Technical Data Sheet

BV510 Hamster Anti-Mouse CD3e

Product Information

Material Number:	563024
Alternate Name:	CD3; CD3 epsilon; Cd3e; CD3ɛ; T3e
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	145-2C11
Immunogen:	H-2Kb specific cytotoxic T lymphocyte clone BM10-37
Isotype:	Armenian Hamster IgG1, ĸ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing BSA and $\leq 0.09\%$ sodium azide.

Description

The 145-2C11 monoclonal antibody specifically binds to the 25-kDa ε chain of the T-cell receptor-associated CD3 complex that is expressed on thymocytes, mature T lymphocytes, and NK-T cells. The cytoplasmic domain of CD3e participates in the signal transduction events that activate several cellular biochemical pathways as a result of antigen recognition. Soluble 145-2C11 antibody can activate either unprimed (naive) or primed (memory/preactivated) T cells *in vivo* or *in vitro*, in the presence of Fc receptor-bearing accessory cells. In contrast, plate-bound 145-2C11 can activate T cells in the absence of accessory cells. Soluble 145-2C11 antibody has been reported to induce re-directed lysis of Fc receptor-bearing target cells by CTL clones and can also block lysis of specific target cells by antigen-specific CTL's. Under some conditions, T-cell activation by 145-2C11 antibody has been reported to result in apoptotic cell death. The 145-2C11 antibody does not cross-react with rat leukocytes. Preincubation of thymus cell suspensions at 37°C for 2-4 hours prior to staining reportedly enhances the ability of anti-CD3 ε and anti- $\alpha\beta$ TCR mAbs to detect the T-cell receptor on immature thymocytes.

The antibody was conjugated to BD Horizon[™] BV510 which is part of the BD Horizon[™] Brilliant Violet[™] family of dyes. With an Ex Max of 405-nm and Em Max at 510-nm, BD Horizon[™] BV510 can be excited by the violet laser and detected in the BD Horizon[™] V500 (525/50-nm) filter set. BD Horizon[™] BV510 conjugates are useful for the detection of dim markers off the violet laser.



Two-color flow cytometric analysis of CD3e expressed on mouse splenocytes. BALB/c splenic leucocytes were stained with APC Rat Anti-Mouse CD4 (Cat. No. 55305/561091) and APC Rat Anti-Mouse CD8a (Cat. No. 553035/561093) antibodies and either BD Horizon™ BV510 Armenian Hamster IgG1, κ Isotype Control (Cat. No. 563197; Left Panel) or BD Horizon™ BV510 Hamster Anti-Mouse CD3e antibody (Cat. No. 563024; Right Panel). The two-color flow cytometric dot plots show CD3 (or Ig Isotype Control staining) versus CD4 and CD8 derived from events with the forward and side light-scatter characteristics of viable splenic leucocytes. Flow cytometric analysis was performed using a BD LSR™ II Flow Cytometry System.

BD Biosciences

bdbiosciences.com						
United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbea	
877.232.8995	800.979.9408	32.53./20.550	0120.8555.90	65.6861.0633	55.11.5185.9995	
Conditions: The in	oformation disclose	d herein is not to b	e constructed as a re	ecommendation to	use the above product in violati	
of any patents. BL	D Biosciences will n	ot be help responsi	ble for patent infrin	gement or other vic	plations that may occur with the	



Conditions: The information disclosed herein is not to be constructed as a recommendation to use the above product in violation of any patents. BD Biosciences will not be help responsible for patent infringement or other violations that may occur with the use of our products. Purchase does not include or carry any right to resell or transfer this product either as a stand-alone product or as a component of another product. Any use of this product other than the permitted use without the express written authorization of Becton, Dickinson and Company is stictly prohibited.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale. Unless otherwise noted, BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2011 BD

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 HorizonTM BV510 under optimum conditions, and unconjugated antibody and free BD HorizonTM

BV510 were removed. **Application Notes**

A	Application							
	Flow cytometry		Routinely Tested					
S	Suggested Companion Products							
6	[°] atalog Number	Nama		Sizo	Clone			

Catalog Number	Name	Size	Clone	
554656	Stain Buffer (FBS)	500 ml	(none)	
563197	BV510 Hamster IgG1, κ Isotype Control	50 µg	A19-3	
553051	APC Rat Anti-Mouse CD4	0.1 mg	RM4-5	
561091	APC Rat Anti-Mouse CD4	25 µg	RM4-5	
555899	Lysing Buffer	100 ml	(none)	
553035	APC Rat Anti-Mouse CD8a	0.1 mg	53-6.7	
561093	APC Rat Anti-Mouse CD8a	25 µg	53-6.7	

Product Notices

- Since applications vary, each investigator should titrate the reagent to obtain optimal results. 1.
- Source of all serum proteins is from USDA inspected abattoirs located in the United States. 2.
- An isotype control should be used at the same concentration as the antibody of interest. 3.
- 4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
- Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before 5. discarding to avoid accumulation of potentially explosive deposits in plumbing.
- For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at 6. www.bdbiosciences.com/colors.
- 7. Brilliant Violet[™] 510 is a trademark of Sirigen.
- Although hamster immunoglobulin isotypes have not been well defined, BD Biosciences Pharmingen has grouped Armenian and Syrian 8. 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.

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: Activation, Apoptosis)

Duke RC, Cohen JJ, Boehme SA, et al. Morphological, biochemical, and flow cytometric assays of apoptosis. In: Coligan J, Kruisbeek AM, Margulies D, Shevach EM, Strober W, ed. Current Protocols in Immunology. New York: John Wiley and Sons; 1995:3.17.1-3.17.33. (Methodology: Activation, Apoptosis) Isakov N, Wange RL, Burgess WH, Watts JD, Aebersold R, Samelson LE. ZAP-70 binding specificity to T cell receptor tyrosine-based activation motifs: the tandem SH2 domains of ZAP-70 bind distinct tyrosine-based activation motifs with varying affinity. J Exp Med. 1995; 181(1):375-380. (Biology) Kruisbeek AM, Shevach EM. Proliferative assays for T cell function. Curr Protoc Immunol. 2004; 1:3.12.1-3.12.14. (Methodology: Activation, 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. (Clone-specific: Activation, Flow cytometry, Immunoprecipitation, Stimulation) Leo O, Foo M, Sachs DH, Samelson LE, Bluestone JA. Identification of a monoclonal antibody specific for a murine T3 polypeptide. Proc Natl Acad Sci U S A.

1987; 84(5):1374-1378. (Immunogen: Activation, Blocking, Cytotoxicity, Flow cytometry, Immunoprecipitation, Inhibition, Stimulation) Nakano H, Yamazaki T, Miyatake S, Nozaki N, Kikuchi A, Saito T. Specific interaction of topoisomerase II beta and the CD3 epsilon chain of the T cell receptor

complex. J Biol Chem. 1996; 271(11):6483-6489. (Clone-specific: Functional assay, Stimulation) Portoles P, Rojo J, Golby A, et al. Monoclonal antibodies to murine CD3 epsilon define distinct epitopes, one of which may interact with CD4 during T cell activation. J Immunol. 1989; 142(12):4169-4175. (Clone-specific: Blocking, Cytotoxicity, Functional assay, Immunoprecipitation, Radioimmunoassay) Radvanyi LG, Mills GB, Miller RG. Religation of the T cell receptor after primary activation of mature T cells inhibits proliferation and induces apoptotic cell death. J Immunol. 1993; 150(12):5704-5715. (Clone-specific: Activation, Apoptosis)

Salvadori S, Gansbacher B, Pizzimenti AM, Zier KS. Abnormal signal transduction by T cells of mice with parental tumors is not seen in mice bearing IL-2-secreting tumors. J Immunol. 1994; 153(11):5176-5182. (Clone-specific: Activation, Calcium Flux, Flow cytometry, Western blot) Shinkai Y, Alt FW. CD3 epsilon-mediated signals rescue the development of CD4+CD8+ thymocytes in RAG-2-/- mice in the absence of TCR beta chain expression. Int Immunol. 1994; 6(7):995-1001. (Biology)

Ucker DS, Meyers J, Obermiller PS. Activation-driven T cell death. II. Quantitative differences alone distinguish stimuli triggering nontransformed T cell proliferation or death. J Immunol. 1992; 149(5):1583-1592. (Clone-specific: Activation, Apoptosis, Stimulation)

Wang R, Murphy KM, Loh DY, Weaver C, Russell JH. Differential activation of antigen-stimulated suicide and cytokine production pathways in CD4+ T cells is regulated by the antigen-presenting cell. J Immunol. 1993; 150(9):3832-3842. (Clone-specific: Activation, Apoptosis)

BD Biosciences						
bdbiosciences.com						
United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean	
877.232.8995	800.979.9408	32.53.720.550	0120.8555.90	65.6861.0633	55.11.5185.9995	
For country contact information, visit bdbiosciences.com/contact						
Conditions: The ir of any patents. Bl	nformation disclose D Biosciences will n	d herein is not to b ot be help responsi	e constructed as a re ble for patent infrin	ecommendation to u gement or other vio	ise the above product in violation lations that may occur with the	

of any patents. BD biosciences will not be help responsible for patent intringement or other violations that may occur with use of our products. Purchase does not include or carry any right to resell or transfer this product either as a stand-alone product or as a component of another product. Any use of this product other than the permitted use without the express written authorization of Becton, Dickinson and Company is stictly prohibited. For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale. Unless otherwise noted, BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2011 BD