

论文

丁酸钠对HT-29结肠癌细胞增殖及ICAM-1表达的影响

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摘要:

目的 观察丁酸钠对HT-29结肠癌细胞株增殖的影响, 并检测丁酸钠对HT-29细胞表面ICAM-1表达的影响, 探讨丁酸钠影响结肠癌增殖的作用机制。方法 使用MTT法观察丁酸钠对HT-29细胞增殖活力的效应; 利用流式细胞术检测丁酸钠对HT-29细胞周期分布、细胞凋亡以及细胞表面ICAM-1的表达。结果 丁酸钠能够明显抑制HT-29细胞的增殖, 提高G0/G1细胞比例, 降低S期细胞比例和增殖指数, 并诱导HT-29细胞凋亡, 且这些作用呈现明显的浓度和时间依赖性。同时, 丁酸钠还能够显著下调HT-29细胞表面ICAM-1的相对表达量。结论 丁酸钠具有抑制HT-29结肠癌细胞增殖的作用, 其机制可能与阻遏细胞周期、诱导细胞凋亡及下调HT-29细胞表面ICAM-1的表达有关。

关键词: 丁酸钠; HT-29; 结肠癌; 细胞间黏附分子

Effects of sodium butyrate on cell proliferation and expression of ICAM-1 in the HT-29 colon cancer cell line

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Abstract:

Objective To investigate the effects of sodium butyrate on HT-29 colon cancer cell proliferation and expression of intercellular adhesion molecule 1 (ICAM-1) on the cell surface, and to explore the mechanism by which sodium butyrate affects growth of HT-29 cells. Methods Effect of sodium butyrate on the proliferation of HT-29 cells was detected by MTT [1-(4,5-Dimethylthiazol-2-yl)-3,5-diphenylformazan] assay. The cell cycle, cell apoptosis and expression of ICAM-1 induced by sodium butyrate were measured by flow cytometry. Results In a time-and dose-dependent manner, sodium butyrate significantly inhibited the growth of HT-29 cells, increased the proportion of G0/G1 cells and the proliferation index, decreased the proportion of S phase cells, and induced cell apoptosis. Also, sodium butyrate down-regulated expression of ICAM-1. Conclusion Sodium butyrate can inhibit the proliferation of HT-29 cells. The mechanism may relate to arresting the cell cycle, inducing cell apoptosis and down-regulating expression of ICAM-1 on HT-29 cells.

Keywords: Sodium butyrate; HT-29; Colon cancer; Intercellular adhesion molecule 1

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