Technical Data Sheet

PE-CF594 Mouse Anti-SSEA-1

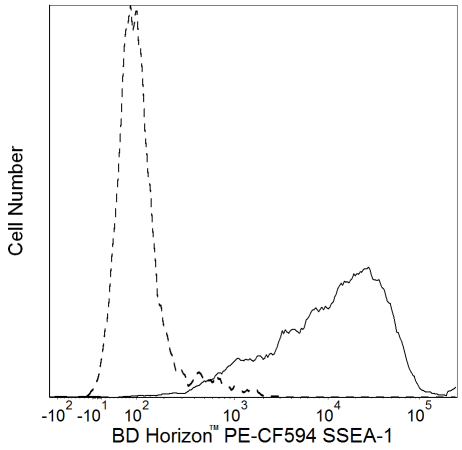
Product Information

Material Number:	**562485**
Alternate Name:	3-FAL, X-hapten, LeX antigen, CD15
Size:	50 tests
Vol. per Test:	5 µl
Clone:	MC480
Immunogen:	Mouse Teratocarcinoma Cell Line
Isotype:	Mouse (BALB/c) IgM, κ
Reactivity:	QC Testing: Mouse Reported: Human
Storage Buffer:	Aqueous buffered solution containing BSA, protein stabilizer, and ≤0.09% sodium azide.

Description

The MC480 monoclonal antibody reacts with *S*tage-*S*pecific *E*mbryonic *A*ntigen-1 (SSEA-1), which is a terminal carbohydrate epitope (3-fucosyl-N-acetyllactosamine or 3-FAL) on glycoproteins and lactose series glycolipids. SSEA-1 is related to Lewis blood group antigens and is found in a variety of embryonic and adult tissues and cancers. As its name implies, the expression of SSEA-1 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-1 is not found on embryonic stem (ES) cells, embryonic inner cell mass (ICM), or teratocarcinoma (embryonal carcinoma or EC) cells. As human EC and ES cells undergo differentiation, SSEA-1 expression is upregulated. In the adult, the same epitope is expressed as CD15 on granulocytes and monocytes, but not lymphocytes or dendritic cells. In the mouse, SSEA-1 is found on EC, ES, and primordial germ cells, 8-cell to blastocyst embryos, ICM, and on subpopulations of cells in the adult central nervous system, including stem cells. In contrast to the human, SSEA-1 expression is reduced as mouse EC and ES cells undergo differentiation.

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 BD Horizon™ PE-CF594 anti-SSEA-1 on mouse embryonic stem cells.
ES-E14TG2a cells (ATCC, CRL-1821TM) mouse embryonic stem (ES) cells were harvested and stained with BD Horizon™ PE-CF594 anti-SSEA-1 (solid line). Dashed line represents isotype control staining (Cat. No.562567) Flow cytometry was performed on a BD LSRFortessa™ 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.

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Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
562567	PE-CF594 Mouse IgM, κ Isotype Control	0.1 mg	G155-228

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 refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. 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.
4. 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.
5. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
6. Texas Red is a registered trademark of Molecular Probes, Inc., Eugene, OR.
7. CF™ is a trademark of Biotium, Inc.
8. When excited by the yellow-green (561-nm) laser, the fluorescence may be brighter than when excited by the blue (488-nm) laser.
9. 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.
10. 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.
11. All other brands are trademarks of their respective owners.
12. An isotype control should be used at the same concentration as the antibody of interest.
13. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Capela A, Temple S. LeX/ssea-1 is expressed by adult mouse CNS stem cells, identifying them as nonependymal. *Neuron.* 2002; 35:865-875. (Biology)

Childs RA, Pennington J, Uemura K, et al. High-molecular-weight glycoproteins are the major carriers of the carbohydrate differentiation antigens I, i and SSEA-1 of mouse teratocarcinoma cells. *Biochem J.* 1983; 215:491-503. (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)

Kannagi R, Nudelman E, Levery SB, Hakomori S. A series of human erythrocyte glycosphingolipids reacting to the monoclonal antibody directed to a developmentally regulated antigen, SSEA-1. *J Biol Chem.* 1982; 257(24):14865-14874. (Clone-specific)

Solter D, Knowles BB. Monoclonal antibody defining a stage-specific mouse embryonic antigen (SSEA-1). *Proc Natl Acad Sci U S A.* 1978; 75(11):5565-5569. (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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