

## Technical Data Sheet

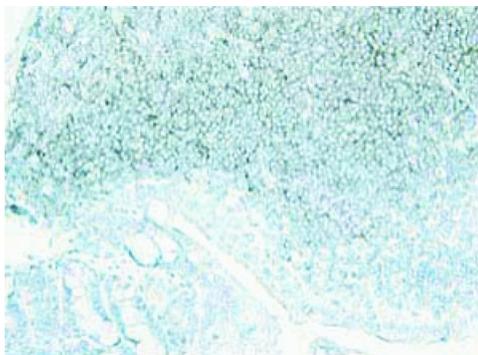
## Purified Rat Anti-Mouse CD19

## Product Information

Material Number:	550284
Size:	1.0 ml
Concentration:	15.625 µg/ml
Clone:	1D3
Immunogen:	Mouse CD19 Transfected Cell Line
Isotype:	Rat (LEW) IgG2a, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing BSA, goat serum, 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.



*Immunohistochemical staining of B lymphocytes. Frozen sections of the mouse small intestine were reacted with 1D3 antibody. B lymphocytes can be identified by the intense brown labeling of their cell surface membranes. Amplification 20X.*

## Preparation and Storage

Store undiluted at 4°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

## Application Notes

## Application

Flow cytometry	Routinely Tested
Immunohistochemistry-frozen	Tested During Development
Immunohistochemistry-formalin (antigen retrieval required)	Not Recommended

## Recommended Assay Procedure:

**Immunohistochemistry:** The 1D3 antibody is recommended to test for immunohistochemical staining on acetone-fixed frozen sections. **The clone 1D3 is not recommended for formalin-fixed paraffin embedded sections.** The isotype control recommended for use with this antibody is purified rat IgG2a (Cat. No. 559073). For optimal indirect immunohistochemical staining, the 1D3 antibody should be titrated (1:10 to 1:50 dilution) and visualized via a three-step staining procedure in combination with biotinylated polyclonal anti-rat Ig (multiple adsorbed) (Cat. No. 559286) as the secondary antibody and Streptavidin-HRP (Cat. No. 550946) together with the DAB substrate (Cat. No. 550880). Alternatively, the anti-rat Ig detection kit may also be used (Cat. No. 551013). A detailed protocol of the immunohistochemical procedure is available at our website, <http://www.bdbiosciences.com/support/resources>

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## Suggested Companion Products

<u>Catalog Number</u>	<u>Name</u>	<u>Size</u>	<u>Clone</u>
559073	Purified Rat IgG2a $\kappa$ Isotype Control	0.25 mg	R35-95
559286	Biotin Goat Anti-Rat Ig	0.5 mg	Polyclonal
550946	Streptavidin HRP	50 ml	(none)
550880	DAB Substrate Kit	500 tests	(none)
559148	Antibody Diluent for IHC	125 ml	(none)
551013	Anti-Rat Ig HRP Detection Kit	200 tests	(none)

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. 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.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
4. This antibody has been developed for the immunohistochemistry application. However, a routine immunohistochemistry test is not performed on every lot. Researchers are encouraged to titrate the reagent for optimal performance.
5. An isotype control should be used at the same concentration as the antibody of interest.
6. Please refer to [www.bdbiosciences.com/pharming/protocols](http://www.bdbiosciences.com/pharming/protocols) for technical protocols.

## References

Fearon DT. The CD19-CR2-TAPA-1 complex, CD45 and signaling by the antigen receptor of B lymphocytes. *Curr Opin Immunol.* 1993; 5(3):341-348. (Biology)

Inaaki M, Sato S, Weintraub BC, Goodnow CC, Tedder TF. CD19-regulated signaling thresholds control peripheral tolerance and autoantibody production in B lymphocytes. *J Exp Med.* 1997; 186(11):1923-1931. (Biology)

Krop I, de Fougerolles AR, Hardy RR, Allison M, Schlissel MS, Fearon DT. Self-renewal of B-1 lymphocytes is dependent on CD19. *Eur J Immunol.* 1996; 26(1):238-242. (Immunogen: Functional assay, Immunoprecipitation)

Krop I, Shaffer AL, Fearon DT, Schlissel MS. The signaling activity of murine CD19 is regulated during cell development. *J Immunol.* 1996; 157(1):48-56. (Biology: Functional assay)

Sato S, Miller AS, Howard MC, Tedder TF. Regulation of B lymphocyte development and activation by the CD19/CD21/CD81/Leu 13 complex requires the cytoplasmic domain of CD19. *J Immunol.* 1997; 159(7):3278-3287. (Biology)

Sato S, Ono N, Steeber DA, Pisetsky DS, Tedder TF. CD19 regulates B lymphocyte signaling thresholds critical for the development of B-1 lineage cells and autoimmunity. *J Immunol.* 1996; 157(10):4371-4378. (Biology)

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