Technical Data Sheet

BV421 Rat anti-Mouse CD150

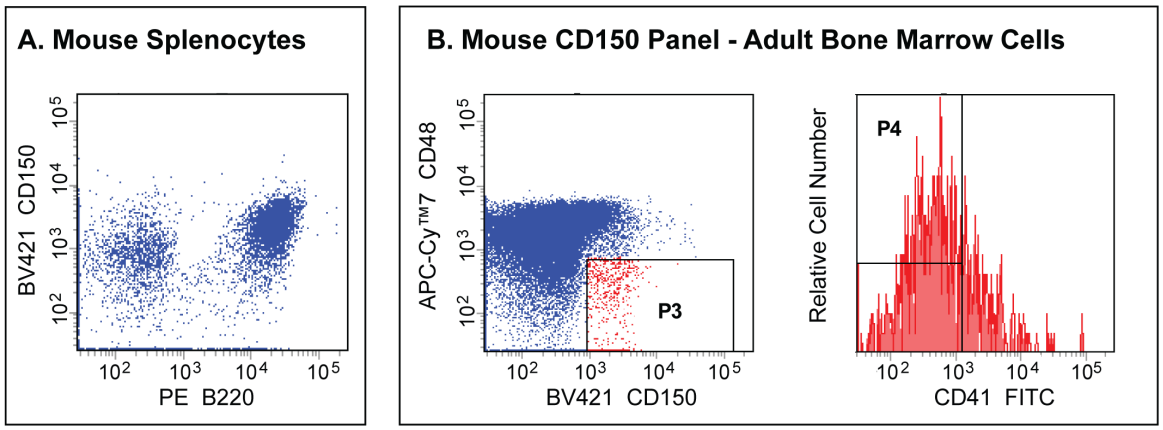
Product Information

Material Number:	**562811**
Alternate Name:	SLAM; Slamf1; Signaling lymphocytic activation molecule family member 1
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	Q38-480
Immunogen:	Mouse CD150 Recombinant Protein
Isotype:	Rat IgG2a, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The Q38-480 monoclonal antibody specifically binds to mouse CD150, also known as SLAM (signaling lymphocyte activation molecule). CD150 is a type 1 transmembrane glycoprotein that is a member of the CD2 subfamily of the Ig superfamily. It is encoded by the *Slamf1* (signaling lymphocytic activation molecule family member 1) gene. CD150 is differentially expressed on subsets of thymocytes, T and B lymphocytes, dendritic cells, macrophages, and endothelial cells. SLAM plays multiple roles in innate and adaptive immunity serving as an adhesion molecule and/or coreceptor. CD150-mediated costimulation of TCR-activated T cells reportedly results in the increased production of IFN-γ by Th1 cells and is required for IL-4 production by T follicular helper cells. CD150 also plays important roles in hematopoietic cell developmental pathways. CD150 is differentially expressed by self-renewing adult hematopoietic stem cells (HSC) that are CD150+ whereas non-multipotent hematopoietic progenitor cells are CD150-. Utilizing additional cell surface markers, lineage-negative CD150+CD48-CD41- cell fractions are reported to be highly enriched for adult HSC.

The antibody was conjugated to Brilliant Violet™ 421 and has been developed in collaboration with Sirigen. With an Ex Max of 407-nm and Em Max at 421-nm, Brilliant Violet™ 421 can be excited by the violet laser and detected in the standard Pacific Blue™ filter set (eg, 450/50-nm filter). Brilliant Violet™ 421 conjugates are very bright, often exhibiting a 10 fold improvement in brightness compared to Pacific Blue™ conjugates.



Multicolor flow cytometric analysis of CD150 expression by adult mouse spleen cells and bone marrow hematopoietic stem cells.

*(**Panel A**) BALB/c spleen cells were stained with PE Rat Anti-Mouse CD45R/B220 (Cat. No. 553090/553089/561878) and Brilliant Violet™ 421 Rat anti-Mouse CD150 (Cat. No. 562811), staining cells well above background compared to Brilliant Violet™ 421 Rat IgG2a, κ Isotype Control (Cat. No. 562602) (data not shown). A two-color flow cytometric dot plot shows the expression of B220 versus CD150 expressed by gated events with the forward and side-light scattering characteristics of viable lymphocytes.*

*(**Panel B**) BALB/c mouse bone-marrow cells were labeled with the BD IMag™ Mouse Hematopoietic Progenitor Enrichment Set (Cat. No. 558451) and separated on the BD IMagnet™ (Cat. No. 552311) according to the set protocol. The non-depleted bone marrow cells were subsequently stained with APC Mouse Lineage Antibody Cocktail (Cat. No. 558074), FITC Rat Anti-Mouse CD41 (Cat. No. 553848/561849), APC-Cy™7 Hamster Anti-Mouse CD48 (Cat. No. 561242) and Brilliant Violet™ 421 Rat anti-Mouse CD150 antibodies. A fluorescence histogram (Right Plot) shows little or no CD41 expression (P4 Gate) by Lineage-negative bone marrow cells that were progressively gated as viable (light-scatter gated) and CD48- CD150+ (Middle Plot, P3 Gate) cells. Lineage- CD41- CD48- CD150+ bone marrow cells have been reported to be highly enriched for adult mouse hematopoietic stem 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 Brilliant Violet™ 421 under optimum conditions, and unconjugated antibody and free Brilliant Violet™ 421 were removed.

Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
562602	Brilliant Violet™ 421 Rat IgG2a, κ Isotype Control	50 µg	R35-95
554656	Stain Buffer (FBS)	500 ml	(none)
558074	APC Mouse Lineage Antibody Cocktail, with Isotype Control	100 tests	(none)
561242	APC-Cy™7 Hamster Anti-Mouse CD48	50 µg	HM48-1
553090	PE Rat Anti-Mouse CD45R/B220	0.2 mg	RA3-6B2
553089	PE Rat Anti-Mouse CD45R/B220	0.1 mg	RA3-6B2
561878	PE Rat Anti-Mouse CD45R/B220	25 µg	RA3-6B2
558451	Mouse Hematopoietic Progenitor (Stem) Cell Enrichment Set - DM	5.0 ml	(none)
552311	Cell Separation Magnet	each	(none)
553848	FITC Rat Anti-Mouse CD41	0.5 mg	MWReg30
561849	FITC Rat Anti-Mouse CD41	50 µg	MWReg30

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. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
4. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
5. 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.
6. Pacific Blue™ is a trademark of Molecular Probes, Inc., Eugene, OR.
7. The Brilliant Violet™ 421 polymer dye is supplied by Sirigen.
8. Brilliant Violet™ 421 is a trademark of Sirigen.
9. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Castro AG, Hauser TM, Cocks BG, et al. Molecular and functional characterization of mouse signaling lymphocytic activation molecule (SLAM): differential expression and responsiveness in Th1 and Th2 cells. *J Immunol.* 1999; 163(11):5860-5870. (Immunogen: (Co)-stimulation, Flow cytometry, Immunoprecipitation)

Kiel MJ, Yilmaz OH, Iwashita T, Terhorst C, Morrison SJ. SLAM family receptors distinguish hematopoietic stem and progenitor cells and reveal endothelial niches for stem cells. *Cell.* 2005; 121(7):1109-1121. (Biology)

Wang N, Satoskar A, Faubion W, et al. The cell surface receptor SLAM controls T cell and macrophage functions. *J Exp Med.* 2004; 199(9):1255-1264. (Biology)

Yusuf I, Kageyama R, Monticelli L, Johnston RJ, Ditoro D, Hansen K, Barnett B, Crotty S. Germinal center T follicular helper cell IL-4 production is dependent on signaling lymphocytic activation molecule receptor (CD150). *J Immunol.* 2010; 185(1):190-202. (Clone-specific: Flow cytometry)

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