

## Technical Data Sheet

## BV421 Rat Anti-Mouse CD103

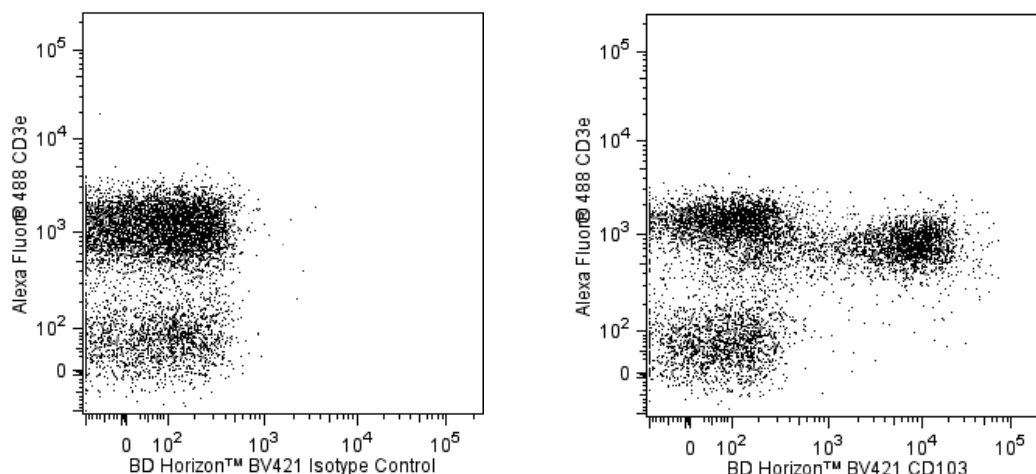
## Product Information

<b>Material Number:</b>	562771
<b>Alternate Name:</b>	Itgae; Integrin alpha-E; $\alpha$ E; alpha-E1; ITAE; Integrin $\alpha$ IEL chain; aM290
<b>Size:</b>	50 $\mu$ g
<b>Concentration:</b>	0.2 mg/ml
<b>Clone:</b>	M290
<b>Immunogen:</b>	Mouse Intestinal Epithelial Cells
<b>Isotype:</b>	Rat (LOU) IgG2a, $\kappa$
<b>Reactivity:</b>	QC Testing: Mouse
<b>Storage Buffer:</b>	Aqueous buffered solution containing BSA and $\leq$ 0.09% sodium azide.

## Description

The M290 antibody specifically binds to CD103, the  $\alpha$  chain of  $\alpha$ IEL $\beta$ 7 integrin. CD103 has a unique and fairly restricted tissue distribution. It is expressed on almost all intestinal intraepithelial lymphocytes (IEL), on dendritic epidermal T cells (DEC), on subpopulations of peripheral T cells, and on distinct subsets of fetal, neonatal, and adult thymocytes. E-cadherin is the epithelial-cell ligand for  $\alpha$ IEL $\beta$ 7 integrin. The ordered expression of  $\alpha$ IEL during thymocyte development (which occurs under the influence of the thymic epithelium), the high level of expression of  $\alpha$ IEL on those peripheral T cells found in epithelial tissues (IEL and DEC), and the expression of CD103 on a subset of CD8+ lymphocytes responding to allogeneic epithelial cells suggest that  $\alpha$ IEL $\beta$ 7 integrin may have a common role in the interactions of T lymphocytes with epithelia during T-cell maturation and effector functions. CD103 is thought to play a role in allograft rejection. The M290 antibody is reported to efficiently inhibit  $\alpha$ IEL $\beta$ 7-mediated adhesion in *in vitro* assays.

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 CD103 expression on mouse lymph node cells.** Lymph node cells from a C57BL/6 mouse were stained with Alexa Fluor® 488 Hamster Anti-Mouse CD3e antibody (Cat. No. 557666) and either BD Horizon™ BV421 Rat IgG2a,  $\kappa$  Isotype Control (Cat. No. 562602; Left Panel) or with BD Horizon™ BV421 Rat Anti-Mouse CD103 antibody (Cat. No. 562771; Right Panel). Two-color dot plots showing the coexpressed levels of CD103 (or Ig Isotype Control staining) versus CD3e were derived from gated events with the forward and side light-scatter characteristics of viable leucocytes. Flow cytometric analysis was performed using a BD™ LSR II Flow Cytometer System.

## Preparation and Storage

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

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

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, $\kappa$ Isotype Control	50 $\mu$ g	R35-95
555899	Lysing Buffer	100 ml	(none)
557666	Alexa Fluor® 488 Hamster Anti-Mouse CD3e	0.1 mg	145-2C11

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

### References

Andrew DP, Rott LS, Kilshaw PJ, Butcher EC. Distribution of alpha 4 beta 7 and alpha E beta 7 integrins on thymocytes, intestinal epithelial lymphocytes and peripheral lymphocytes. *Eur J Immunol.* 1996; 26(4):897-905. (Clone-specific: Flow cytometry)

Feng Y, Wang D, Yuan R, Parker CM, Farber DL, Hadley GA. CD103 expression is required for destruction of pancreatic islet allografts by CD8(+) T cells. *J Exp Med.* 2002; 196(7):877-886. (Biology)

Hadley GA, Bartlett ST, Via CS, Rostapshova EA, Moainie S. The epithelial cell-specific integrin, CD103 (alpha E integrin), defines a novel subset of alloreactive CD8+ CTL. *J Immunol.* 1997; 159(8):748-3756. (Biology)

Karecla PI, Bowden SJ, Green SJ, Kilshaw PJ. Recognition of E-cadherin on epithelial cells by the mucosal T cell integrin alpha M290 beta 7 (alpha E beta 7). *Eur J Immunol.* 1995; 25(3):852-856. (Clone-specific: Blocking)

Kilshaw PJ, Baker KC. A unique surface antigen on intraepithelial lymphocytes in the mouse. *Immunol Lett.* 1988; 18(2):149-154. (Immunogen: Immunofluorescence, Immunohistochemistry, Immunoprecipitation)

Kilshaw PJ, Murant SJ. A new surface antigen on intraepithelial lymphocytes in the intestine. *Eur J Immunol.* 1990; 20(10):2201-2207. (Clone-specific: Immunoprecipitation)

Kilshaw PJ, Murant SJ. Expression and regulation of beta 7(beta p) integrins on mouse lymphocytes: relevance to the mucosal immune system. *Eur J Immunol.* 1991; 21(10):2591-2597. (Clone-specific: Immunohistochemistry)

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