Technical Data Sheet

BV650 Mouse Anti-Human CD117

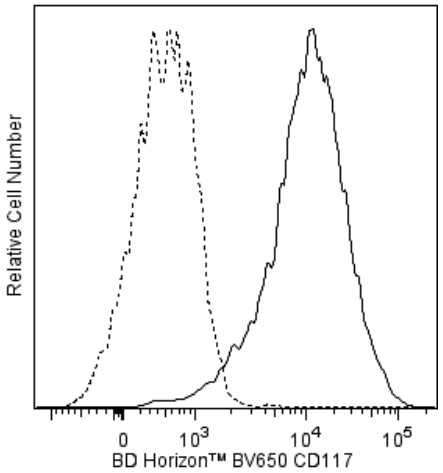
Product Information

Material Number:	**563859**
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.

The antibody was conjugated to BD Horizon™ BV650 which is part of the BD Horizon™ Brilliant Violet™ family of dyes. This dye is a tandem fluorochrome of BD Horizon™ BV421 with an Ex Max of 405-nm and an acceptor dye with an Em Max at 650-nm. BD Horizon™ BV650 can be excited by the violet laser and detected in a filter used to detect APC-like dyes (eg, 660/20-nm filter). Due to the excitation and emission characteristics of the acceptor dye, there will be spillover into the APC and Alexa Fluor® 700 detectors. However, the spillover can be corrected through compensation as with any other dye combination.



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 BD Horizon™ BV650 Mouse Anti-Human CD117 antibody (Cat. No. 563859; solid line histogram) or BD Horizon™ BV650 Mouse IgG1, κ Isotype Control (Cat. No. 563231; dashed line histogram). The fluorescence histograms were derived from events with the forward and side light-scatter characteristics of viable cells. Flow cytometry was performed using a BD™ LSR II 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™ BV650 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV650 were removed.

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Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 ml	(none)
563231	BV650 Mouse IgG1, k Isotype Control	50 µg	X40

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. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
6. Brilliant Violet™ 650 is a trademark of Sirigen.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
8. Please refer to www.bdbiosciences.com/pharmingen/protocols 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, Kikutani H, von dem Borne AEGK, et al, ed. *Leucocyte Typing VI: White Cell Differentiation Antigens.* New York, NY: Garland Publishing, Inc; 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 FLT3 (CD135) receptor tyrosine kinase. *Blood.* 1997; 90(1):111-125. (Immunogen: Flow cytometry)

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