

## Technical Data Sheet

## BV605 Rat Anti-Mouse CD117

## Product Information

<b>Material Number:</b>	<b>563146</b>
<b>Alternate Name:</b>	c-KIT; W; SCFR; Stem Cell Factor Receptor; Sl; Steel Factor Receptor; Ssm
<b>Size:</b>	50 µg
<b>Concentration:</b>	0.2 mg/ml
<b>Clone:</b>	2B8
<b>Immunogen:</b>	Mouse Bone Marrow Mast Cells
<b>Isotype:</b>	Rat (W) IgG2b, κ
<b>Reactivity:</b>	QC Testing: Mouse
<b>Storage Buffer:</b>	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

## Description

The 2B8 monoclonal antibody specifically binds to CD117 (c-Kit), a transmembrane tyrosine-kinase receptor that 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 *Kitl* gene (formerly steel, *Sl*), is a co-mitogen for hematopoietic stem cells, myeloerythroid progenitors and a mast-cell differentiation factor. The KitW and Kit1Sl 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 myeloid 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 periaarteriolar 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.

This antibody is conjugated to BD Horizon BV605 which is part of the BD Horizon Brilliant™ Violet family of dyes. With an Ex Max of 407-nm and Em Max of 602-nm, BD Horizon BV605 can be excited by a violet laser and detected with a standard 610/20-nm filter set. BD Horizon BV605 is a tandem fluorochrome of BD Horizon BV421 and an acceptor dye with an Em max at 605-nm. Due to the excitation of the acceptor dye by the green (532 nm) and yellow-green (561 nm) lasers, there will be significant spillover into the PE and BD Horizon PE-CF594 detectors off the green or yellow-green lasers. BD Horizon BV605 conjugates are very bright, often exhibiting brightness equivalent to PE conjugates and can be used as a third color off of the violet laser.

For optimal and reproducible results, BD Horizon Brilliant Stain Buffer should be used anytime two or more BD Horizon Brilliant dyes are used in the same experiment. Fluorescent dye interactions may cause staining artifacts which may affect data interpretation. The BD Horizon Brilliant Stain Buffer was designed to minimize these interactions. More information can be found in the Technical Data Sheet of the BD Horizon Brilliant Stain Buffer (Cat. No. 563794).

## 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™ BV605 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV605 were removed.

## Application Notes

## Application

Flow cytometry	Routinely Tested
----------------	------------------

## Suggested Companion Products

Catalog Number	Name	Size	Clone
563145	BV605 Rat IgG2b, κ Isotype Control	50 µg	R35-38
554656	Stain Buffer (FBS)	500 mL	(none)
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2
553142	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.5 mg	2.4G2
553092	APC Rat Anti-Mouse CD45R/B220	0.1 mg	RA3-6B2
563794	Brilliant Stain Buffer	5 mL	(none)

## BD Biosciences

bdbiosciences.com

United States 877.232.8995 Canada 800.268.5430 Europe 32.2.400.98.95 Japan 0120.8555.90 Asia Pacific 65.6861.0633 Latin America/Caribbean 55.11.5185.9995

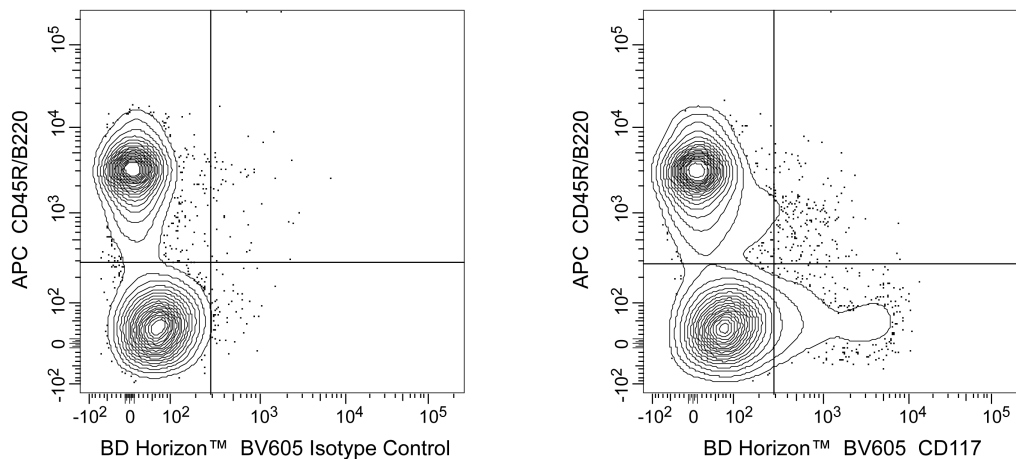
For country contact information, visit [bdbiosciences.com/contact](http://bdbiosciences.com/contact)

Conditions: The information disclosed herein is not to be construed as a recommendation to use the above product in violation of any patents. BD Biosciences will not be held responsible for patent infringement or other violations that may occur with the use of our products. Purchase does not include or carry any right to resell or transfer this product either as a stand-alone product or as a component of another product. Any use of this product other than the permitted use without the express written authorization of Becton, Dickinson and Company is strictly prohibited.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale.

Unless otherwise noted, BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2014 BD





**Multicolor flow cytometric analysis of CD117 expression on mouse bone marrow cells.** Bone marrow cells from BALB/c mice were preincubated with Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™) (Cat. no. 553141/553142). The cells were then stained with APC Rat Anti-Mouse CD45R/B220 (Cat. No. 553092/561880) and with either BD Horizon™ BV605 Rat IgG2b,  $\kappa$  Isotype Control (Cat. No. 563145, Left Panel) or with BD Horizon™ BV605 Rat Anti-Mouse CD117 antibody (Cat. No. 563146, Right Panel). Two-color flow cytometric contour plots showing the expression of CD117 (or Ig isotype control staining) versus CD45R/B220 were derived from gated events with the forward and side light-scatter characteristics of viable bone marrow cells. Flow cytometry was performed using a BD™ LSR II Flow Cytometer System.

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Although every effort is made to minimize the lot-to-lot variation in the efficiency of the fluorochrome energy transfer, differences in the residual emission from BD Horizon™ BV421 may be observed. Therefore, we recommend that individual compensation controls be performed for every BD Horizon™ BV605 conjugate.
4. 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.
5. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
6. 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.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at [www.bdbiosciences.com/colors](http://www.bdbiosciences.com/colors).
8. Please refer to [www.bdbiosciences.com/pharming/en/protocols](http://www.bdbiosciences.com/pharming/en/protocols) for technical protocols.
9. CF™ is a trademark of Biotium, Inc.

## 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: Flow cytometry)
- 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)
- 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)
- Rodewald HR, Kretschmar 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)

## BD Biosciences

[bdbiosciences.com](http://bdbiosciences.com)

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	800.268.5430	32.2.400.98.95	0120.8555.90	65.6861.0633	55.11.5185.9995

For country contact information, visit [bdbiosciences.com/contact](http://bdbiosciences.com/contact)

Conditions: The information disclosed herein is not to be construed as a recommendation to use the above product in violation of any patents. BD Biosciences will not be held responsible for patent infringement or other violations that may occur with the use of our products. Purchase does not include or carry any right to resell or transfer this product either as a stand-alone product or as a component of another product. Any use of this product other than the permitted use without the express written authorization of Becton, Dickinson and Company is strictly prohibited.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale.

Unless otherwise noted, BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2014 BD

