# BD Stemflow Human Neural Lineage Analysis Kit

Features

- Provides intracellular, multimarker data with antibodies that can be used at various time points to resolve hNSCs from neurons and glia in a heterogeneous population

- Includes key neural differentiation markers CD44, doublecortin, nestin, Sox1, Sox2, and GFAP, plus Ki-67 for identification of cycling cells

- Delivers a streamlined solution for consistent experiments with fluorochrome conjugated antibodies, buffers, and a detailed protocol
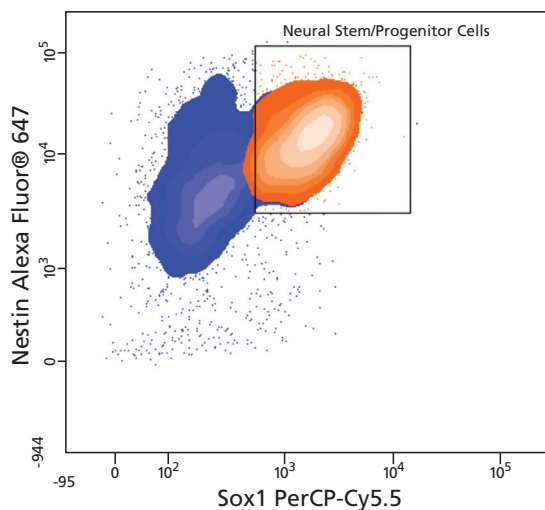
Figure 1. Neural induction of H9 human ES cells.
H9 human embryonic stem cell (hESC) derived embryoid bodies (EBs) were plated on BD Matrigel™-coated plates in neural induction media with 1x ITS supplement, recombinant Noggin, and antibiotics, and cultured for 15 days. Cells were analyzed for multiple markers to resolve NSCs and progenitors using the BD Stemflow Human Neural Lineage Analysis Kit.

The BD Stemflow™ Human Neural Lineage Analysis Kit provides a comprehensive research system for the reliable, in-depth characterization of differentiation stages of human neural stem cells (hNSCs) from a heterogeneous culture.

To maximize reproducibility and improve productivity, the total solution kit integrates preconjugated antibodies to markers for hNSCs, neurons, and glia, fixation and permeabilization buffers, and a verified protocol. An open design provides the flexibility to use varying antibody combinations to probe for cell types and stages at different time points.

Multicolor Flow Cytometry for In-depth Analysis
Capitalizing on the powerful capabilities of multicolor flow cytometry, the kits allow researchers to perform multiparameter analysis at the single-cell level, enabling deep insight into cell identity and function. Data on the relative expression level of multiple markers can be obtained for individual pluripotent or differentiated cells.

A Total Solution System to Minimize Variability
Monoclonal antibodies specific to known key markers including Sox1, Sox2, nestin, GFAP, CD44, and doublecortin identify and resolve hNSCs, neurons, and glia/glial progenitors/astrocytes. Along with Ki-67 to mark proliferating cells, all antibodies are pretitrated and preconjugated to improve productivity and reduce assay-to-assay variability. Fixation and permeabilization buffers, along with a detailed protocol, help standardize procedures and further reduce variability.

### Modular and Open to Accommodate Specific Needs
From simple customization to more advanced analysis, the open, modular architecture of the kit enables the antibodies to be combined in a number of ways, at different time points, to reveal differentiation stages from hNSCs to neurons and glia from a heterogeneous starting population.

A Resource for Stem Cell Research
With more than 25 years of successful experience in the field, BD Biosciences continues to support innovation in the area of stem cell research. Inspired by in-depth understanding of the complexities of biological experiments, the BD Stemflow Human Neural Lineage Analysis Kit is designed to make it easier for researchers to obtain accurate results, increase research productivity, and accelerate discoveries.

Visit **bdbiosciences.com/stemcellsource** for more information.

BD Stemflow Human Neural Lineage Analysis Kit
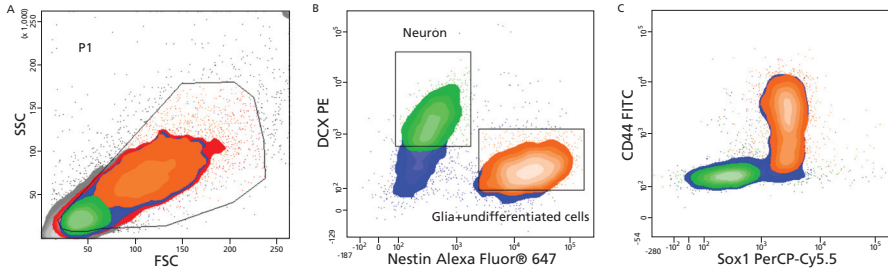
Figure 2. The differentiation state of human ES (H9) derived NSCs was analyzed for multiple markers to resolve NSCs from neurons and glia using the BD Stemflow Human Neural Lineage Analysis Kit.

A) A heterogeneous population of differentiated NSCs (28 days) was stained with FITC Mouse anti-human CD44, PE Mouse anti-doublecortin (DCX), PerCP-Cy™5.5 Mouse anti-Human Sox1, and Alexa Fluor® 647 Mouse anti-Nestin. The cells were then analyzed on a BD™ LSR II flow cytometry system.

B) Doublecortin identifies neurons (green), while the nestin-positive population stains glia and NSCs (orange).

C) The CD44$^+$Sox1$^+$ double-positive population marks glia (orange), and the Sox1 single positives show glia and undifferentiated NSCs.

Ordering Information

Description	Size	Cat.No.
BD Stemflow Human Neural Lineage Analysis Kit	25 tests	**561526**

Kit Contents

Monoclonal Antibodies	Neural Cell Population Identified
CD44 FITC	Glial cells, astrocytes, and astrocyte precursors
Ki-67 Alexa Fluor® 488	All proliferating cell types
Doublecortin PE	Immature post-mitotic neurons
Sox1 PerCP-Cy5.5	Glial cells and neural stem cells
Sox2 PerCP-Cy5.5	Glial cells, embryonic and neural stem cells
GFAP Alexa Fluor® 647	Astrocytes
Nestin Alexa Fluor® 647	Glial cells, astrocytes, embryonic and neural stem cells

Buffers
BD Cytofix™ fixation buffer
BD Phosflow™ perm buffer III

Related Products

Description	React.	Clone	Isotype	Fomat	Apps	Size	Cat.No.
CD44	Hu	G44-26	Ms IgG$_{2b}$, κ	FITC	FCM	100 tests	**555478**
				PE	FCM	100 tests	**555479**
				PerCP-Cy5.5	FCM	50 tests	**560531**
				PE-Cy™7	FCM	50 tests	**560533**
				APC	FCM	100 tests	**559942**
				Alexa Fluor® 700	FCM	50 tests	**561289**
				APC-H7	FCM	50 tests	**560532**
Doublecortin	Hu	30	Ms IgG$_1$	PE	IC/FCM	50 tests	**561505**
GFAP	Hu	1B4	Ms IgG$_{2b}$	PE	IC/FCM	50 tests	**561483**
				Alexa Fluor® 647	IC/FCM	50 tests	**561470**
Ki-67	Hu	B56	Ms IgG$_1$, κ	Alexa Fluor® 488	IC/FCM	50 tests	**561165**
				FITC Set	IC/FCM	100 tests	**556026**
				PE Set	IC/FCM	100 tests	**556027**
				PerCP-Cy5.5	IC/FCM	50 tests	**561284**
				Alexa Fluor® 647	IC/FCM	50 tests	**561126**
				Alexa Fluor® 700	IC/FCM	50 tests	**561277**
				BD Horizon™ V450	IC/FCM	50 tests	**561281**
Nestin	Hu, Rat	25/NESTIN	Ms IgG$_1$, κ	PE	IC/FCM	50 tests	**561230**
				PerCP-Cy5.5	IC/FCM	50 tests	**561231**
				Alexa Fluor® 647	IC/FCM	50 tests	**560393**
Sox1	Hu	N23-844	Ms IgG$_1$, κ	PerCP-Cy5.5	IC/FCM	50 tests	**561549**
Sox2	Hu, Ms	O30-678	Ms IgG$_1$, κ	PerCP-Cy5.5	IC/FCM	50 tests	**561506**
BD Cytofix fixation buffer					IC/FCM	100 mL	**554655**
BD Phosflow perm buffer III					IC/FCM	125 mL	**558050**
BD™ CompBead Plus Anti-Mouse Ig, κ compensation particles						6 mL	**560497**

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