Technical Data Sheet

BV605 Rat Anti-Mouse CD138

Product Information

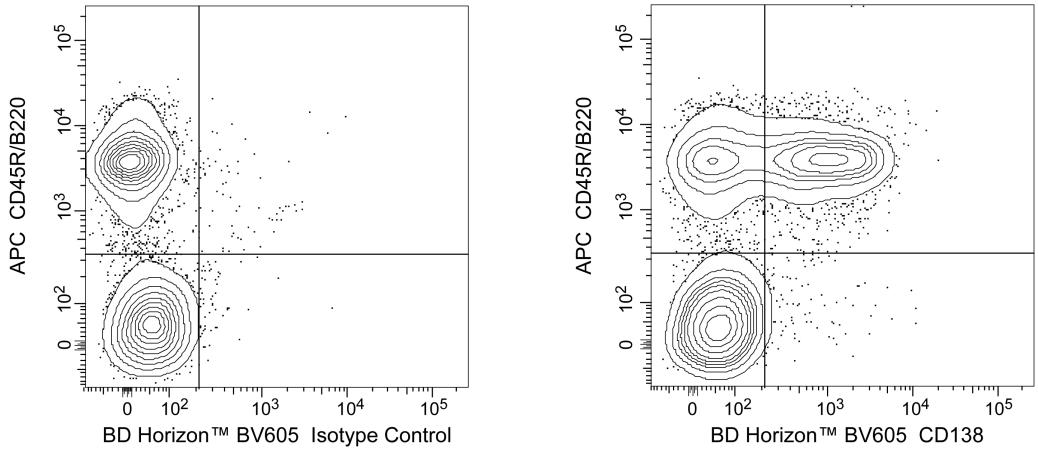
Material Number:	**563147**
Alternate Name:	SYND1; Syndecan-1; syn-1; Sdc1; Sstn; synstatin
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	281-2
Immunogen:	NAMRU mouse mammary gland epithelial cell line NMuMG
Isotype:	Rat (F344) IgG2a, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The 281-2 monoclonal antibody specifically binds to the core protein of CD138 (Syndecan-1), a cell-surface, integral membrane heparan sulfate- and chondroitin sulfate-containing proteoglycan that binds to interstitial extracellular matrix molecules. Syndecan-1 is predominantly expressed on epithelial cells, where its expression correlates with normal epithelial organization. It is also expressed on B lymphocytes at specific stages during their differentiation: precursor B cells in the bone marrow and antibody-secreting cells, including plasma cells, but not mature peripheral B cells. It is thus implicated in mediating B cell-matrix interactions. CD138 expression is also regulated during embryonic development, and the molecule shows a tissue- specific structural polymorphism resulting from different post-translational modifications. The 281-2 antibody may be used to detect the differently glycosylated forms, because it reacts with the core protein. Furthermore, the mAb detects the Syndecan-1 ectodomain which is cleaved from cell surfaces by a metalloproteinase.

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).



Multicolor flow cytometric analysis of CD138 expression on mouse bone marrow B lymphocytes. *Bone marrow cells from BALB/c mice were stained with APC Rat Anti-Mouse CD45R/B220 (Cat. No. 553092/561880) and with either BD Horizon 605 Rat IgG2a, κ Isotype Control (Cat. No. 563144, Left Panel) or with BD Horizon™ 605 Rat Anti-Mouse CD138 antibody (Cat. No. 563147, Right Panel). Two-color flow cytometric contour plots showing the expression of CD138 (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.*

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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
563144	BV605 Rat IgG2a, κ Isotype Control	50 µg	R35-95
554656	Stain Buffer (FBS)	500 mL	(none)
553092	APC Rat Anti-Mouse CD45R/B220	0.1 mg	RA3-6B2
561880	APC Rat Anti-Mouse CD45R/B220	25 µg	RA3-6B2
563794	Brilliant Stain Buffer	5 mL	(none)

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.
8. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
9. CF™ is a trademark of Biotium, Inc.

References

Bernfield M, Kokenyesi R, Kato M, et al. Biology of the syndecans: a family of transmembrane heparan sulfate proteoglycans. *Annu Rev Cell Biol.* 1992; 8:365-393. (Biology)

Driver DJ, McHeyzer-Williams LJ, Cool M, Stetson DB, McHeyzer-Williams MG. Development and maintenance of a B220- memory B cell compartment. *J Immunol.* 2001; 167(3):1393-1405. (Biology: Immunofluorescence)

Fitzgerald ML, Wang Z, Park PW, Murphy G, Bernfield M. Shedding of syndecan-1 and -4 ectodomains is regulated by multiple signaling pathways and mediated by a TIMP-3-sensitive metalloproteinase. *J Cell Biol.* 2000; 148(4):811-824. (Biology: Immunofluorescence)

Hayashi K, Hayashi M, Jalkanen M, Firestone JH, Trelstad RL, Bernfield M. Immunocytochemistry of cell surface heparan sulfate proteoglycan in mouse tissues. A light and electron microscopic study. *J Histochem Cytochem.* 1987; 35(10):1079-1088. (Clone-specific: Immunohistochemistry)

Jalkanen M, Nguyen H, Rapraeger A, Kurn N, Bernfield M. Heparan sulfate proteoglycans from mouse mammary epithelial cells: localization on the cell surface with a monoclonal antibody. *J Cell Biol.* 1985; 101(3):976-984. (Immunogen: Dot Blot, ELISA, Fluorescence microscopy, Immunofluorescence, Radioimmunoassay, Western blot)

Lalor PA, Nossal GJ, Sanderson RD, McHeyzer-Williams MG. Functional and molecular characterization of single, (4-hydroxy-3-nitrophenyl)acetyl (NP)-specific, IgG1+ B cells from antibody-secreting and memory B cell pathways in the C57BL/6 immune response to NP. *Eur J Immunol.* 1992; 22(11):3001-3011. (Biology: Western blot)

Sanderson RD, Lalor P, Bernfield M. B lymphocytes express and lose syndecan at specific stages of differentiation. *Cell Regul.* 1989; 1(1):27-35. (Biology: Western blot)

Sanderson RD, Sneed TB, Young LA, Sullivan GL, Lander AD. Adhesion of B lymphoid (MPC-11) cells to type I collagen is mediated by integral membrane proteoglycan, syndecan. *J Immunol.* 1992; 148(12):3902-3911. (Biology)

Saunders S, Jalkanen M, O'Farrell S, Bernfield M. Molecular cloning of syndecan, an integral membrane proteoglycan. *J Cell Biol.* 1989; 108(4):1547-1556. (Biology)

Wehrli N, Legler DF, Finke D. Changing responsiveness to chemokines allows medullary plasmablasts to leave lymph nodes. *Eur J Immunol.* 2001; 31(2):609-616. (Biology: Immunohistochemistry)

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