

论文

毛茛甙体外细胞毒活性及其机制

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摘要:

研究表明,毛茛甙对KB细胞、Bel₇₄₀₂细胞的IC₅₀分别为0.21和0.35 μmol/L;对细胞大分子物质的生物合成以抑制DNA合成最强(IC₅₀=0.35μmol/L)。作用机制研究表明,至少有两种机制参与毛茛甙的体外细胞毒作用:抑制DNA聚合酶作用下的DNA合成;促进超氧阴离子自由基的生成。

关键词: 毛茛甙 抗肿瘤作用

THE CYTOTOXICITY AND ACTION MECHANISM OF RANUNCULIN *IN VITRO*

RZ Li and XJ Ji

Abstract:

This paper describes the cytotoxicity of ranunculin(RAN) and its mechanism of action. The IC₅₀ of RAN against the KB and Bel₇₄₀₂ cells in colony test were found to be 0. 21 and 0. 35μmol/L respectively.

RAN inhibited the incorporation of ³H-labeled precursors into DNA and RNA of L₁₂₁₀ cells. RAN (15 μmol/L) markedly decreased DNA synthesis catalyzed by DNA ploymerase I and promoted the generation of superoxide anions in DMSO/KO₂ system. In the meantime, SOD and CAT were shown to partly revoke the inhibitory effects of RAN upon the incorporation of ³H-TdR into DNA. No direct reaction between RAN and DNA template was observed and no effect of RAN on DNA TOPO II or RNA polymerase Was found. Our results suggest that the cytotoxicity of RAN *in vitro* may be due to inhibition of DNA polymerase and increase of oxygen free radicals.

Keywords: Antitumor activity Ranunculin

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