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# 人参皂甙Rg3抑制人结肠癌细胞生长与Wnt/β-cater





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**Title:** Ginsenoside Rg3 exerts anti-proliferation effect on human colon cancer cells *via* Wnt/β-catenin signaling pathway

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关键词: 人参皂甙Rg3; 结肠癌细胞; 增殖抑制; β-catenin; 核转移

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摘要: 目的 研究人参皂甙Rg3对结肠癌细胞的增殖抑制作用与Wnt/β-catenin信号转导的关系。 方法 将结肠癌细胞分为对照组和用不同浓度Rg3处理组。采用结晶紫染色法及集落形成实验检测Rg3对HCT116细胞增殖的抑制作用。利用荧光素酶报告质粒检测Rg3对HCT116细胞中β-catenin/Tcf4转录活性的影响。采用Western blot法检测β-catenin 及c-Myc蛋白表达；利用免疫荧光检测Rg3对结肠细胞SW480中β-catenin核转移的抑制作用。 结果 Rg3在60 μmol/L 时就能明显抑制细胞增殖（$P<0.05$），集落形成实验结果呈现相同的变化趋势。荧光素酶报告质粒检测结果显示，Rg3在25 μmol/L时就能明显降低HCT116细胞中β-catenin/Tcf4的转录活性（$P<0.05$），并降低c-Myc蛋白表达，但对β-catenin蛋白表达无明显影响。免疫荧光检测结果显示，Rg3能明显抑制SW480细胞中β-catenin的核转移。 结论 Rg3能抑制人结肠癌细胞增殖，其机制可能与Rg3抑制β-catenin 的核转移，进而抑制Wnt/β-catenin信号转导有关。

Abstract: Objective To investigate the relationship between the anti-proliferation effect of ginsenoside Rg3 on colon cancer cells and Wnt/β-catenin signaling pathway. Methods Colon cancer cell line HCT116 were treated with different concentrations of ginsenoside Rg3, and the cells treated with DMSO were served as solvent control. Crystal violet staining and colony formation assay

were applied to detect the anti-proliferation effect of ginsenoside Rg3 on HCT116 cells. Luciferase reporter assay was used to measure the transcriptional activity of β-catenin/Tcf4 in HCT116 cells. The protein expression levels of β-catenin and c-Myc were detected by Western blotting. Immunofluorescent assay was used to observe the effect of ginsenoside Rg3 on nuclear translocation of β-catenin in SW480 cells. Results Ginsenoside Rg3 could inhibit the proliferation of HCT116 cells at the concentration of 60 μmol/L (*vs* control, *P*<0.05), and this result was confirmed by colony formation assay in HCT116 cells. The transcriptional activity of β-catenin/Tcf4 in HCT116 cells was inhibited by ginsenoside Rg3 at the concentration of 25 μmol/L (*vs* control, *P*<0.05). The protein expression of c-Myc was down-regulated by ginsenoside Rg3, which had no obvious effect on the protein expression of β-catenin in HCT116 cells. The nuclear translocation of β-catenin was blocked by ginsenoside Rg3 in SW480 cells. Conclusion Ginsenoside Rg3 can inhibit the proliferation of colon cancer cells through inhibiting Wnt/β-catenin signal transduction by blocking the nuclear translocation of β-catenin.

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