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论著

CVB3对不同营养状态的HeLa细胞mTOR信号通路调控的影响

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摘要：

目的:探讨不同营养状况对柯萨奇病毒B3 (CVB3) 感染HeLa 细胞后mTOR 信号通路调控的影响。方法:HeLa 细胞的培养方法:非饥饿法用常规含10% 胎牛血清细胞培养液换液培养24 h 后次日再用CVB3 干预; 饥饿法用不含胎牛血清的培养基换液培养24 h 后次日再干预。将HeLa 细胞分为非饥饿法病毒组与对照组、饥饿法病毒组与对照组4 组, 采用RT-PCR 检测不同时间点HeLa 细胞CVB3 外壳蛋白、mTOR 和p70S6K mRNA 表达。结果:非饥饿法:病毒组mTOR, p70S6K mRNA 表达与对照组比较仅在12, 24 h, 差异有统计学意义(P<0.05), 而饥饿法病毒组各时间点均低于对照组(均P<0.05);饥饿法病毒组和对照组HeLa 细胞mTOR 表达均高于非饥饿法(均P<0.05), 而p70S6K mRNA 差异无统计学意义(均P>0.05)。结论:CVB3 使HeLa 细胞mTOR-p70S6K 信号通路表达下调, 饥饿法mTOR 表达高于非饥饿法。

关键词： 柯萨奇病毒B3 HeLa 细胞 营养剥夺 mTOR

Regulation of mTOR signal pathway in HeLa cells under different nutritional conditions by Coxsackie virus B3

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Abstract:

Objective: To explore the changes of mTOR signal pathway in HeLa cells under different nutritional conditions infected with Coxsackie virus B3 (CVB3).
Methods: The HeLa cells were cultured with two methods: the conventional culture method cultured HeLa cells with medium with 10% fetal bovine serum for 24 h and changed the medium next day, and then infected with CVB3; the serum starvation method cultured HeLa cells with medium without fetal bovine serum for 24 h, and then infected with CVB3. The expression of the coat protein of CVB3, mTOR, p70S6K mRNA was detected with RT-PCR at different time points.
Results: The virus group showed the expressions of mTOR and p70S6K mRNA were significantly higher than those in the control group at 12 h and 24 h (P<0.05) in the conventional culture. The virus group showed the expressions of mTOR and p70S6K mRNA were lower than those in the control group (all P<0.05) in the starvation serum. The expression of mTOR mRNA in the starvation serum virus group was higher than that in the conventional culture virus group (all P<0.05) and the control group. The expression of p70S6K mRNA was not significantly different in the two groups (P>0.05).
Conclusion: CVB3 can down-regulate the expressions of mTOR and p70S6K mRNA. The mTOR expression in the starvation serum is higher than that in the conventional culture.

Keywords: Coxsackie virus B3 HeLa cell nutrition deprivation mTOR

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