

Technical Data Sheet

BV711 Mouse Anti-Human TCR V#5.1

Product Information

Material Number:	751805
Size:	50 µg
Clone:	LC4
Alternative Name:	TCR V beta 5.1; TCR Vb5.1; TRBV5-1; TRBV51
Reactivity:	Human (Tested in Development)
Isotype:	Mouse BALB/c IgG1, κ
Immunogen:	Human T acute lymphoblastic leukemia Cell Line
Application:	Flow cytometry (Qualified)
Concentration:	0.2 mg/ml
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.
Regulatory Status:	RUO

Description

The LC4 monoclonal antibody specifically recognizes the human variable beta 5.1 (Vβ5.1) domain of the beta subunit for the αβ T cell receptor for antigen (TCR αβ). TCR Vβ5.1 is encoded by TRBV5-1 (T cell receptor beta variable 5-1), one of five functional genes within the TRBV5 subgroup in the T cell receptor beta (TRB) locus. The heterodimeric TCR αβ is composed of two disulfide-linked transmembrane glycoproteins, ie, highly variable TCRα and TCRβ chains. These chains are each comprised of an extracellular N-terminal variable (V) region domain followed by a constant (C) region domain, a transmembrane region, and a short C-terminal cytoplasmic tail. The TCR Vβ repertoire is known to be extensive due to the many different combinations of TCR gene segments (Vβ, Dβ, and Jβ) as well as junctional region diversity. TCR Vβ5.1 is variably expressed on subsets of TCR αβ-positive thymocytes and peripheral CD4+ or CD8+ T cells. In association with the CD3 complex of signaling proteins, the TCR αβ recognizes peptide-major histocompatibility complexes (pMHC) that are displayed on other cells to mediate cellular responses. The LC4 antibody is useful for analyzing the levels of TCR Vβ5.1 expressed by individual cells as well as the numbers or frequencies of TCR Vβ5.1-positive cells within test samples. The LC4 antibody can be used to help characterize the TCR Vβ repertoires of T cell populations during health as well as in response to vaccination, infectious disease, aging, transplantation, autoimmunity or cancer.

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

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 to the dye under optimum conditions that minimize unconjugated dye and antibody.

Recommended Assay Procedure

BD™ CompBeads can be used as surrogates to assess fluorescence spillover (Compensation). When fluorochrome conjugated antibodies are bound to CompBeads, they have spectral properties very similar to cells. However, for some fluorochromes there can be small differences in spectral emissions compared to cells, resulting in spillover values that differ when compared to biological controls. It is strongly recommended that when using a reagent for the first time, users compare the spillover on cells and CompBead to ensure that BD Comp beads are appropriate for your specific cellular application.

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. 563794/566349) or the BD Horizon Brilliant Stain Buffer Plus (Cat. No. 566385).

Suggested Companion Products

Catalog Number	Name	Size	Clone
349202	Lysing Solution 10X Concentrate	100 NA	
564219	Human BD Fc Block™	50 mg	
563044	BV711 Mouse IgG1, k Isotype Control	50 µg	X40
554656	Stain Buffer (FBS)	500 mL	
554657	Stain Buffer (BSA)	500 mL	
563794	Brilliant Stain Buffer	100 Tests	
555899	Lysing Buffer	100 mL	
566349	Brilliant Stain Buffer	1000 Tests	
566385	Brilliant Stain Buffer Plus	1000 Tests	

Product Notices

1. 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.
2. Researchers should determine the optimal concentration of this reagent for their individual applications.
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.
6. Please refer to www.bdbiosciences.com/us/s/resources for technical protocols.
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. Please refer to <http://regdocs.bd.com> to access safety data sheets (SDS).
9. Alexa Fluor® is a registered trademark of Life Technologies Corporation.
10. 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.
11. Cy is a trademark of GE Healthcare.

References

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