through the inhibiting methyltransferase expression, which augment the demethylation of P53 gene and results in the increased expression of P53 protein.

Keywords: [triptolide](#) [P53 gene](#) [methylation](#) [SMMC-7721 cell](#) [methyltransferase](#)

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