

Technical Data Sheet

BV711 Hamster Anti-Mouse CD103

Product Information

Material Number:	748255
Size:	50 µg
Clone:	2E7
Alternative Name:	Itgae; integrin alpha-E; Integrin αIEL chain; αE; alpha-E1
Reactivity:	Mouse (Tested in Development)
Isotype:	Armenian Hamster IgG2, κ
Immunogen:	Mouse intestinal intraepithelial lymphocytes
Application:	Flow cytometry (Qualified)
Concentration:	0.2 mg/ml
Entrez Gene ID:	16407
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.
Regulatory Status:	RUO

Description

The 2E7 monoclonal antibody specifically recognizes CD103 which is also known as the α chain of the heterodimeric αIELβ7 (also known as, αEβ7) integrin. CD103 is a type I transmembrane glycoprotein that is encoded by Itgae (integrin alpha E, epithelial-associated). CD103 has a unique and fairly restricted tissue distribution. It is expressed on almost all intestinal intraepithelial lymphocytes (IEL), dendritic epidermal T cells (DEC), subsets of peripheral T cells, and distinct subsets of fetal, neonatal, and adult thymocytes. E-cadherin is the epithelial cell ligand for αIELβ7 integrin. The ordered expression of αIEL during thymocyte development (which occurs under the influence of the thymic epithelium), high level of αIEL expression on peripheral T cells in epithelial tissues (IEL and DEC), and expression of CD103 on a subset of CD8+ lymphocytes responding to allogeneic epithelial cells, suggest that αIELβ7 integrin has 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 2E7 antibody recognizes a different epitope than that recognized by the M290 antibody. Ligation of CD103 by 2E7 reportedly induces intracellular signaling activity in a redirected lysis assay and can costimulate anti-TCR antibody-activated IEL and CD8+ T cells. The 2E7 hamster antibody does not crossreact with rat leucocytes.

The antibody was conjugated to BD Horizon™ BV711 which is part of the BD Horizon Brilliant™ Violet family of dyes. This dye is a tandem fluorochrome of BD Horizon BV421 with an Ex Max of 405-nm and an acceptor dye with an Em Max at 711-nm. BD Horizon BV711 can be excited by the violet laser and detected in a filter used to detect Cy™5.5 / Alexa Fluor® 700-like dyes (eg, 712/20-nm filter). Due to the excitation and emission characteristics of the acceptor dye, there may be moderate spillover into the Alexa Fluor® 700 and PerCP-Cy5.5 detectors. However, the spillover can be corrected through compensation as with any other dye combination.

Preparation and Storage Section

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 BV711 under optimal conditions that minimize unconjugated dye and antibody.

Recommended Assay Procedure

For optimal and reproducible results, BD Horizon Brilliant Stain Buffer should be used anytime two or more BD Horizon Brilliant dyes (including BD OptiBuild Brilliant reagents) 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
563989	BV711 Hamster IgG2, κ Isotype Control RUO	50 µg	
554656	Stain Buffer (FBS) RUO	500 mL	
554657	Stain Buffer (BSA) RUO	500 mL	
563794	Brilliant Stain Buffer RUO	100 Tests	

555899	Lysing Buffer RUO	100 mL
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™) 2.4G2 RUO	0.1 mg
565804	Red Nucleic Acid Stain RUO	0.5 mL

Product Notices

1. This antibody was developed for use in flow cytometry.
2. The production process underwent stringent testing and validation to assure that it generates a high-quality conjugate with consistent performance and specific binding activity. However, verification testing has not been performed on all conjugate lots.
3. Researchers should determine the optimal concentration of this reagent for their individual applications.
4. An isotype control should be used at the same concentration as the antibody of interest.
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.
7. Please refer to www.bdbiosciences.com/us/s/resources for technical protocols.
8. 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.
9. BD Horizon Brilliant Violet 711 is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,227,187; 8,455,613; 8,575,303; 8,354,239.
10. Cy is a trademark of GE Healthcare.
11. Alexa Fluor® is a registered trademark of Life Technologies Corporation.

References

Goodman T, Lefrancois L. Intraepithelial lymphocytes. Anatomical site, not T cell receptor form, dictates phenotype and function. *J Exp Med.* 1989; 170(5):1569-1581.

Lefrancois L, Barrett TA, Havran WL, Puddington L. Developmental expression of the alpha IEL beta 7 integrin on T cell receptor gamma delta and T cell receptor alpha beta T cells. *Eur J Immunol.* 1994; 24(3):635-640.

Müller S, Jungo M, Aichele P, Mueller C. CD5- CD8 alpha beta intestinal intraepithelial lymphocytes (IEL) are induced to express CD5 upon antigen-specific activation: CD5- and CD5+ CD8 alpha beta IEL do not represent separate T cell lineages. *Eur J Immunol.* 1997; 27(7):1756-61.

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bdbiosciences.com

United States
877.232.8995

Canada
888.268.5430

Europe
32.53.720.550

Japan
0120.8555.90

Asia Pacific
65.6861.0633

Latin America/Caribbean
0800.771.7157



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