Technical Data Sheet

BUV737 Rat Anti-Mouse CD138

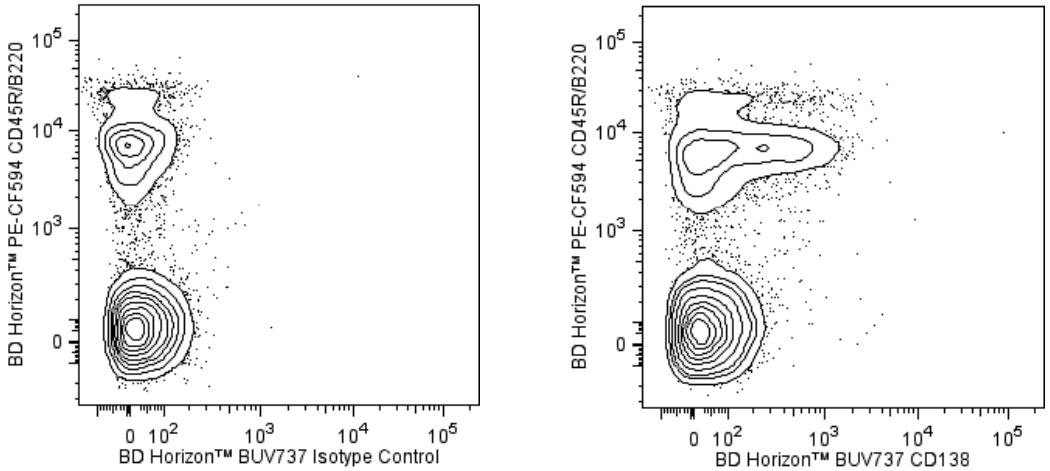
Product Information

Material Number:	**564430**
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 ≤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.

The antibody was conjugated to BD Horizon BUV737 which is part of the BD Horizon Brilliant™ Ultraviolet family of dyes. This dye is a tandem fluorochrome with an Ex Max near 350 nm and an Em Max near 737 nm. BD Horizon Brilliant BUV737 can be excited by the ultraviolet laser (355 nm) and detected with a 740/35 nm filter. Due to the excitation of the acceptor dye by the red laser line, there may be significant spillover into red laser detectors with filters in the 700-720 nm range.



Two-color flow cytometric analysis of CD138 expression on mouse bone marrow B lymphocytes. *Mouse bone marrow cells were preincubated with Purified Rat Anti-Mouse CD16/CD32 antibody (Mouse BD Fc Block™) (Cat. No. 553141/553142). The cells were then stained with BD Horizon™ PE-CF594 Rat Anti-Mouse CD45R/B220 antibody (Cat. No. 562290/562313) and either BD Horizon BUV737 Rat IgG2a, κ Isotype Control (Cat. No. 564294; Left Panel) or BD Horizon BUV737 Rat Anti-Mouse CD138 antibody (Cat. No. 564430; Right Panel). Two-color flow cytometric contour plots showing the correlated 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 cytometric analysis was performed using a BD™ LSR II Flow Cytometer 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 BUV737 under optimum conditions, and unconjugated antibody and free BD Horizon BUV737 were removed.

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Application Notes

Application

Flow cytometry	Routinely Tested

Recommended Assay Procedure:

BD™ CompBeads can be used as surrogates to assess fluorescence spillover (Compensation). When fluorochrome conjugated antibodies are bound to BD 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 cells and BD CompBead to ensure that BD CompBeads are appropriate for your specific cellular application.

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. 563794/566349) or the BD Horizon Brilliant Stain Buffer Plus (Cat. No. 566385).

Note: When using high concentrations of antibody, background binding of this dye to erythroid cell subsets (mature erythrocytes and precursors) has been observed. For researchers studying these cell populations, or in cases where light scatter gating does not adequately exclude these cells from the analysis, this background may be an important factor to consider when selecting reagents for panel(s).

Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 mL	(none)
554657	Stain Buffer (BSA)	500 mL	(none)
564294	BUV737 Rat IgG2a, κ Isotype Control (to be replaced with 612760)	50 µg	R35-95
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
563794	Brilliant Stain Buffer	100 Tests	(none)
562290	PE-CF594 Rat Anti-Mouse CD45R	0.1 mg	RA3-6B2
562313	PE-CF594 Rat Anti-Mouse CD45R/B220	25 µg	RA3-6B2
566349	Brilliant Stain Buffer	1000 Tests	(none)
566385	Brilliant Stain Buffer Plus	1000 Tests	(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. 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. CF™ is a trademark of Biotium, Inc.
5. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
6. BD Horizon Brilliant Ultraviolet 737 is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,227,187; 8,575,303; 8,354,239.
7. BD Horizon Brilliant Stain Buffer is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,575,303; 8,354,239.
8. Please refer to http://regdocs.bd.com to access safety data sheets (SDS).
9. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

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. (Clone-specific: Flow cytometry, Fluorescence microscopy, 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. (Clone-specific: Dot Blot, Fluorescence microscopy, 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. (Clone-specific: Flow cytometry, Immunoaffinity chromatography, Immunohistochemistry, 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. (Clone-specific: Immunoaffinity chromatography, Radioimmunoassay)

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. (Clone-specific)

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)