

论著

新生乳鼠视网膜细胞诱导骨髓间质干细胞向视网膜神经样细胞分化

余克明¹, 葛坚^{1△}, 庄菁², 陈慧怡¹, 王智崇¹, 喻瓴¹

1中山大学中山眼科中心, 广东 广州 510060; 2中山大学中山医学院生物化学教研室, 广东 广州 510080

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摘要 目的: 探讨体外培养的新生乳鼠视网膜细胞对骨髓间质干细胞的诱导分化作用。方法: 取成年Wistar大鼠股骨全骨髓细胞体外培养, 经多次传代后获得高纯度的骨髓间质干细胞。以新生乳鼠视网膜细胞作诱导条件, 采用分层共培养的方法诱导骨髓间质干细胞。倒置相差显微镜观察骨髓间质干细胞与新生乳鼠视网膜细胞共培养后形态的改变; 免疫组织化学法检测诱导后的细胞巢蛋白(nestin)、神经丝蛋白(NF)、神经元特异性烯醇化酶(NSE)、微丝微管相关蛋白-2(Map-2)、Thy 1.1、胶质纤维酸性蛋白(GFAP)等特异性标记物的表达; RT-PCR进一步分析诱导后细胞表达nestin、NF、NSE、Thy 1.1及Ran等mRNA的情况。结果: 新生乳鼠视网膜细胞作诱导剂, 诱导48 h后可见部分细胞长出突起并向视网膜神经元特性样的细胞分化, 最长可维持10 d。结论: 骨髓间质干细胞在体外培养的新生乳鼠视网膜细胞的诱导作用下可以向视网膜神经样细胞分化。

关键词 [骨髓间质干细胞](#); [诱导分化](#); [视网膜](#)

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Retinal cells of rat neonates induce the bone marrow stromal stem cells into retinal neurons

YU Ke-ming¹, GE Jian¹, Zhuang Jing², CHEN Hui-yi¹, WANG Zhi-chong¹, YU Ling¹

1Zhongshan Ophthalmic Center, Sun Yat-sen University, Guangzhou 510060, China; 2Department of Biochemistry, Sun Yat-sen Medical College, Sun Yat-sen University, Guangzhou 510080, China

Abstract

AIM: To investigate the inducing action of retinal cells of rat neonates on the adult rat bone marrow stromal cells (BMSCs).METHODS: The full marrow from adult Wistar rat were cultured and passaged repeatedly to harvest the pure BMSCs. In vitro, the BMSCs were induced by retinal cells of rat neonates in transwell.The morphological changes of the BMSCs were observed under phase contrast microscope, the specific markers of the induced cells were identified immunocytochemically with nestin, Map-2, neuron-specific enolase (NSE),neurofilament(NF), Thy 1.1 and glial fibrillary acidic protein(GFAP) antibodies. The mRNA of nestin, NF, NSE, Thy 1.1 and Ran were detected in the induced cells by RT-PCR.RESULTS: The BMSCs were induced by reinal cells of rat neonates into the retina-like neurons, which showed the typical neural morphology and expression of the specific retinal neural antigens.CONCLUSION: The BMSCs from the adult rat can be induced into retina-like cells by retinal cells of rat neonates.

Key words [Bone marrow stromal stem cells](#) [Inducing differentiation](#) [Retina](#)

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通讯作者 葛坚 jiange@gzsums.edu.cn

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