Technical Data Sheet

BV605 Hamster Anti-Mouse TCR β Chain

Product Information

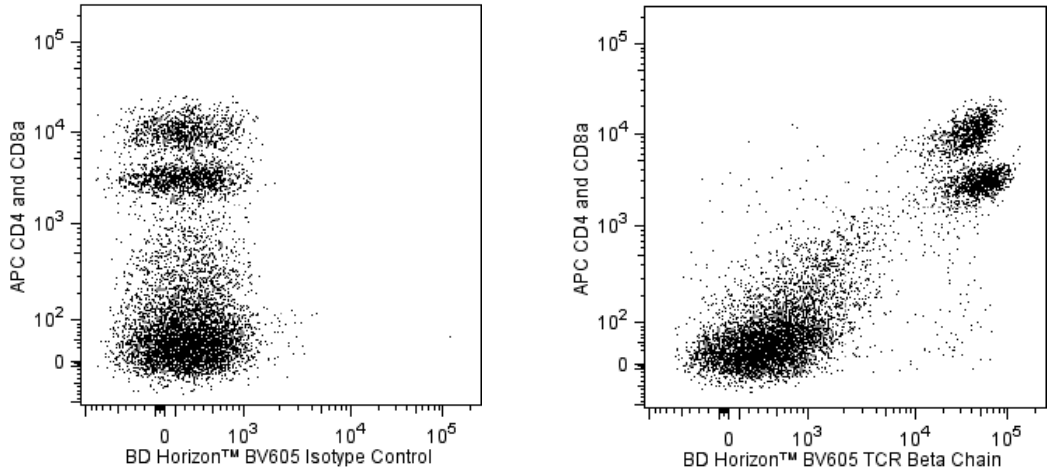
Material Number:	**562840**
Alternate Name:	Tcrb; TCRbeta; TCRβ, T cell receptor beta chain
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	H57-597
Immunogen:	TCR affinity-purified from mouse T-cell hybridoma DO-11.10
Isotype:	Armenian Hamster IgG2, λ1
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The H57-597 antibody reacts with a common epitope of the β chain of the T-cell Receptor (TCR) complex on αβ TCR-expressing thymocytes and peripheral T lymphocytes and NK1.1+ thymocytes and NK-T cells of all mouse strains tested. It does not react with γδ TCR-bearing T cells. In the fetal and adult thymus, the TCR β-chain may form homodimers or pair with the pre-TCR α-chain on the surface of immature thymocytes before expression of the TCR α-chain. Plate-bound or soluble H57-597 antibody activates αβ TCR-bearing T cells, and plate-bound mAb can induce apoptotic death.

This antibody is conjugated to BD Horizon BV605 which is part of the BD Horizon Brilliant™ Violet family of dyes. With an Ex Max of 407-nm and Em Max of 602-nm, BD Horizon BV605 can be excited by a violet laser and detected with a standard 610/20-nm filter set. BD Horizon BV605 is a tandem fluorochrome of BD Horizon BV421 and an acceptor dye with an Em max at 605-nm. Due to the excitation of the acceptor dye by the green (532 nm) and yellow-green (561 nm) lasers, there will be significant spillover into the PE and BD Horizon PE-CF594 detectors off the green or yellow-green lasers. BD Horizon BV605 conjugates are very bright, often exhibiting brightness equivalent to PE conjugates and can be used as a third color off of the violet laser.

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).



Multicolor flow cytometric analysis of TCRβ expression on mouse splenocytes. *Mouse splenic leucocytes were incubated with Purified Rat Anti-Mouse CD16/CD32 antibody (Mouse BD Fc Block™) (Cat. No. 553141/553142) and then stained with APC Rat Anti-Mouse CD4 (Cat. No. 553051/561091) and APC Rat Anti-Mouse CD8a (Cat. No. 553035/561093) and either BD Horizon™ BV605 Hamster IgG2, Lambda Isotype Control (Cat. No. 563056, Left Panel) or BD Horizon™ BV605 Hamster Anti-Mouse TCR β Chain antibody (Cat. No. 562840; Right Panel). Two-color flow cytometric dot plots show the correlated expression patterns of TCRβ (or Ig Isotype control staining) versus CD4 and CD8 for gated events with the forward and side light-scatter characteristics of viable splenic leucocytes. Flow cytometric analysis was performed using a BD LSRFortessa™ Cell Analyzer System.*

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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™ BV605 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV605 were removed.

Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 mL	(none)
563056	BV605 Hamster IgG2, λ1 Isotype Control	50 µg	Ha4/8
555899	Lysing Buffer	100 mL	(none)
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2
553142	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.5 mg	2.4G2
553051	APC Rat Anti-Mouse CD4	0.1 mg	RM4-5
561091	APC Rat Anti-Mouse CD4	25 µg	RM4-5
553035	APC Rat Anti-Mouse CD8a	0.1 mg	53-6.7
561093	APC Rat Anti-Mouse CD8a	25 µg	53-6.7
563794	Brilliant Stain Buffer	5 mL	(none)

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/pharmingen/protocols for technical protocols.
5. Please observe the following precautions: Absorption of visible light can significantly alter the energy transfer occurring in any tandem fluorochrome conjugate; therefore, we recommend that special precautions be taken (such as wrapping vials, tubes, or racks in aluminum foil) to prevent exposure of conjugated reagents, including cells stained with those reagents, to room illumination.
6. 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.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
8. Although every effort is made to minimize the lot-to-lot variation in the efficiency of the fluorochrome energy transfer, differences in the residual emission from BD Horizon™ BV421 may be observed. Therefore, we recommend that individual compensation controls be performed for every BD Horizon™ BV605 conjugate.
9. Although hamster immunoglobulin isotypes have not been well defined, BD Biosciences Pharmingen has grouped Armenian and Syrian hamster IgG monoclonal antibodies according to their reactivity with a panel of mouse anti-hamster IgG mAbs. A table of the hamster IgG groups, Reactivity of Mouse Anti-Hamster Ig mAbs, may be viewed at http://www.bdbiosciences.com/documents/hamster_chart_11x17.pdf.
10. CF™ is a trademark of Biotium, Inc.

References

Castro JE, Listman JA, Jacobson BA, et al. Fas modulation of apoptosis during negative selection of thymocytes. *Immunity.* 1996; 5(6):617-627. (Clone-specific: Fluorescence microscopy)

Gascoigne NR. Transport and secretion of truncated T cell receptor beta-chain occurs in the absence of association with CD3. *J Biol Chem.* 1990; 265(16):9296-9301. (Clone-specific)

Kruisbeek AM, Shevach EM. Proliferative assays for T cell function. *Curr Protoc Immunol.* 2004; 3:3.12.1-3.12.14. (Clone-specific: Activation, Functional assay, Stimulation)

Kubo RT, Born W, Kappler JW, Marrack P, Pigeon M. Characterization of a monoclonal antibody which detects all murine alpha beta T cell receptors. *J Immunol.* 1989; 142(8):2736-2742. (Immunogen: Flow cytometry)

Saint-Ruf C, Panigada M, Azogui O, Debey P, von Boehmer H, Grassi F. Different initiation of pre-TCR and gammadeltaTCR signalling. *Nature.* 2000; 406(6795):524-527. (Clone-specific: Stimulation)

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