Technical Data Sheet

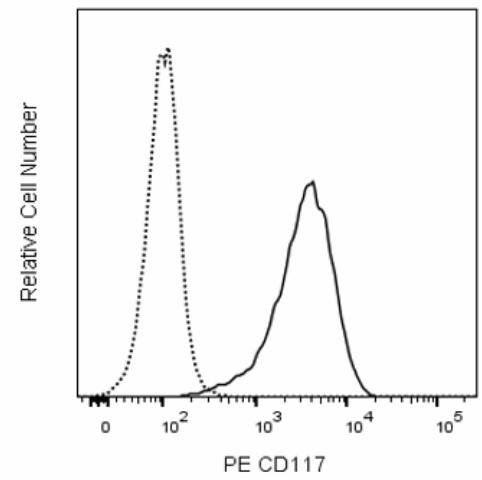
PE Mouse Anti-Human CD117 (c-Kit)

Product Information

Material Number:	**567132**
Alternate Name:	KIT; c-Kit; SCFR; PBT; Mast/stem cell growth factor receptor
Size:	100 Tests
Vol. per Test:	5 µl
Clone:	104D2
Immunogen:	Megakaryoctic cell line MOLM-1
Isotype:	Mouse (BALB/c) IgG1
Reactivity:	QC Testing: Human
Workshop:	VI C30
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The 104D2 monoclonal antibody specifically binds to human CD117, the receptor for stem cell factor (SCF). It selectively recognizes NIH-3T3 cells transfected with human c-kit, the gene that codes for SCF-R. The 104D2 antibody does not block the epitope that binds SCF. In the bone marrow of humans and mice, SCF is expressed primarily on hematopoietic progenitor cells. Lack of functional SCF or deficient SCF-R caused by mutations in the Sl and W loci, respectively, can result in severe anemia and a decrease in the number of primitive progenitor cells in mice. Human hematopoietic progenitor cells can be recognized by their surface expression of CD34. This cell population constitutes a small subset (1% to 5%) of bone marrow cells. CD34+ cells contain a small subpopulation of primitive/non-committed progenitors, with the remaining fraction being cells committed to the various hematopoietic lineages. SCF alone induces extensive proliferation of erythroid-committed progenitor cells (CD34lo CD71hi CD64-). On primitive (CD34hi CD38lo CD50+) and granulo-monocytic (CD34+ CD64+) progenitor cells, SCF synergistically enhances the effects of other cytokines, the strongest of which are on the primitive progenitor cells. In addition, SCF promotes survival of primitive progenitors in the absence of proliferation. The receptor is highly expressed at similar levels on all of the three mentioned CD34+ cell subsets, whereas B-lymphoid committed progenitor cells (CD34+ CD19+) express low levels of SCF-R. Among CD34- bone marrow cells, only a small number of cells (mostly erythroid) express the receptor.



Flow cytometric analysis of CD117 expression on human TF-1 Cells. *Cells from the human TF-1 (Human erythroleukemia, ATCC Cat. No. CRL-2003) cell line were stained with either PE Mouse IgG1, κ Isotype Control (Cat. No. 554680; dashed line histogram) or PE Mouse Anti-Human CD117 antibody (Cat. No. 567129/567132; solid line histogram). BD Via-Probe™ Cell Viability 7-AAD Solution (Cat. No. 555815/555816) was added to cells right before analysis. The fluorescence histogram showing CD117 expression (or Ig Isotype control staining) was derived from gated events with the forward and side light-scatter characteristics of viable (7-AAD-negative) TF-1 cells. Flow cytometry and data analysis were performed using a BD LSRFortessa™ Cell Analyzer System and FlowJo™ software.*

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 R-PE under optimum conditions, and unconjugated antibody and free PE were removed.

Application Notes

Application

Flow cytometry	Routinely Tested

BD Biosciences

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Recommended Assay Procedure:

BD™ CompBeads can be used as surrogates to assess fluorescence spillover (Compensation). When fluorochrome conjugated antibodies are bound to CompBeads, they have spectral properties very similar to cells. However, for some fluorochromes there can be small differences in spectral emissions compared to cells, resulting in spillover values that differ when compared to biological controls. It is strongly recommended that when using a reagent for the first time, users compare the spillover on cell and CompBead to ensure that BD Comp beads are appropriate for your specific cellular application.

Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 mL	(none)
554657	Stain Buffer (BSA)	500 mL	(none)
567129	PE Mouse Anti-Human CD117 (c-Kit)	25 Tests	104D2
554680	PE Mouse IgG1, κ Isotype Control	0.1 mg	MOPC-21
555815	Cell Viability Solution	500 Tests	(none)
555816	Cell Viability Solution	100 Tests	(none)

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. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
6. Please refer to http://regdocs.bd.com to access safety data sheets (SDS).
7. Please refer to www.bdbiosciences.com/us/s/resources for technical protocols.

References

Ashman LK, Buhring HJ, Aylett GW, Broudy VC, Muller C. Epitope mapping and functional studies with three monoclonal antibodies to the c-kit receptor tyrosine kinase, YB5.B8, 17F11, and SR-1. *J Cell Physiol.* 1994; 158(3):545-554. (Biology)

Ashman LK, Cambareri A, Nguyen L, Bühring H-J. CD117 workshop panel report. In: Kishimoto T. Tadamitsu Kishimoto .. et al., ed. *Leucocyte typing VI : white cell differentiation antigens : proceedings of the sixth international workshop and conference held in Kobe, Japan, 10-14 November 1996.* New York: Garland Pub.; 1997:816-818. (Clone-specific: Flow cytometry)

Rappold I, Ziegler BL, Kohler I, et al. Functional and phenotypic characterization of cord blood and bone marrow subsets expressing FLT 3 (CD135) receptor tyrosine kinase. *Blood.* 1997; 90(1):111-125. (Immunogen: Flow cytometry)