Technical Data Sheet

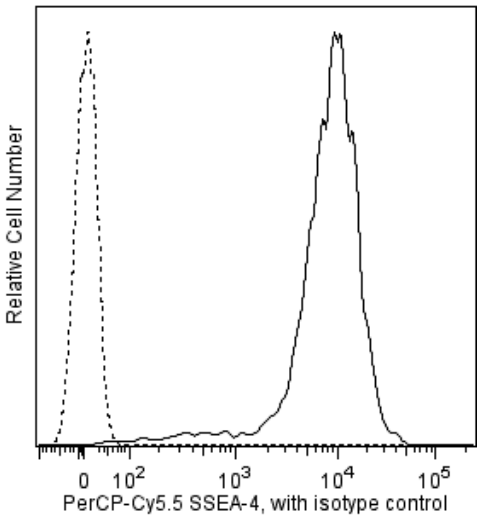
PerCP-Cy™5.5 Mouse Anti-SSEA-4

Product Information

Material Number:	**561565**
Alternate Name:	Stage-Specific Embryonic Antigen-4
Size:	50 tests
Vol. per Test:	5 µl
Clone:	MC813-70
Immunogen:	Human Teratocarcinoma Cell Line
Isotype:	Mouse (BALB/c) IgG3, κ
Reactivity:	QC Testing: Human Reported Reactivity: Mouse
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The MC813-70 monoclonal antibody reacts with **S**tage-**S**pecific **E**mbryonic **A**ntigen-**4** (SSEA-4), a carbohydrate epitope on the major ganglioside, but not the neutral glycolipid, of human teratocarcinoma cells. As its name implies, the expression of SSEA-4 is stage-specific and can be used to characterize embryonic cells and monitor their differentiation. However, its expression pattern differs in the human and mouse. In the human, SSEA-4 is found on teratocarcinoma (embryonal carcinoma or EC), embryonic inner cell mass (ICM), embryonic stem (ES) cells, and the K562 erythromyeloid leukeumia cell line. As human stem cells undergo differentiation, SSEA-4 expression is lost. In the mouse, SSEA-4 is found on oocytes and early cleavage-stage embryos, and primitive ectoderm, but not on EC, ICM, or ES cells. In some cases, SSEA-4 expression appears upon differentiation of mouse EC or ES cells.



Flow cytometric analysis of PerCP-Cy™5.5 Mouse Anti-SSEA-4 on human embryonic stem cells. *H9 human embryonic stem (ES) cells (WiCell, Madison, WI) passage 37 grown in mTESR™1 media (StemCell Technologies) on BD Matrigel™ hESC-qualified Matrix (Cat. No. 354277) were harvested and stained with PerCP-Cy™5.5 Mouse Anti-SSEA-4 (solid line) or a PerCP-Cy™5.5 mouse IgG3, κ isotype control (Clone J606, Cat. No.561572, dashed line). Flow cytometry was performed on a BD™ LSR II flow cytometry system.*

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.
The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
The antibody was conjugated with PerCP-Cy5.5 under optimum conditions, and unconjugated antibody and free PerCP-Cy5.5 were removed. Storage of PerCP-Cy5.5 conjugates in unoptimized diluent is not recommended and may result in loss of signal intensity.

Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
561572	PerCP-Cy™5.5 Mouse IgG3, κ Isotype Control	0.1 mg	J606
354277	BD Matrigel™ hESC-qualified Matrix	5.0 ml	(none)

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Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
5. Please observe the following precautions: Absorption of visible light can significantly alter the energy transfer occurring in any tandem fluorochrome conjugate; therefore, we recommend that special precautions be taken (such as wrapping vials, tubes, or racks in aluminum foil) to prevent exposure of conjugated reagents, including cells stained with those reagents, to room illumination.
6. PerCP-Cy5.5 is optimized for use with a single argon ion laser emitting 488-nm light. Because of the broad absorption spectrum of the tandem fluorochrome, extra care must be taken when using dual-laser cytometers, which may directly excite both PerCP and Cy5.5™. We recommend the use of cross-beam compensation during data acquisition or software compensation during data analysis.
7. PerCP-Cy5.5–labelled antibodies can be used with FITC- and R-PE–labelled reagents in single-laser flow cytometers with no significant spectral overlap of PerCP-Cy5.5, FITC, and R-PE fluorescence.
8. This product is subject to proprietary rights of Amersham Biosciences Corp. and Carnegie Mellon University and made and sold under license from Amersham Biosciences Corp. This product is licensed for sale only for research. It is not licensed for any other use. If you require a commercial license to use this product and do not have one return this material, unopened to BD Biosciences, 10975 Torreyana Rd, San Diego, CA 92121 and any money paid for the material will be refunded.
9. Cy is a trademark of Amersham Biosciences Limited. This conjugated product is sold under license to the following patents: US Patent Nos. 5,486,616; 5,569,587; 5,569,766; 5,627,027.
10. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
11. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Andrews PW, Bronson DL, Benham F, Strickland S, Knowles BB. A comparative study of eight cell lines derived from human testicular teratocarcinoma. *Int J Cancer.* 1980; 26(3):269-280. (Clone-specific)

Draper JS, Pigott C, Thomson JA, Andrews PW. Surface antigens of human embryonic stem cells: changes upon differentiation in culture. *J Anat.* 2002; 200:249-258. (Clone-specific)

Henderson JK, Draper JS, Baillie HS, et al. Preimplantation human embryos and embryonic stem cells show comparable expression of stage-specific embryonic antigens. *Stem Cells.* 2002; 20:329-337. (Clone-specific)

Josephson R, Ording CJ, Liu Y, et al. Qualification of embryonal carcinoma 2102Ep as a reference for human embryonic stem cell research. *Stem Cells.* 2007; 25:437-446. (Clone-specific)

Kannagi R, Cochran NA, Ishigami F, et al. Stage-specific embryonic antigens (SSEA-3 and -4) are epitopes of a unique globo-series ganglioside isolated from human teratocarcinoma cells. *EMBO J.* 1983; 2(12):2355-2361. (Immunogen)

Son YS, Park JH, Kang YK, et al. Heat shock 70-kDa protein 8 isoform 1 is expressed on the surface of human embryonic stem cells and downregulated upon differentiation. *Stem Cells.* 2005; 23:1502-1513. (Clone-specific)

Thomson JA, Itskovitz-Eldor J, Shapiro SS, et al. Embryonic stem cell lines derived from human blastocysts. *Science.* 1998; 282:1145-1147. (Clone-specific)

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