Technical Data Sheet

PE-CF594 Rat Anti-SSEA-3

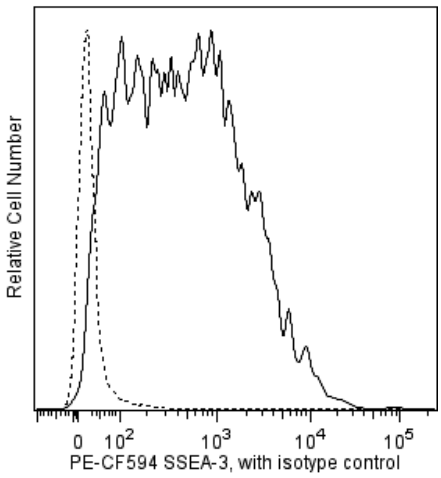
Product Information

Material Number:	**562486**
Size:	50 tests
Vol. per Test:	5 µl
Clone:	MC-631 (also known as MC631)
Immunogen:	Mouse Embryos
Isotype:	Rat (F344) IgM
Reactivity:	QC Testing: Human
Storage Buffer:	Aqueous buffered solution containing BSA, protein stabilizer, and ≤0.09% sodium azide.

Description

The MC-631 monoclonal antibody reacts with **S**tage-**S**pecific **E**mbryonic **A**ntigen-**3** (SSEA-3), a carbohydrate epitope on the major ganglioside, but not the neutral glycolipid, of mouse embryos and human teratocarcinoma cells. As its name implies, the expression of SSEA-3 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-3 is found on teratocarcinoma (embryonal carcinoma or EC), embryonic inner cell mass (ICM), and embryonic stem (ES) cells, and erythrocytes. As human stem cells undergo differentiation, SSEA-3 expression diminishes. In the mouse, SSEA-3 is found on oocytes, ova, zygotes, early cleavage-stage embryos, early blastocysts, ICM, primitive endoderm, and adult kidney, but not on EC or ES cells.

This antibody is conjugated to BD Horizon™ PE-CF594, which has been developed exclusively by BD Biosciences as a better alternative to PE-Texas Red®. PE-CF594 excites and emits at similar wavelengths to PE-Texas Red® yet exhibits improved brightness and spectral characteristics. Due to PE having maximal absorption peaks at 496 nm and 564 nm, PE-CF594 can be excited by the blue (488-nm), green (532-nm) and yellow-green (561-nm) lasers and can be detected with the same filter set as PE-Texas Red® (eg 610/20-nm filter).



Flow cytometric analysis of SSEA-3 expression of human embryonic stem (ES) cells. *H9 human ES cells (WiCell, Madison, WI) passage 41 grown on irradiated mouse embryonic fibroblasts were harvested with Accutase™ (Cat. No. 561527) and stained with BD Horizon™ PE-CF594 anti-SSEA-3 (solid line) or a BD Horizon™ PE-CF594 rat IgM, κ isotype control (Clone R4-22, Cat. No.562489, dashed line). Flow cytometry was performed on a BD™ LSRII 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 BD Horizon™ PE-CF594 under optimum conditions, and unconjugated antibody and free PE-CF594 were removed.

Application Notes

Application

Flow cytometry	Routinely Tested

BD Biosciences

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Suggested Companion Products

Catalog Number	Name	Size	Clone
561527	Accutase™ Cell Detachment Solution	100 ml	(none)
562489	PE-CF594 Rat IgM, κ Isotype Control	100 µg	R4-22

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. 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.
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. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
5. Texas Red is a registered trademark of Molecular Probes, Inc., Eugene, OR.
6. CF™ is a trademark of Biotium, Inc.
7. When excited by the yellow-green (561-nm) laser, the fluorescence may be brighter than when excited by the blue (488-nm) laser.
8. This product is provided under an Agreement between BIOTIUM and BD Biosciences. The manufacture, use, sale, offer for sale, or import of this product is subject to one or more patents or pending applications owned or licensed by Biotium, Inc. This product, and only in the amount purchased by buyer, may be used solely for buyer's own internal research, in a manner consistent with the accompanying product literature. No other right to use, sell or otherwise transfer (a) this product, or (b) its components is hereby granted expressly, by implication or by estoppel. This product is for research use only. Diagnostic uses require a separate license from Biotium, Inc. For information on purchasing a license to this product including for purposes other than research, contact Biotium, Inc., 3159 Corporate Place, Hayward, CA 94545, Tel: (510) 265-1027. Fax: (510) 265-1352. Email: btinfo@biotium.com.
9. Because of the broad absorption spectrum of the tandem fluorochrome, extra care must be taken when using multi-laser cytometers, which may directly excite both PE and CF™594.
10. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
11. An isotype control should be used at the same concentration as the antibody of interest.
12. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

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)

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. (Clone-specific)

Shevinsky LH, Knowles BB, Damjanov I, Solter D. Monoclonal antibody to murine embryos defines a stage-specific embryonic antigen expressed on mouse embryos and human teratocarcinoma cells. *Cell.* 1982; 30:697-705. (Immunogen)

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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