

BD Pluripotent Stem Cell Kits and Templates

Analysis of Pluripotency Markers on the BD Accuri™ C6 Flow Cytometer

Features

Preconfigured kits, protocols, and software templates to characterize pluripotent and differentiated stem cells on the BD Accuri C6

Support studies involving stem cell surface markers SSEA-1, -3, -4, and TRA-1-81, and intracellular transcription factors Nanog, Oct3/4, and Sox2

Enable quick and easy setup and analysis using the BD Accuri C6

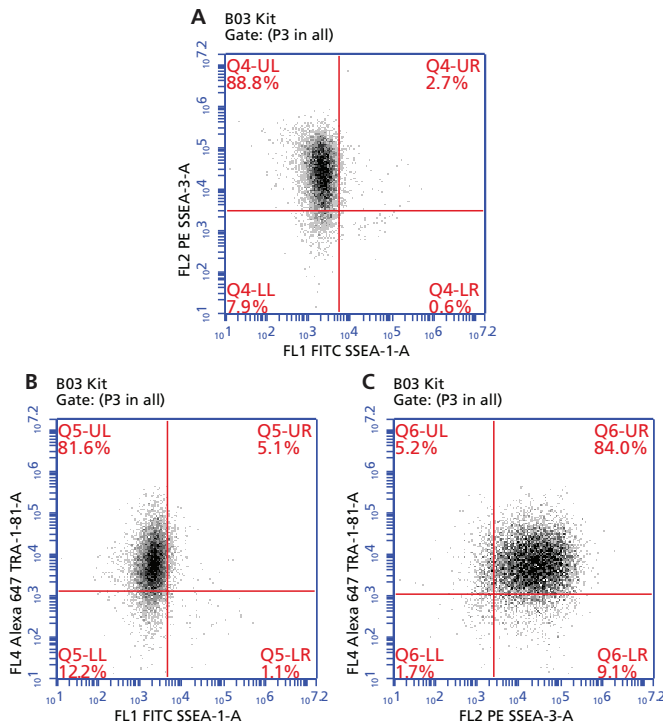
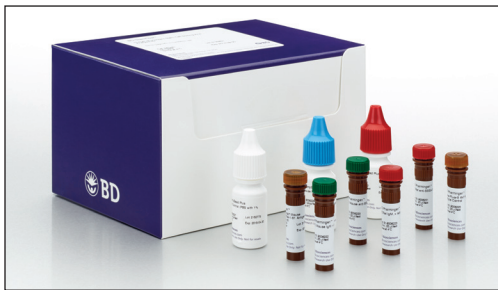


Figure 1. BD Stemflow Human Pluripotent Stem Cell Sorting and Analysis Kit (Cat. No. 560461) analysis on the BD Accuri C6.

H9 human embryonic stem cells (hESCs) were disassociated using BD™ Accutase™ Cell Detachment Solution (Cat. No. 561527), stained according to kit instructions, and acquired on a BD Accuri C6 flow cytometer using the kit template. Cells were gated on light scatter properties of H9 hESCs and analyzed for expression of key pluripotency surface markers using BD Accuri C6 software. **Results:** Most analyzed cells expressed positive pluripotency surface markers SSEA-3 and TRA-1-81, while few expressed the negative pluripotency marker (positive differentiation marker) SSEA-1.

Visit bdbiosciences.com for more information.

For Research Use Only. Not for use in diagnostic or therapeutic procedures.

BD pluripotent stem cell kits, protocols, and software templates for the BD Accuri™ C6 flow cytometer simplify the characterization of pluripotent stem cells and their derivatives. BD offers three pluripotent stem cell kits (for studies involving SSEA-1, SSEA-3, SSEA-4, TRA-1-81, Nanog, Oct3/4, and Sox2) that include fluorescent antibodies, buffer systems, and controls needed for acquisition and analysis. The panels are compatible with other markers to provide a base for studies of stem cell pluripotency and differentiation. BD Accuri™ C6 software templates matched to each kit include predefined workspaces, markers, regions, gates, and parameter names for quick and easy setup and analysis.

The three kits are listed below. Figures 1–3 show data on the BD Accuri C6 using the preconfigured kits and software templates.

The **BD Stemflow™ Human Pluripotent Stem Cell Sorting and Analysis Kit** (Cat. No. 560461), which includes antibodies to TRA-1-81, SSEA-1, and SSEA-3, provides a comprehensive system for characterizing pluripotent stem cells using flow cytometry.

The **BD Stemflow™ Human Pluripotent Stem Cell Transcription Factor Analysis Kit** (Cat. No. 560589) can simultaneously measure expression of the stem cell master regulators—Nanog, Oct3/4, and Sox2—in heterogeneous stem cell populations.

The **BD Stemflow™ Human and Mouse Pluripotent Stem Cell Analysis Kit** (Cat. No. 560477) enables reliable, in-depth characterization of cellular pluripotency and differentiation state in heterogeneous human or mouse stem cell cultures using antibodies to both cell surface (SSEA-1, SSEA-4) and intracellular markers (Oct 3/4).

Flow cytometry offers an easy, rapid, and quantitative method of analyzing established markers of stem cell pluripotency and differentiation. Researchers can examine the cells' transcriptional and surface profile to correlate with pluripotency, study their differentiation states, or scrutinize heterogeneous cell populations to identify culture dynamics.

Pluripotent stem cells differentiate into the three primary germ layers and into differentiated tissue, each characterized by certain cell surface proteins and/or intracellular transcription factors. BD offers a broad portfolio of antibodies to these markers that can be combined in many ways to monitor the cells' changing expression patterns. Analysis based on cell surface markers can preserve cell viability for use in additional experiments.

Easy to use, simple to maintain, and affordable, the BD Accuri C6 personal flow cytometer is equipped with a blue laser, a red laser, two light scatter detectors, and four fluorescence detectors. Compact design, fixed alignment, and pre-optimized detector settings result in a system that is simple to use, and a nonpressurized fluidics system enables kinetic measurements in real time. For walkaway convenience, the optional BD CSampler™ accessory offers automated sampling from 24-tube racks or multiwell plates.



BD Pluripotent Stem Cell Kits and Templates

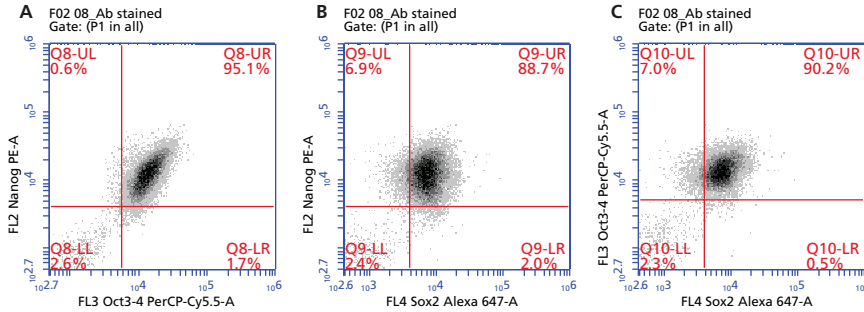


Figure 2. BD Stemflow Human Pluripotent Stem Cell Transcription Factor Analysis Kit (Cat. No. 560589) analysis on the BD Accuri C6.

H9 human embryonic stem cells (hESCs) were dissociated using BD Accutase Cell Detachment Solution (Cat. No. 561527), stained according to kit instructions, and acquired on a BD Accuri C6 flow cytometer using the kit template. Cells were gated on light scatter properties of H9 hESCs and analyzed for expression of core pluripotency transcription factors using BD Accuri C6 software. **Results:** Most analyzed cells expressed the core pluripotency transcription factors Nanog, Oct3/4, and Sox2.

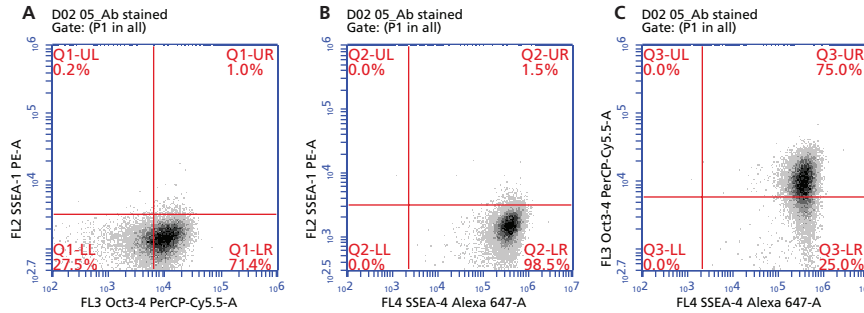


Figure 3. BD Stemflow Human and Mouse Pluripotent Stem Cell Analysis Kit (Cat. No. 560477) analysis on the BD Accuri C6.

H9 human embryonic stem cells (hESCs) were dissociated using BD Accutase Cell Detachment Solution (Cat. No. 561527), stained according to kit instructions, and acquired on a BD Accuri C6 flow cytometer using the kit template. Cells were gated on light scatter properties of H9 hESCs and analyzed for expression of key pluripotency surface markers and transcription factors using BD Accuri C6 software. **Results:** Most analyzed cells expressed the positive pluripotency surface marker SSEA-4 and the pluripotency transcription factor Oct3/4, while few expressed the negative pluripotency marker (positive differentiation marker) SSEA-1.

Ordering Information

All kits and their associated software templates are available at bdbiosciences.com/go/templates.

Description	Clone	Quantity	Number of Tests	Cat. No.
BD Stemflow Human Pluripotent Stem Cell Sorting and Analysis Kit containing:				
TRA-1-81 Alexa Fluor® 647	TRA-1-81	1.5 mL	50 tests	560461
SSEA-1 FITC	MC480	1.5 mL		
SSEA-3 PE	MC631	1.5 mL		
Controls and compensation particles as detailed in kit manual				

BD Stemflow Human Pluripotent Stem Cell Transcription Factor Analysis Kit containing:				
Nanog PE	N31-355	1.5 mL	50 tests	560589
Oct3/4 PerCP-Cy™5.5	40/Oct-3	1.5 mL		
Sox2 Alexa Fluor® 647	245610	1.5 mL		
Controls, buffers, and compensation particles as detailed in kit manual				

BD Stemflow Human and Mouse Pluripotent Stem Cell Analysis Kit containing:				
Oct3/4 PerCP-Cy5.5	40/Oct-3	1.5 mL	50 tests	560477
SSEA-4 Alexa Fluor® 647	MC813	1.5 mL		
SSEA-1 PE	MC480	1.5 mL		
Controls, buffers, and compensation particles as detailed in kit manual				

Related Kits

Description	Cat. No.
BD Stemflow™ Mouse Pluripotent Stem Cell Transcription Factor Analysis Kit	560585
BD Stemflow™ Human Induced Pluripotent Stem Cell Analysis and Sorting Kit	562626
BD Stemflow™ Human Definitive and Pancreatic Endoderm Analysis Kit	562496
BD Stemflow™ Human Neural Lineage Analysis Kit	561526

Class 1 Laser Product.

For Research Use Only. Not for use in diagnostic or therapeutic procedures.

Alexa Fluor® is a registered trademark of Life Technologies Corporation.

Cy™ is a trademark of GE Healthcare. Cy™ dyes are subject to proprietary rights of GE Healthcare and Carnegie Mellon University, and are made and sold under license from GE Healthcare only for research and in vitro diagnostic use. Any other use requires a commercial sublicense from GE Healthcare, 800 Centennial Avenue, Piscataway, NJ 08855-1327, USA.

BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2013 BD

23-15881-00



BD Biosciences
bdbiosciences.com