[1]毛蜀,何密斯,刘桂元,等.姜黄素对髓母细胞瘤PI3K/Akt信号通路的作用[J].第三军医大学学报,2013,35(06):518-522.

Mao Shu,He Misi,Liu Guiyuan,et al.Curcumin suppresses proliferation and induces apoptosis in human medulloblastoma cells via PI3k/Akt signaling pathway[J].J Third Mil Med Univ,2013,35(06):518-522.

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姜黄素对髓母细胞瘤PI3K/Akt信号通路的作用(PDF)

《第三军医大学学报》[ISSN:1000-5404/CN:51-1095/R] 卷: 35 期数: 2013年第06期 页码: 518-522 栏目: 论著 出版日期: 2013-03-30

Title: Curcumin suppresses proliferation and induces apoptosis in human medulloblastoma cells *via* PI3k/Akt signaling pathway

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关键词: 髓母细胞瘤; 姜黄素; PI3K/Akt信号通路

Keywords: medulloblastoma cells; curcumin; PI3K/Akt pathway

分类号: R73-36; R739.41; R979.1

DOI: -

文献标识码: A

摘要: 目的 探讨姜黄素对髓母细胞瘤PI3K/Akt信号通路的作用。 方法 细胞培养至对数生长期后设对照组（Ct组）和姜黄素处理组（Cur组）。Cur组用20、40、60、80、100 μmol/L姜黄素处理24、48、72 h。采用MTT法检测姜黄素对髓母细胞瘤Daoy细胞的生长抑制作用。流式细胞术分析Daoy细胞凋亡率；免疫细胞化学染色检测PI3K、p-Akt和Akt在细胞中表达情况；Western blot和RT-PCR分别检测PI3K、p-Akt和Akt蛋白及mRNA的表达水平。 结果 不同浓度姜黄素作用不同时间后，细胞受到不同程度的抑制，呈时间-剂量依赖关系（$P<0.05$）。姜黄素作用48 h抑制作用显著，差异有统计学意义（$F=131.829$，$P<0.05$），且IC_{50}为35 μmol/L，细胞凋亡也最明显（29.7%）。PI3K、Akt和p-Akt蛋白在Ct组中的阳性表达率分别为80.7%、84.8%和87.5%；Cur组阳性表达率均明显下降，分别为25.3%、58.8%和26.7%。两组比较，差异有统计学意义（$P<0.05$）。Western blot显示Ct组PI3K、Akt和p-Akt蛋白灰度比值分别为（1.141±0.032）、（1.047±0.174）、（1.173±0.013）；Cur组PI3K和p-Akt蛋白灰度比值降低，分别为（0.875±0.029）、(0.958±0.150）。两组比较，差异有统计学意义（$t=15.530$，33.482，$P<0.05$）。RT-PCR显示Ct组PI3K mRNA灰度比值显著高于Cur组[（1.166±0.031） *vs* （0.833±0.033）,$t=12.468$，$P<0.05$]。 结论 姜黄素可能通过抑制PI3k/Akt信号通路，阻碍髓母细胞瘤Daoy细胞的增殖、诱导凋亡。

Abstract: Objective To determine the role of curcumin to PI3k/Akt signaling pathway in human medulloblastoma. Methods Daoy cells were treated with curcumin at different concentrations of 20 to 100 μmol/L for time intervals of 24, 48, and

72 h when they were in the logarithmic growth phase. The proliferation and apoptosis in Daoy cells in presence or absence of curcumin was analyzed by MTT assay and flow cytometry, respectively. The expression of PI3K, Akt and p-Akt at mRNA and protein levels was detected by RT-PCR, immunocytochemistry and Western blotting, respectively. Results Exposure of the cells to curcumin resulted in a decrease in cell proliferation in a dose- and time-dependent manner (P<0.05). When the concentration of curcumin was 35 μmol/L and the treatment was for 48 h, the inhibitory rates reached peak and a significant increase of cell apoptosis was observed. The positive expression of PI3K, Akt and p-Akt in the cells without treatment were 80.7%, 84.8% and 87.5%, respectively, which were significantly higher than those in the curcumin group (25.3%, 58.8% and 26.7%, respectively, P<0.05). The relative expression of PI3K, Akt and p-Akt protein in the cells without treatment were 1.141±0.032, 1.047±0.174 and 1.173±0.013, respectively, with those of the first and last proteins were significantly higher than those of the curcumin group (0.875±0.029 and 0.958±0.150, P<0.05). The relative expression of PI3K and Akt mRNA in the cells without treatment were 1.166±0.031 and 1.072±0.007, respectively, with the expression of PI3K were significantly higher than that of the curcumin group (0.833±0.033, t=12.468, P<0.05）. Conclusion Curcumin inhibits cell proliferation and induces apoptosis in medulloblastoma Daoy cells through the PI3K/Akt signaling pathway.

参考文献/REFERENCES

毛蜀, 何密斯, 刘桂元, 等. 姜黄素对髓母细胞瘤PI3K/Akt信号通路的作用[J].第三军医大学学报,2013,35(6):518-522.

备注/Memo: -

更新日期/Last Update: 2013-03-19