

银杏叶聚戊烯醇同系物体外抑制乳腺癌MCF-7细胞株增殖作用及机制研究

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作者	单位
丁香	中国人民解放军第一八一医院药剂科, 广西 桂林 541002
黄小芳	中国人民解放军第一八一医院药剂科, 广西 桂林 541002
张应辉	中国人民解放军第一八一医院药剂科, 广西 桂林 541002

E-mail
1135038142@qq.com

中文摘要:目的:研究银杏叶聚戊烯醇同系物体外抑制MCF-7细胞增殖的作用并初步探讨作用机制。方法:经制备反相高效液(RT-HPLC)获得银杏叶聚戊烯醇同系物,MTT法检测其对MCF-7细胞增殖的影响,选取抑制细胞增殖作用强的同系物P3,用流式细胞仪检测5,10,20mg·L⁻¹P3对MCF-7细胞周期、细胞凋亡的影响。结果:经提取分离获得10个银杏叶聚戊烯醇同系物,依次命名为P1,P2,P3……P10,其中P3对MCF-7细胞株增殖的抑制作用最强,IC₅₀为10.32mg·L⁻¹,其作用机制低浓度时以阻滞细胞周期于G₂/M期为主,高浓度可诱导凋亡。结论:银杏叶聚戊烯醇同系物P3为银杏叶提取物抑制MCF-7增殖的活性成分,其作用机制与阻滞细胞周期,诱导细胞凋亡有关。

中文关键词:[银杏叶](#) [聚戊烯醇同系物](#) [制备RT-HPLC](#) [MCF-7](#) [细胞周期](#)

Growth-inhibiting Effect and its Molecular Mechanism of Polyphenols from *Ginkgo biloba* on Breast Cancer Cells MCF-7 *in vitro*

Abstract:Objective:To study the growth-inhibiting effect of polyphenols from *Ginkgo biloba* on breast cancer cells MCF-7 *in vitro* and the related molecular mechanism. **Method:**Polyphenols were extracted by preparative Reversed-phase high-performance liquid chromatography(RP-HPLC). The growth-inhibiting effect of polyphenols from *Ginkgo biloba* on breast cancer cells MCF-7 was evaluated *in vitro*. The polyphenols with best antiproliferative effect was screened and figured out. The influence of polyphenol P3 (5,10,20 mg·L⁻¹) on mitotic cycle and apoptosis of MCF-7 cells was analyzed with flow cytometry. **Result:**Ten polyphenol monomers were obtained by preparative RP-HPLC, and were orderly named P1, P2, P3……P10.The best effective growth-inhibiting on MCF-7 cells was P3 with IC₅₀ of 10.32 mg·L⁻¹. At low concentration,its mechanism appeared to be delaying on G₂/M of mitotic cycle, and at high concentration to be inducing cell apoptosis. **Conclusion:**Polyphenol P3 from *Ginkgo biloba* could inhibit growth of breast cancer MCF-7 cells *in vitro*. Its molecular mechanism is linked with delaying on mitotic phase (G₂/M) and inducing cell apoptosis.


keywords:[Ginkgo biloba leaves](#) [polyphenols](#) [RP-HPLC](#) [MCF-7 cells](#) [mitotic cycle](#).

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