

Technical Data Sheet

FITC Rat Anti-Mouse Ly-6A/E

Product Information

Material Number:	561077
Alternate Name:	Sca-1
Size:	25 µg
Concentration:	0.5 mg/ml
Clone:	E13-161.7
Immunogen:	BALB/c mouse-derived "pre-T" cell hybridoma
Isotype:	Rat (WI) IgG2a, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The E13-161.7 antibody reacts with Ly-6A.2 and Ly-6E.1, which are allelic members of the Ly-6 multigene family. Sca1 (Ly-6A/E), a phosphatidylinositol-anchored protein of about 18 kDa, is expressed on the multipotent hematopoietic stem cell (HSC) in mice with both Ly-6 haplotypes. Sca-1⁺ HSC are found in the adult bone marrow and fetal liver, but not in the early embryo yolk sac or intraembryonic hematopoietic sites, and can be mobilized to the peripheral blood and spleen in the adult. In mice expressing the Ly-6.2 haplotype (e.g., AKR, C57BL, C57BR, C57L, C58, DBA/2, PL, SJL, SWR, 129), Ly-6A/E is also expressed on distinct subpopulations of bone marrow and peripheral B lymphocytes, myeloid cells, and thymic and peripheral T lymphocytes, on the earliest intrathymic T-cell precursor population, and in several non-hematopoietic tissues. Strains with the Ly-6.1 haplotype (e.g., A, BALB/c, CBA, C3H/He, DBA/1, NZB) have few Ly-6A/E⁺ resting peripheral lymphocytes, whereas activation of T cells from mice of both Ly-6 haplotypes leads to strong expression of the Sca-1 antigen. Studies with the D7 antibody (Cat. No. 557403) have demonstrated that Ly-6A/E may be involved in the regulation of B and T lymphocyte responses, and it appears to be required for T-cell receptor-mediated T-cell activation. Purified E13-161.7 mAb can block binding of FITC-conjugated D7 antibody (anti-Ly-6A/E, Cat. No. 557405) to mouse splenocytes, but purified mAb D7 (Cat. No. 557403) is unable to block binding of FITC-conjugated E13-161.7 antibody (Cat. No. 553335). Anti-Ly-6A/E (Sca-1) mAb may be used in combination with the Mouse Lineage Panel (Cat. No. 559971) to identify HSC.

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with FITC under optimum conditions, and unreacted FITC was removed.

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

Application Notes

Application

Flow cytometry	Routinely Tested
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Suggested Companion Products

Catalog Number	Name	Size	Clone
557403	Purified Rat Anti-Mouse Ly-6A/E	0.1 mg	D7
557405	FITC Rat Anti-Mouse Ly-6A/E	0.1 mg	D7
559971	Biotin Mouse Lineage Panel	1000 tests	(none)
553929	FITC Rat IgG2a, κ Isotype Control	0.25 mg	R35-95

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
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.

References

Aihara Y, Buhring HJ, Aihara M, Klein J. An attempt to produce "pre-T" cell hybridomas and to identify their antigens. *Eur J Immunol.* 1986; 16(11):1391-1399. (Immunogen)
 Kawamoto H, Ohmura K, Katsura Y. Direct evidence for the commitment of hematopoietic stem cells to T, B and myeloid lineages in murine fetal liver. *Int Immunol.* 1997; 9(7):1011-1019. (Biology)

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Morrison SJ, Wright DE, Weissman IL. Cyclophosphamide/granulocyte colony-stimulating factor induces hematopoietic stem cells to proliferate prior to mobilization. *Proc Natl Acad Sci U S A.* 1997; 94(5):1908-1913. (Biology)

Osawa M, Nakamura K, Nishi N, et al. In vivo self-renewal of c-Kit+ Sca-1+ Lin(low/-) hemopoietic stem cells. *J Immunol.* 1996; 156(9):3207-3214. (Biology)