

Purified CD133 Positive Human Cells

DV Biologics now offers high purity frozen CD133 positive (CD133+) human cells isolated from prenatal liver and bone marrow. CD133/AC133 (prominin-1) is a five transmembrane domain glycoprotein expressed on hematopoietic stem cells, endothelial progenitor cells, glioblastomas, and neural stem cells^{1,2}. CD133/AC133+ cells are capable of long term hematopoietic repopulation and are thought to be more primitive than CD34+ stem cells. The specific functions of CD133/AC133 remain relatively unclear; however there is a vast amount of studies focusing on cancer and the role of CD133 as a stem cell since CD133 is found in certain cancers such as retinoblastoma¹.

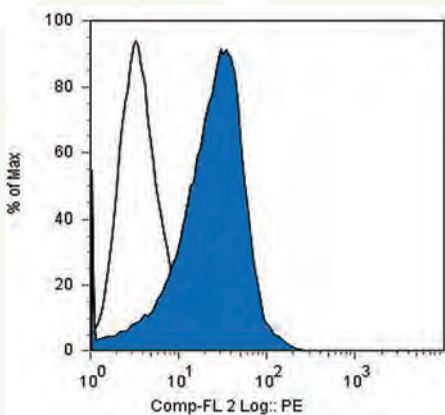


Figure 1: Flow cytometry analysis demonstrating CD133+ cells after staining with a CD133-PE conjugated antibody. The cells are 87% positive for CD133 after magnetic cell separation according to flow cytometry.

DV Biologics' CD133+ cells are isolated using magnetic cell separation and are 87% pure populations, as confirmed by FACS analysis (Fig.1). RT-PCR supports and extends the data demonstrating expression of CD133 (Fig. 2). CD133+ cells can be used for various studies on hematopoiesis, cancer, differentiation, angiogenesis, colony formation, and surface marker expression. In addition, these cells provide a selective population useful for transplantation and tissue regeneration studies.

CD133+ cells isolated from the liver are easily differentiated into multiple cell types. We differentiated the cells into endothelial cells as confirmed by acetyl-LDL uptake assay (Fig.3) and into myocytes as indicated by multinucleated cells and immunocytochemistry analysis for the muscle specific marker α -sarcomeric actin (Fig. 4).

1. Shmelkov S. V., et al. *Int J Biochem Cell Biol.* 2005; 37(4): 715-9.
2. Mizrak D., Brittan M., Alison M. R. *J Pathol.* 2008; 214(1): 3-9.

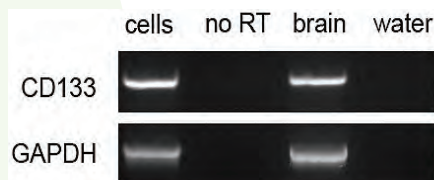


Figure 2: RT-PCR analysis demonstrates that CD133 positive cells after magnetic cell separation express CD133 at the RNA level. Lane 1 CD133+ cells, lane 2 no RT, lane 3 whole brain positive control, and lane 4 water negative control.

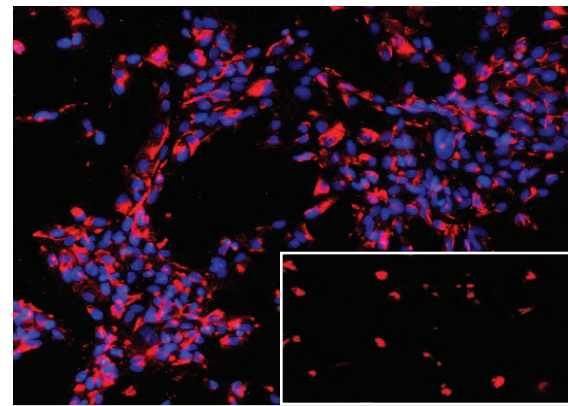


Figure 3: Immunocytochemistry (ICC) and ac-LDL uptake assay. After plating CD133+ cells and placing them into endothelial cell media, cells begin to form a cobblestone appearance (ICC for CD133+ in red, nuclei blue). After a few passages, we measured their ability of incorporating acetyl-LDL which is indicative of endothelial cells using acetylated low density lipoprotein labeled with Dil (insert; cells shown in red). 10X magnification.

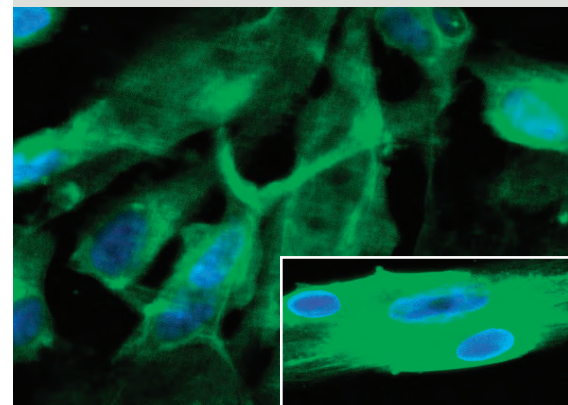


Figure 4: Immunocytochemistry assay demonstrating CD133 cells can be differentiated into myocytes. After treating the cells with specific growth factors, cells commence elongating and express the marker α -sarcomeric actin (green) and become multinucleated (DAPI in blue). Insert is a high magnification (60X) picture of a multinucleated cell.



Ways To Place An Order

Orders may be placed by phone, fax, email or through the online ordering system. Please visit the website to download DV Biologics PDF Order Form to place an order via fax or use the form below.

Shipping & Delivery

US. All North American orders are shipped from DV Biologics headquarters in Southern California and freight is pre-paid and added to your invoice as a separate item. Orders are shipped within 1 or 2 working days, depending upon the availability of the item. Shipments are sent every Monday to Thursday via overnight courier service for delivery on the next business day.

International. International orders are shipped from DV Biologics headquarters in Southern California every Monday unless specially requested to be shipped on another date.

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Products are sold for laboratory research use only and are not to be used in humans for any purpose. As a condition of purchase, the purchaser shall not make products available for the purpose of further resale or alter the product label and the DV Biologics mark of origin without the express written permission of DV Biologics LLC.

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