

# BD Stemflow Human and Mouse Pluripotent Stem Cell Analysis Kit

## Features

Provides in-depth, multimarker data (including expression of Oct 3/4) to characterize the pluripotency and differentiation state of stem cell subpopulations

Delivers a streamlined solution for consistent experiments with pre-titrated fluorochrome conjugated antibodies, compensation beads, buffers, protocols, and analysis guidelines

Facilitates compensation and scatter setup and conserves cells with BD CompBead Plus

Provides flexibility to drop in additional fluorescently conjugated antibodies and to use cell lines expressing green fluorescent protein (GFP)

The BD Stemflow™ Human and Mouse Pluripotent Stem Cell Analysis Kit provides a comprehensive research system for the reliable, in-depth characterization of cellular pluripotency and differentiation state in heterogeneous stem cell mixtures.

To maximize reproducibility and improve productivity, the total solution kit integrates pre-conjugated antibodies to markers for pluripotency and differentiation (including the intracellular marker Oct 3/4), compensation beads, staining and fixation buffers, verified protocols, and software analysis guidelines.

To provide the flexibility to meet specific research objectives, an open design allows for the easy addition of supplementary antibodies and the use of cell lines expressing green fluorescent protein.

## Multicolor Flow Cytometry for In-depth Analysis

Capitalizing on flow cytometry's powerful capabilities for multiparameter analysis at the single-cell level, the system offers researchers 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. Additionally, the kit offers access to data on absolute cell counts for particular cell subpopulations.

## A Total Solution System to Minimize Variability

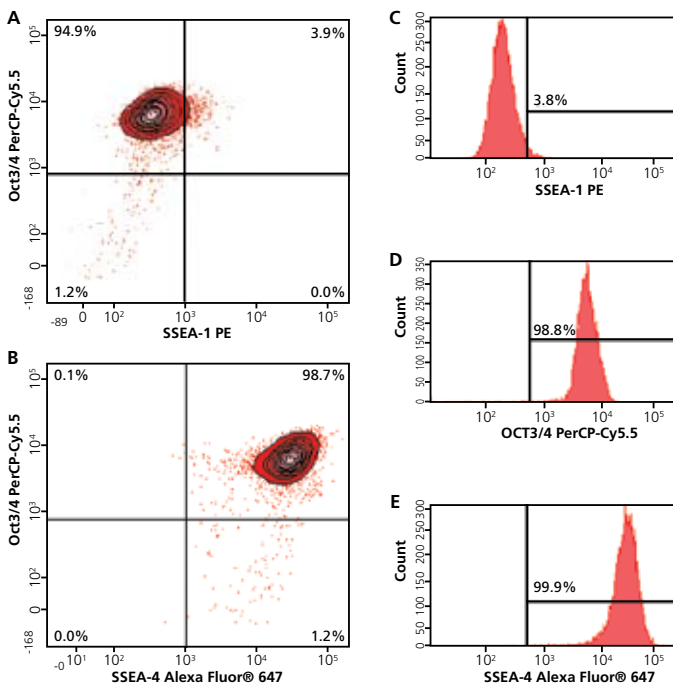
Monoclonal antibodies specific to two well known human and mouse pluripotency markers\* (Oct 3/4 PerCP-Cy™ 5.5 and SSEA-4 Alexa Fluor® 647) and one differentiation marker (SSEA-1 PE) are pre-titrated and pre-conjugated to improve productivity and reduce assay-to-assay variability. Corresponding isotype controls are also included.

BD™ CompBead Plus microparticles simplify and standardize experimental setup by facilitating compensation for multicolor analysis. The use of BD CompBead Plus also significantly reduces the number of cells required for experiments and controls. Fixation and staining buffers, as well as protocols for fixation, staining, and software analysis, standardize procedures and reduce day-to-day and lab-to-lab variability.

## Modular and Open to Accommodate Specific Needs

For simple customization and more advanced analysis, the open, modular architecture of the kit allows for the easy addition of supplementary monoclonal antibodies against critical cell-surface markers. In addition, the kit uses a multicolor fluorochrome combination that is compatible with cell lines expressing GFP.

BD CompBead Plus microparticles can also be used as compensation controls for additional antibody drop-ins to this kit. This is particularly useful when testing for markers that might or might not be expressed on cells of interest.



**Figure 1.** The differentiation status of human ES (H9) cells was analyzed for multiple markers of pluripotency and differentiation using the BD Stemflow Human and Mouse Pluripotent Stem Cell Analysis Kit.

Undifferentiated Oct 3/4<sup>+</sup>SSEA-1<sup>-</sup> and Oct 3/4<sup>+</sup>SSEA-4<sup>+</sup> human ES cells composed 94.9% and 98.7% of the cell population, respectively (panels A and B). Histograms displaying cell counts versus the relative expression level of individual markers are also shown (panels C, D, and E).

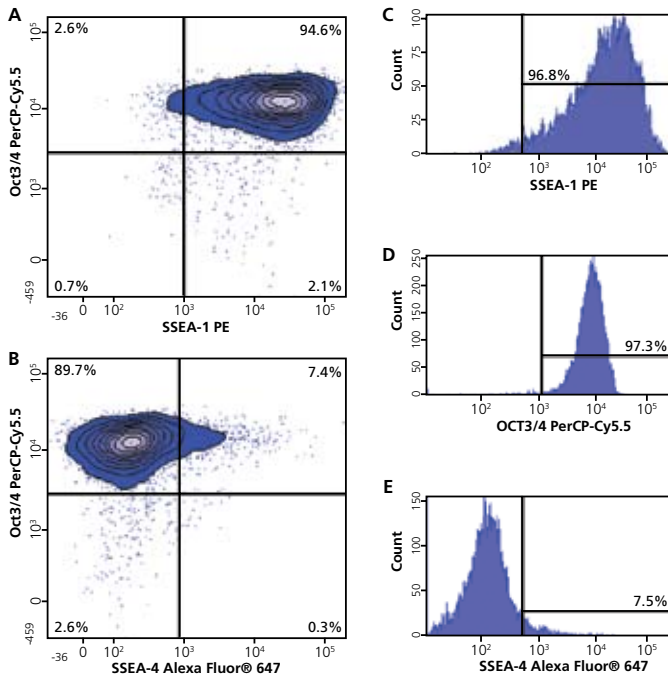
Visit [bdbiosciences.com/stemcellsource](http://bdbiosciences.com/stemcellsource) for more information.

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## A Resource for Stem Cell Research

With more than 20 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 and Mouse Pluripotent Stem Cell Analysis Kit is designed to make it easier for researchers to obtain accurate results, increase research productivity, and accelerate discoveries.

*\*Note: When used with human stem cells, SSEA-4 is used as a pluripotency marker and SSEA-1 as a differentiation marker. On mouse stem cells, SSEA-4 can be used as a differentiation marker and SSEA-1 as a mouse cell pluripotency marker.*



**Figure 2.** The differentiation status of mouse ES (ES-E14TG2a) cells was analyzed for multiple markers of pluripotency and differentiation using the BD Stemflow Human and Mouse Pluripotent Stem Cell Analysis Kit.

The markers for differentiation status in mouse are reversed from the human markers. Undifferentiated Oct 3/4<sup>+</sup>SSEA-1<sup>+</sup> and Oct 3/4<sup>+</sup>SSEA-4<sup>+</sup> cells composed 94.6% and 89.7% of the cell population, respectively (panels A and B). Histograms displaying cell counts versus the relative expression level of individual markers are also shown (panels C, D, and E).

## Ordering Information

Description	Cat.No.
BD Stemflow Human and Mouse Pluripotent Stem Cell Analysis Kit (50 tests)	560477

## BD Stemflow Human and Mouse Pluripotent Stem Cell Analysis Kit contents

<b>Monoclonal Antibodies</b>
Oct 3/4 PerCP-Cy5.5
SSEA-4 Alexa Fluor® 647
SSEA-1 PE
<b>Isotype Controls</b>
Mouse IgG3, κ Isotype Control Alexa Fluor® 647
Mouse IgG1, κ Isotype Control PerCP-Cy5.5
Mouse IgM, κ Isotype Control PE
<b>Flow Cytometry Compensation Beads</b>
BD™ CompBead Plus Anti-Mouse Ig, κ
BD CytoFix™ Buffer
BD Negative Control CompBead Plus
BD™ Perm/Wash Buffer
<b>Protocols and analysis guidelines</b>
Protocol for cell staining
Protocol for analysis, including creating BD FACSDiva™ templates

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