Technical Data Sheet

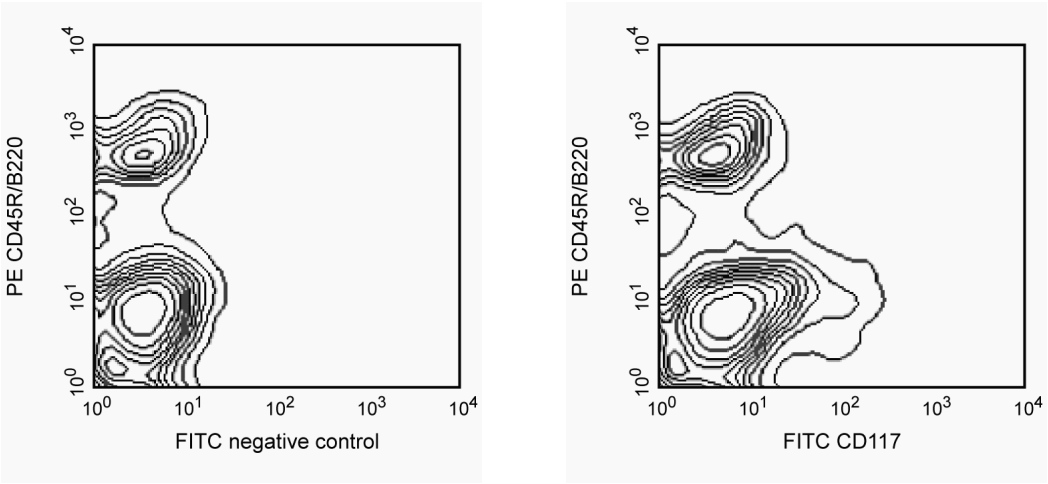
FITC Rat Anti-Mouse CD117

Product Information

Material Number:	**561680**
Alternate Name:	c-Kit
Size:	50 µg
Concentration:	0.5 mg/ml
Clone:	2B8
Immunogen:	Mouse Bone Marrow Mast Cells
Isotype:	Rat (WI) IgG2b, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing protein stabilizer and ≤0.09% sodium azide.

Description

The 2B8 antibody reacts with CD117 (c-Kit), a transmembrane tyrosine-kinase receptor which is encoded by the *Kit* gene (formerly dominant white spotting, *W*). The c-Kit ligand (also known as steel factor, stem cell factor, and mast cell growth factor) encoded by the Kit1 gene (formerly steel, SI), is a co-mitogen for hematopoietic stem cells, myeloerythroid progenitors and a mast-cell differentiation factor. The KitW and Kit1SI mutant alleles have similar pleiotropic effects on the development of melanocytes, germ cells, and the hematopoietic system. In the adult bone marrow, CD117 is expressed on hematopoietic progenitor cells, including CD90 (Thy-1) low, TER-119-, CD45R/B220-, CD11b (Mac-1)-, Ly-6G (Gr-1)-, CD4-, CD8-, and Sca-1 (Ly-6A/E)+ multipotent hemotopoietic stem cells, progenitors committed to myeliod and/or erythroid lineages, and precursors of B and T lymphocytes. This widespread expression of CD117 in hematopoietic precursors is consistent with the participation of c-Kit and its ligand in the regulation of several hematopoietic lineages. Intrathymic expression of c-Kit and c-Kit ligand suggest that CD117 is also involved in the regulation of some events during the development of T lymphocytes. CD117 is also expressed by mast cells and by dendritic cells found in the periarteriolar lymphocytoc sheaths (T-cell areas) of splenic white pulp. The mAb 2B8 reportedly does not block the action of c-Kit. This clone 2B8 had been reported that there was cross-reactivity with rat.



Two-color analysis of the expression of CD117 on mouse bone marrow cells. *A single-cell suspension of C57BL/6 bone marrow was simultaneously stained with PE Rat Anti-Mouse CD45R/B220 (Cat. No. 553089; both panels) and FITC Rat Anti-Mouse CD117 (right panel) monoclonal antibodies. Flow cytometry was performed on a BD FACScan™ 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 FITC under optimum conditions, and unreacted FITC was removed.

Application Notes

Application

Flow cytometry	Routinely Tested

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	888.268.5430	32.53.720.550	0120.8555.90	65.6861.0633	0800.771.7157

For country-specific contact information, visit **bdbiosciences.com/how_to_order/**

Suggested Companion Products

Catalog Number	Name	Size	Clone
553988	FITC Rat IgG2b, κ Isotype Control	0.25 mg	A95-1
554656	Stain Buffer (FBS)	500 ml	(none)
553089	PE Rat Anti-Mouse CD45R/B220	0.1 mg	RA3-6B2
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2

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.
4. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
5. An isotype control should be used at the same concentration as the antibody of interest.

References

Anderson DM, Lyman SD, Baird A, et al. Molecular cloning of mast cell growth factor, a hematopoietin that is active in both membrane bound and soluble forms. *Cell.* 1990; 63(1):235-243. (Biology)

Austen KF, Boyce JA. Mast cell lineage development and phenotypic regulation. *Leuk Res.* 2001; 25(7):511-518. (Biology)

Domen J, Weissman IL. Hematopoietic stem cells need two signals to prevent apoptosis; BCL-2 can provide one of these, Kitl/c-Kit signaling the other. *J Exp Med.* 2000; 192(12):1707-1718. (Biology)

Fadini GP, Sartore S, Schiavon M, Albiero M, Baesso I, Cabrelle A, Agostini C, Avogaro A. Diabetes impairs progenitor cell mobilisation after hindlimb ischaemia-reperfusion injury in rats. *Diabetologia.* 2006; 49(12):3075-3084. (Clone-specific)

Godfrey DI, Zlotnik A. Control points in early T-cell development. *Immunol Today.* 1993; 14(11):547-553. (Biology)

Huang E, Nocka K, Beier DR, et al. The hematopoietic growth factor KL is encoded by the Sl locus and is the ligand of the c-kit receptor, the gene product of the W locus. *Cell.* 1990; 63(1):225-233. (Biology)

Ikuta K, Weissman IL. Evidence that hematopoietic stem cells express mouse c-kit but do not depend on steel factor for their generation. *Proc Natl Acad Sci U S A.* 1992; 89(4):1502-1506. (Immunogen: Flow cytometry, Immunoprecipitation)

Kondo M, Weissman IL, Akashi K. Identification of clonogenic common lymphoid progenitors in mouse bone marrow. *Cell.* 1997; 91(5):661-672. (Biology)

Lian Z, Toki J, Yu C, et al. Intrathymically injected hemopoietic stem cells can differentiate into all lineage cells in the thymus: differences between c-kit+ cells and c-kit < low cells. *Stem Cells.* 1997; 15(6):430-436. (Biology)

Mirmonsef P, Shelburne CP, Fitzhugh Yeatman C 2nd, Chong HJ, Ryan JJ. Inhibition of Kit expression by IL-4 and IL-10 in murine mast cells: role of STAT6 and phosphatidylinositol 3'-kinase. *J Immunol.* 1999; 163(5):2530-2539. (Biology)

Ogawa M, Matsuzaki Y, Nishikawa S, et al. Expression and function of c-kit in hemopoietic progenitor cells. *J Exp Med.* 1991; 174(1):63-71. (Biology)

Pulendran B, Lingappa J, Kennedy MK, et al. Developmental pathways of dendritic cells in vivo: distinct function, phenotype, and localization of dendritic cell subsets in FLT3 ligand-treated mice. *J Immunol.* 1997; 159(5):2222-2231. (Biology)

Rodewald HR, Kretzschmar K, Swat W, Takeda S. Intrathymically expressed c-kit ligand (stem cell factor) is a major factor driving expansion of very immature thymocytes in vivo. *Immunity.* 1995; 3(3):313-319. (Biology)

Valent P. The riddle of the mast cell: kit(CD117)-ligand as the missing link?. *Immunol Today.* 1994; 15(3):111-114. (Biology)

Zsebo KM, Wypych J, McNiece IK, et al. Identification, purification, and biological characterization of hematopoietic stem cell factor from buffalo rat liver--conditioned medium. *Cell.* 1990; 63(1):195-201. (Biology)