A new method for bone-marrow-derived liver stem cells isolation and proliferation

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Great interest has been aroused in the identification and isolation of liver stem cells from bone marrow cells. Several subsets of bone marrow cells have been found to have the potential to differentiate into hepatocytes, however, sorting based on immunological methods is difficult because of the complicated surface markers of the stem cells; furthermore, no report of successful passage has been published.

A research article to be published on April 7, 2009 in the World Journal of Gastroenterology addresses this question. The research team led by Dr. Cai and his colleagues from the Affiliated Foshan Hospital and the Second Affiliated Hospital of Sun Yat-sen University established a carefully designed culture system to isolate, proliferate and differentiate liver stem cells directly from bone marrow cells, and they were able to achieve six passages of the stem cells. The results suggest that BDLSCs can be purified and passaged.

The selecting culture system that contains cholestatic serum can purify BDLSCs directly from bone marrow cells, which provides an easy method to separate stem cells, by avoiding complicated immunological manipulation. The successful passage of the stem cells further verifies the proliferating ability of the cells, although the passage is limited, and further research will provide more experience.

In this study, the authors used their original method to retrieve the cells, which are possibly BDLSCs. Then, they used fluorescence-activated cell sorting to determine the cells' characteristics before and after

differentiation. This is an interesting and potentially important study, which suggests that bone-marrow-derived cells can be stimulated to expand and then differentiate into hepatocyte-like cells, which can possibly be used to treat liver disease.

More information: Cai YF, Chen JS, Su SY, Zhen ZJ, Chen HW. Passage of bone marrow-derived liver stem cells with a proliferating culture system. World J Gastroenterol 2009; 15(13): 1630-1635, www.wjgnet.com/1007-9327/15/1630.asp

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