

论文

植物花色苷对血小板凋亡通路中BCL2家族影响

陈礼仪¹, 田金举¹, 任婧¹, 邓秀娟¹, 陈曦墨², 谢瑾¹, 丁焱¹, 杨燕¹

1. 中山大学公共卫生学院营养系 广东省营养膳食与健康重点实验室, 广东 广州 510080;
2. 中山大学中山医学院

摘要:

目的 探讨花色苷矢车菊素-3-葡萄糖苷(Cy-3-g)对血小板凋亡通路中BCL2家族影响。方法 采集健康志愿者外周静脉血,制备纯化血小板悬液;纯化后的血小板与终浓度为0.5、5、50 μmol/L 花色苷Cy-3-g孵育,胶原作为凋亡诱导剂诱导血小板凋亡后,采用流式细胞仪测定血小板凋亡率,提取总蛋白用western blot 检测抗凋亡蛋白BCL-XL,促凋亡蛋白BAK、BAX、BID及cleaved BID蛋白表达量。结果 与对照组比较,5 μmol/L花色苷能够明显增加血小板凋亡率;与对照组比较,5、50 μmol/L 花色苷组BCL-XL蛋白表达水平[分别为(0.739±0.047)、(0.884±0.004)]明显下调,差异均有统计学意义($P<0.01$);与对照组比较,5、50 μmol/L花色苷组 BAK、BAX、BID蛋白表达水平[分别为BAK:(1.667±0.063)、(1.531±0.039),BAX:(2.271±0.165)、(1.895±0.018),BID:(1.861±0.231)、(1.311±0.121)]明显上调,差异均有统计学意义($P<0.05$)。结论 花色苷能够通过调控BCL2家族蛋白的表达水平促进血小板凋亡。

关键词: 花色苷 血小板凋亡 BCL2家族

Effects of anthocyanin on BCL2 family of platelet apoptosis pathway

CHEN Li-yi¹, TIAN Jin-ju¹, REN Jing¹, et al¹

1. Department of Nutrition, School of Public Health, Sun Yat-sen University, Guangzhou, Guangdong Province 510080, China

Abstract:

Objective To investigate the effects of anthocyanin cyanidin-3-glucoside (Cy-3-g) on BCL2 family of platelet apoptosis pathway. Methods Peripheral venous blood samples of healthy volunteers were collected and purified platelet suspension was prepared. Gel-filtered platelets were pre-incubated with 0.5, 5, and 50 μmol/L Cy-3-g and induced by collagen. Flow cytometry was used to measure platelet apoptosis rate and total platelet proteins were extracted; the expressions of anti-apoptotic proteins BCL-XL and pro-apoptotic proteins BAK, BAX, BID and cleaved BID were quantified with western blot. Results Compared with the control group, 5 μmol/L Cy-3-g significantly increased the rate of platelet apoptosis and 5 μmol/L (0.739±0.047), 50 μmol/L (0.884±0.004) Cy-3-g effectively reduced expression of anti-apoptotic protein BCL-XL in platelets ($P<0.01$). Compared with the control group, 5, 50 μmol/L Cy-3-g significantly promoted the expressions of pro-apoptotic proteins BAK, BAX, BID and the differences were of statistic significance at concentrations of 5 μmol/L (1.667±0.063, 2.271±0.165, 1.861±0.231) and 50 μmol/L (1.531±0.039, 1.895±0.018, 1.311±0.121), respectively (all $P<0.05$). Conclusion Cy-3-g effectively promotes platelet apoptosis by affecting the proteins expression of BCL2 family.

Keywords: anthocyanins platelet apoptosis BCL2 family

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