

北京油鸡胚胎肝脏来源间充质干细胞的分离培养及生物学特性

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摘要 鸡胎肝间充质干细胞是一种多能干细胞,可以在体外分化成多种终末分化细胞;目前大多数肝脏间充质干细胞研究都集中在大鼠和小鼠,其他动物研究相对较少。文章从7日龄北京油鸡胚胎肝脏中分离间充质干细胞,原代培养并传代至15代。免疫荧光法检测间充质干细胞表面标志物CD29、CD44呈阳性表达,同时检测造血祖细胞/肝卵圆细胞的表面标志物CD34、CK19呈阴性表达。RT-PCR检测CD29、CD44、CD71、CD73呈阳性表达。细胞生长曲线呈“S”型。肝脏间充质干细胞通过不同诱导液被成功诱导分化成神经细胞、成骨细胞。结果表明,从鸡胎肝中分离获得的间充质干细胞具有和小鼠的间充质干细胞相似的生物学特性及分化潜能,其具有多向分化的潜能为今后临床广泛应用提供了可能行。

关键词: 北京油鸡 间充质干细胞 增殖能力 诱导分化

Abstract: Mesenchymal stem cells (MSCs) from chicken fetal liver are multipotent stem cells that can differentiate in vitro into various terminally differentiated cells. The majority of studies have focused on rats and mice now. Reports from other animals are less and analyses on domestic animals are few. In this study, chicken liver-derived MSCs were isolated from 7-day-old embryo of Beijing fatty chickens. Primary liver-derived MSCs were subcultured to passage 15. The surface markers of liver-derived MSCs, CD29, and CD44 were detected by immunofluorescence and the surface markers CD34 and CK19 of hematopoietic progenitor cells/hepatic oval cells were not detected. RT-PCR analysis detected positive expression of CD29, CD44, CD71, and CD73. The growth curves were typically sigmoidal. Liver-derived MSCs of different passages were successfully induced and differentiated into neuronal and osteoblast cells. The results suggest that the MSCs isolated from chicken fetal liver possess similar biological characteristics with those derived from mice, and their multilineage differentiation provides many potential applications.

Keywords: Beijing fatty chicken, mesenchymal stem cells, proliferation, differentiation potential

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