

基础研究

端粒延伸替代途径在人骨髓间充质干细胞中的表达和作用

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摘要:

目的: 分离、培养人骨髓间充质干细胞(hMSCs), 观察端粒延伸替代途径相关的白血病前髓淋巴细胞小体(PML)在骨髓间充质干细胞中的表达情况, 明确其在hMSCs自我更新和分裂增殖过程中的作用。方法: Percoll 梯度离心法分离培养hMSCs, 免疫细胞化学染色方法检测PML小体在hMSCs中的表达率。结果: P1、P3和P5代hMSCs中未见明显PML小体表达; P7代hMSCs中可见PML小体在细胞核中呈阳性表达, 表现为胞核内出现棕黄色颗粒, 表达率为(16.1±0.6)%; P9和P11代hMSCs中亦可见PML小体表达, 阳性率分别为(16.8±2.6)%和(45.8±9.5)%, P11代hMSCs PML小体表达率高于P7代hMSCs(P<0.05)。结论: 随着hMSCs传代次数的增加, 端粒延伸替代途径逐渐出现发挥其延长端粒长度的作用, 进而维持细胞的增殖和自我更新的能力。

关键词: 骨髓; 间质干细胞; 端粒酶; 免疫组织化学

Expression of alternative lengthening telomere in human bone marrow mesenchymal stem cells

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Abstract:

Abstract: Objective

To isolate and cultivate human bone marrow mesenchymal stem cells (hMSCs) in vitro, and observe the expression of alternative lengthening telomere related promyelocytic leukemia protein (PML) in hMSCs, in order to evaluate its role in self-renewal and division growth processes of hMSCs. Methods hMSCs were isolated from bone marrow by Percoll density gradient centrifugation. Immunocytochemistry staining was used to detect the expression rate of PML body in hMSCs. Results There were no visible expressions of PML body in passage 1, 3 and 5 of cultured hMSCs. There was positive expression of PML body in passage 7 hMSCs, there were brown particles in nuclei of hMSCs, the positive rate was (16.1±0.6)%. There were also positive expressions of PML body in passage 9 and 11 hMSCs, the positive rates were (16.8±2.6)% and (45.8±9.5)%, respectively; there were significant differences between passage 9, 11 and passage 7 hMSCs (P<0.05). Conclusion Following long-time culture of hMSCs in vitro, ALT will appear in hMSCs to promote the lengthening of telomere, and maintain the ability of proliferation and self-renewal of hMSCs.

Keywords: bone marrow; mesenchymal stem cell; telomerase; immunohistochemistry

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