

## Technical Data Sheet

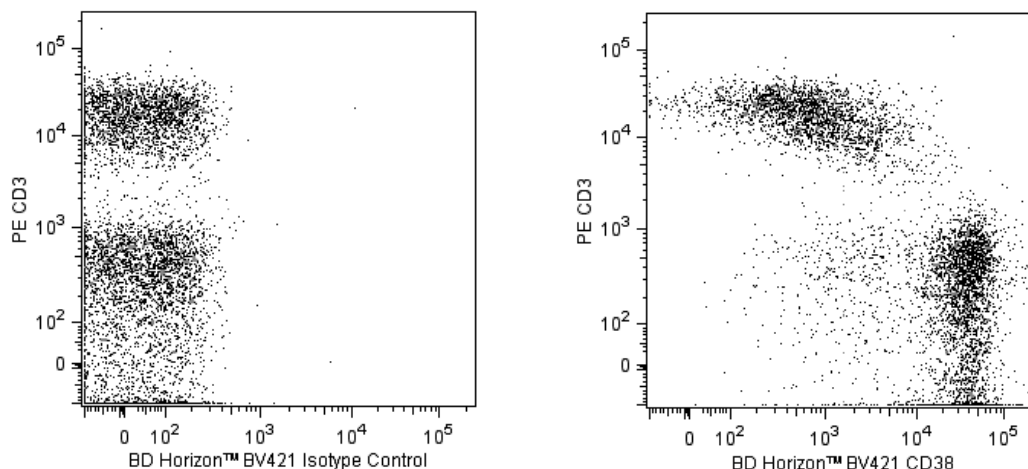
**BV421 Rat Anti-Mouse CD38****Product Information**

<b>Material Number:</b>	<b>562768</b>
<b>Alternate Name:</b>	ADP-ribosyl cyclase 1; Cyclic ADP-ribose hydrolase 1; I-19; NIM-R5
<b>Size:</b>	50 µg
<b>Concentration:</b>	0.2 mg/ml
<b>Clone:</b>	90/CD38 (also known as Ab90)
<b>Immunogen:</b>	Mouse Bone Marrow Pre-B cells
<b>Isotype:</b>	Rat IgG2a, κ
<b>Reactivity:</b>	QC Testing: Mouse
<b>Storage Buffer:</b>	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

**Description**

The 90 monoclonal antibody specifically binds to CD38, a 42 kDa transmembrane glycoprotein on immature and mature, resting and activated, B lymphocytes. In contrast to humans, CD38 expression is down-regulated on mouse germinal center B cells and plasma cells. CD38 is also expressed on a subpopulation of thymic and peripheral T cells, NK cells, and splenic macrophages. Furthermore, CD38 has been detected on bone marrow-derived hematopoietic stem cells. The CD38 molecule is reported to exhibit both cyclase and hydrolase activities and plays a role in lymphocyte activation. CD31, both human and mouse, is reported to be a ligand for human CD38.

The antibody was conjugated to BD Horizon™ BV421 which is part of the BD Horizon™ Brilliant Violet™ family of dyes. With an Ex Max of 407-nm and Em Max at 421-nm, BD Horizon™ BV421 can be excited by the violet laser and detected in the standard Pacific Blue™ filter set (eg, 450/50-nm filter). BD Horizon™ BV421 conjugates are very bright, often exhibiting a 10 fold improvement in brightness compared to Pacific Blue™ conjugates.



**Multicolor flow cytometric analysis of CD38 expression on C57BL/6 mouse splenocytes.** Splenic leucocytes were stained simultaneously with PE Hamster Anti-Mouse CD3 antibody (Cat. No. 553063/553064/561824) and with either BD Horizon™ BV421 Rat IgG2a, κ Isotype Control (Cat. No. 562602; Left Panel) or BD Horizon™ BV421 Rat Anti-Mouse CD38 antibody (Cat. No. 562768; Right Panel). Two-color flow cytometric dot plots show the correlated expression patterns of CD38 (or Ig Isotype control staining) versus CD3 for gated events with the forward and side light-scatter characteristics of viable leucocytes. Flow cytometry 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™ BV421 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV421 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)
562602	BV421 Rat IgG2a, κ Isotype Control	50 µg	R35-95
555899	Lysing Buffer	100 ml	(none)
553063	PE Hamster Anti-Mouse CD3e	0.1 mg	145-2C11
553064	PE Hamster Anti-Mouse CD3e	0.2 mg	145-2C11
561824	PE Hamster Anti-Mouse CD3e	25 µg	145-2C11

### 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. Brilliant Violet™ 421 is a trademark of Sirigen.
4. Pacific Blue™ is a trademark of Molecular Probes, Inc., Eugene, OR.
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/protocols](http://www.bdbiosciences.com/pharming/protocols) for technical protocols.

### References

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Cockayne DA, Muchamuel T, Grimaldi JC, et al. Mice deficient for the ecto-nicotinamide adenine dinucleotide glycohydrolase CD38 exhibit altered humoral immune responses. *Blood*. 1998; 92(4):1324-1333. (Biology)

Deaglio S, Morra M, Mallone R, et al. Human CD38 (ADP-ribosyl cyclase) is a counter-receptor of CD31, an Ig superfamily member. *J Immunol*. 1998; 160(1):395-402. (Biology)

Erickson LD, Vogel LA, Cascalho M, et al. B cell immunopoiesis: visualizing the impact of CD40 engagement on the course of T cell-independent immune responses in an Ig transgenic system. *Eur J Immunol*. 2000; 30(11):3121-3131. (Clone-specific: Flow cytometry, Immunofluorescence)

Horenstein AL, Stockinger H, Imhof BA, Malavasi F. CD38 binding to human myeloid cells is mediated by mouse and human CD31. *Biochem J*. 1998; 330(3):1129-1135. (Biology)

Howard M, Grimaldi JC, Bazan JF, et al. Formation and hydrolysis of cyclic ADP-ribose catalyzed by lymphocyte antigen CD38. *Science*. 1993; 262(5136):1056-1059. (Biology)

Lund F, Solvason N, Grimaldi JC, Parkhouse RM, Howard M. Murine CD38: an immunoregulatory ectoenzyme. *Immunol Today*. 1995; 16(10):469-473. (Biology)

Oliver AM. Personal Communication. . (Biology)

Oliver AM, Martin F, Kearney JF. Mouse CD38 is down-regulated on germinal center B cells and mature plasma cells. *J Immunol*. 1997; 158(3):1108-1115.

(Immunogen: ELISA, Flow cytometry, Fluorescence activated cell sorting, IC/FCM Block, Immunofluorescence, Immunoprecipitation)

Randall TD, Lund FE, Howard MC, Weissman IL. Expression of murine CD38 defines a population of long-term reconstituting hematopoietic stem cells. *Blood*. 1996; 87(10):4057-4067. (Biology)

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