April 2010

WHAT'S NEW AT dv biologics®

CELLutions for Innovation™

newsletter

Human Glial Progenitor Cells (A2B5+)

The two major types of glial cells in the brain are astrocytes and oligodendrocytes. Both cells are fundamental for the survival and proper function of neuronal cells and therefore have a remarkable utility for basic development, disease modeling, drug discovery, aging and therapeutic aimed studies.

Glial precursors can be identified during development and in adult brain by the expression of specific markers. One of the most recognized markers, ganglioside epitope 3, is recognized by the antibody A2B5. Thus, glial progenitors are frequently referred to as A2B5+ cells. It has been shown that upon differentiation, A2B5+ cells can give rise to both oligodendrocytes and astrocytes.

DV Biologics A2B5+ cells (pN006-f) are isolated using MACs technology, a proven highly efficient method for purification of glial progenitors from heterogeneous digestates of neural tissue[1]. Upon magnetic separation, more than 90% of the isolated cells are shown to express the antigen recognized by the antibody A2B5 (Figure 1). This population is also enriched in cells expressing GFAP (astrocyte marker) and O4 (oligodendrocyte marker) (Figure 2). Isolated A2B5+ cells can be expanded and passaged several times in culture (Figure 3). DV Biologics A2B5+ cultured cells express GFAP, NG2 and CNPase as demonstrated by PCR (Figure 4).

DV Biologics' cells offer researchers a unique opportunity to study human derived glial precursor cell populations in a variety of experimental approaches - ranging from gliogenesis and neurogenesis to neurodegenerative diseases.

Stay tuned for new DV biologics products – Neural Cellutions Medium coming soon!

1. Cizkova D et al (2009). J Neuroscience Methods 184:88-94..

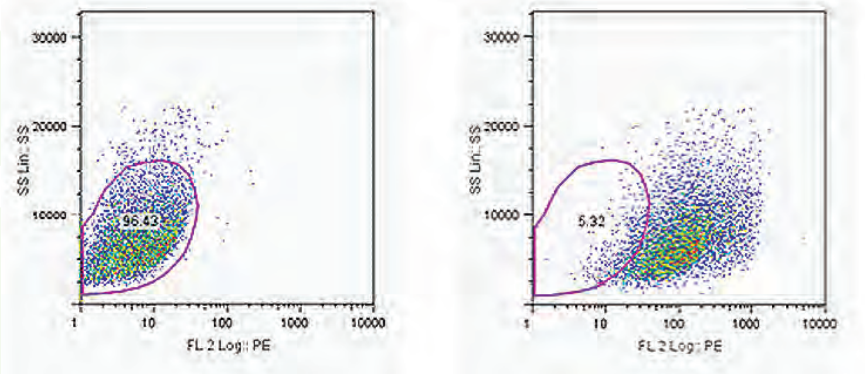

Figure 1: Flow cytometric analysis of thawed human isolated A2B5+ cells. Right panel shows immunoreactivity of the magnetic isolated glial progenitors with antibody A2B5 and left panel is showing the scatter properties of the isotype control.

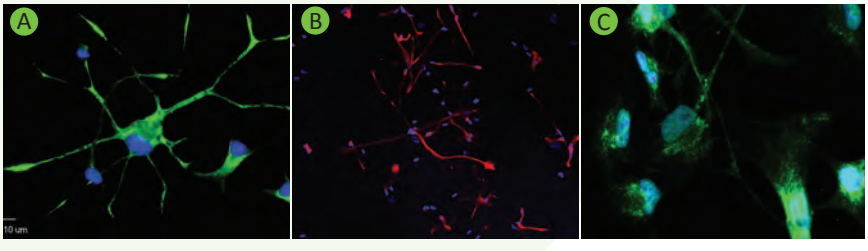

Figure 2: Characterization of DV Biologics A2B5+ cells upon thawing. Cells were thawed, plated for 24 hours, fixed and processed for immunofluorescence using A2B5 antibody (green) (A), GFAP (red) (B) and O4 (green) (C). Nuclei are stained with DAPI (blue).

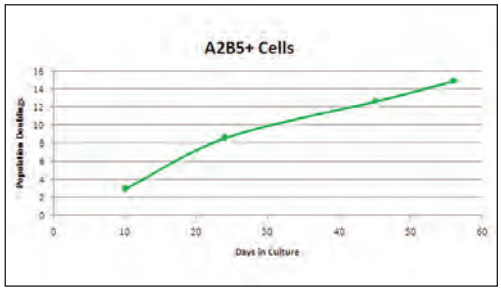

Figure 3: Graph of estimated population doublings for A2B5+ cells.

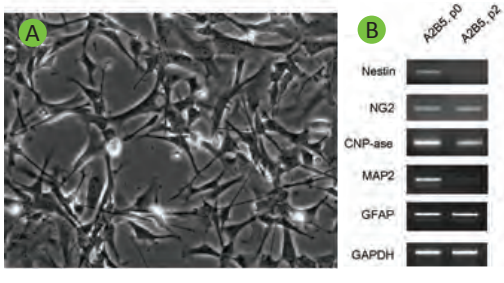

Figure 4: Characterization of DV Biologics A2B5+ cells upon culture. (A) Phase contrast micrography of A2B5+ cells passaged and cultured for 18 days. (B) Nestin, NG2, GFAP, CNPase, MAP2 and GAPDH RT-PCR performed on mRNA derived from thawed and passage 2 A2B5+ cells.

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