

## Technical Data Sheet

## BV421 Rat Anti-Mouse CD19

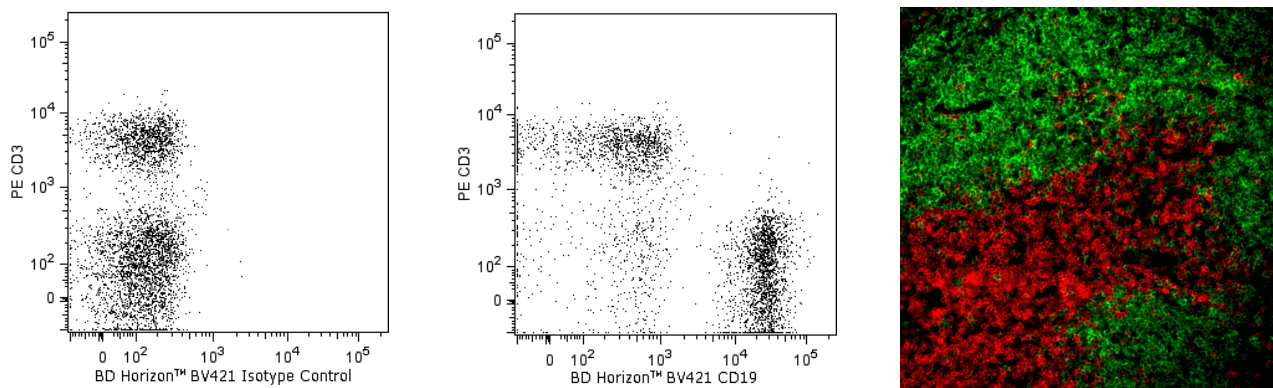
## Product Information

<b>Material Number:</b>	<b>562701</b>
<b>Alternate Name:</b>	Cd19; CD19 antigen; B-lymphocyte antigen CD19
<b>Size:</b>	50 µg
<b>Concentration:</b>	0.2 mg/ml
<b>Clone:</b>	1D3
<b>Immunogen:</b>	Mouse CD19 Transfected Cell Line
<b>Isotype:</b>	Rat (LEW) IgG2a, κ
<b>Reactivity:</b>	QC Testing: Mouse
<b>Storage Buffer:</b>	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

## Description

The 1D3 antibody reacts with CD19, a B lymphocyte-lineage differentiation antigen. CD19, a 95-kDa transmembrane glycoprotein, is a member of the immunoglobulin superfamily and is expressed throughout B-lymphocyte development from the pro-B cell through the mature B-cell stages. Terminally differentiated plasma cells do not express CD19. On the surface of mature B cells, the CD19 molecule associates with CD21 (CR-2) and CD81 (TAPA-1), and this multimolecular complex synergizes with surface immunoglobulin to promote cellular activation. Studies with CD19-deficient mice have suggested that the level of CD19 expression affects the generation and maturation of B cells in the bone marrow and periphery. B-1 lineage B cells, also known as CD5+ B cells, are drastically reduced or absent in CD19-deficient mice. Increased levels of CD19 expression correlate with increased frequencies of peritoneal and splenic B-1 cells and reduced numbers of conventional B lymphocytes in the periphery. CD19 participates in B-lymphocyte development, B-cell activation, maturation of memory B cells and regulation of tolerance. CD19 has also been detected on peritoneal mast cells, co-localized with CD21/CD35, and it is proposed to play a role in complement-mediated mast-cell activation.

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 CD19 expression on mouse splenocytes (left and center panels).** Splenocytes from a BALB/c mouse were stained simultaneously with PE Hamster Anti-Mouse CD3e antibody (Cat. No. 553063/553064/561824) and either BD Horizon™ BV421 Rat IgG2a, κ Isotype Control (Cat. No. 562602, Left Panel) or BD Horizon™ BV421 Rat Anti-Mouse CD19 (Cat. No. 562701, Center Panel). Two-color flow cytometric dot plots showing the expression of CD19 (or Ig isotype control staining) versus CD3 were derived from gated events with the forward and side light-scatter characteristics of viable splenocytes. Flow cytometry was performed using a BD™ LSR II Flow Cytometer System.

**Immunofluorescent analysis of CD19 expression by cells within C57BL/6 mouse spleen (right panel).** A mouse spleen cryosection (5 µm) was fixed with BD Cytotfix™ Fixation Buffer (Cat. No. 554655), blocked with 5% goat serum and 1% BSA diluted in 1x PBS, and stained with BD Horizon™ BV421 Rat Anti-Mouse CD19 antibody (Cat. No. 562701, pseudo-colored green) and Alexa Fluor® 647 Rat Anti-Mouse CD3 Molecular Complex antibody (Cat. No. 557869, pseudo-colored red). Images were captured on a standard epifluorescence microscope. Original magnification, 20x.

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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™ BV421 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV421 were removed.

## Application Notes

### Application

Flow cytometry	Routinely Tested
Immunofluorescence	Tested During Development

### Recommended Assay Procedure:

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).

## 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
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
554657	Stain Buffer (BSA)	500 mL	(none)
564907	DAPI Solution	1 mg	(none)
563794	Brilliant Stain Buffer	100 Tests	(none)
554655	Fixation Buffer	100 mL	(none)
557869	Alexa Fluor® 647 Rat Anti-Mouse CD3 Molecular Complex	0.1 mg	17A2

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. 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.
5. 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).
6. Pacific Blue™ is a trademark of Molecular Probes, Inc., Eugene, OR.
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. BD Horizon Brilliant Violet 421 is covered by one or more of the following US patents: 8,158,444; 8,362,193; 8,575,303; 8,354,239.
9. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
10. Please refer to [www.bdbiosciences.com/pharmingen/protocols](http://www.bdbiosciences.com/pharmingen/protocols) for technical protocols.

## References

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