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基础医学

人脐带间充质干细胞对宫颈癌Hela细胞增殖的影响

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摘要：

目的 探讨人脐带间充质干细胞(MSCs)对宫颈癌细胞生物学特性的影响。方法 分离培养脐带MSCs，将MSCs或其条件培养基与宫颈癌细胞Hela共培养，生长曲线、集落形成实验及RT PCR分别检测MSCs细胞或条件培养基对Hela细胞增殖及凋亡相关基因表达的影响。结果 生长曲线结果显示，MSCs细胞及条件培养液可抑制Hela细胞增殖，并呈现一定的浓度依赖性。集落形成实验结果显示，MSCs条件培养液可抑制Hela细胞集落形成能力；RT PCR结果显示，MSCs条件培养基促进Hela细胞P53、Bax及caspase-3基因表达，下调Bcl-2及survivin表达。结论 MSCs体外可促进宫颈癌细胞凋亡，抑制Hela细胞增殖。

关键词： 间充质干细胞；肿瘤细胞；增殖；细胞凋亡

Effects of human umbilical cord mesenchymal stem cells on the growth of Hela cell lines

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Abstract:

Objective To confirm the effect of mesenchymal stem cell (MSCs) on the growth of cervical carcinoma Hela cell line and elucidate the mechanism. Methods MSCs were isolated from human umbilical cord. MSCs were cultured with Hela and the growth inhibitory effect of MSCs on cervical carcinoma was tested through Cell Counting Kit-8. The inhibitory effect of MSCs conditional culture media on Hela was examined using CCK-8 and colony formation assay. The apoptosis induction effect of MSCs condition culture media on Hela was assessed with RT-PCR assay. Results Human umbilical cord MSCs were successfully cultivated. CCK-8 showed that MSCs and its conditional culture media exhibited a number-dependent growth inhibitory effect on Hela cell lines in vitro. The number of colonies formed by Hela cultured with MSCs conditional culture media was significantly lower compared with the control group. RT-PCR showed that MSCs conditional culture media could upregulate proapoptosis mRNA gene expression of Bax, P53 and Caspase-3, and inhibit anti-apoptosis gene expression of Bcl-2 and survivin. Conclusion MSCs could inhibit tumor cell growth in vitro by inducing cervical cancer cell apoptosis.

Keywords: Mesenchymal stem cells; Tumor; Proliferation; Apoptosis

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