

抑制β-catenin诱导的多发性骨髓瘤细胞自噬与凋亡关系的研究

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Title: The study of the relationship between autophagy and apoptosis induced by the silence of β-catenin in multiple myeloma

作者: 苏楠; 王萍萍; 李艳
中国医科大学附属第一医院血液科, 辽宁 沈阳 110001

Author(s): Su Nan; Wang Pingping; Li Yan
Hematology Department, the First Affiliated Hospital of China Medical University, Liaoning Shenyang 110001, China.

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摘要: 目的: 通过慢病毒介导的siRNA转染沉默β-catenin的表达以证实抑制β-catenin所诱发的细胞自噬与凋亡之间的可能相互关系。方法: 培养多发性骨髓瘤细胞系RPMI 8226细胞, 应用慢病毒转染的方法沉默β-catenin表达, 分别联合自噬抑制剂3-MA及凋亡抑制剂Z-VAD, Western blot检测细胞加药前后β-catenin、自噬相关蛋白LC3及凋亡相关蛋白Caspase-3 (active)的表达变化; CCK-8法检测细胞增殖情况; 流式细胞术检测细胞凋亡情况。结果: 沉默β-catenin后, 联合自噬抑制剂3-MA, 细胞加药前后β-catenin表达无明显变化, LC3II表达降低, Caspase-3 (active) 表达增高, 细胞增殖能力下降, 细胞死亡增加; 联合凋亡抑制剂Z-VAD, 细胞加药前后β-catenin无明显变化, LC3II表达增高, Caspase-3 (active) 表达降低, 细胞增殖能力下降, 细胞死亡增加。结论: 沉默β-catenin所诱发的自噬与凋亡共同促进细胞死亡, 自噬和凋亡任一途径受抑, 均可使细胞转向另一死亡途径。

Abstract: Objective: To confirm the relationship between autophagy and apoptosis in multiple myeloma (MM) through the way of silencing β-catenin expression by lentivirus mediated siRNA transfection. Methods: To culture the MM cell line RPMI 8226. Lentivirus transfection method was applied to silence β-catenin expression. After silencing of β-catenin, autophagy inhibitor 3-MA and apoptosis inhibitor Z-VAD was combined separately, using CCK-8 method to detect the MM cell proliferation, flow cytometry to detect cell death, Western blot to detect expression changes of β-catenin, LC3 and Caspase-3 (active). Results: After silencing of β-catenin, combining with autophagy inhibitor 3-MA, we found cell death increased by FCM, and cell proliferation decreased by CCK-8, β-catenin didn't change, LC3II decreased and Caspase-3 (active) increased by Western blot. After silencing of β-catenin, combining with the apoptosis inhibitor Z-VAD, we found cell death increased by FCM, and cell proliferation decreased by CCK-8, β-catenin did not change, LC3II increased, Caspase-3 (active) decreased by Western blot. Conclusion: Autophagy and apoptosis induced by the silencing of β-catenin both can promote cell death, one of which is inhibited, can promote the other way to death.

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