

## Technical Data Sheet

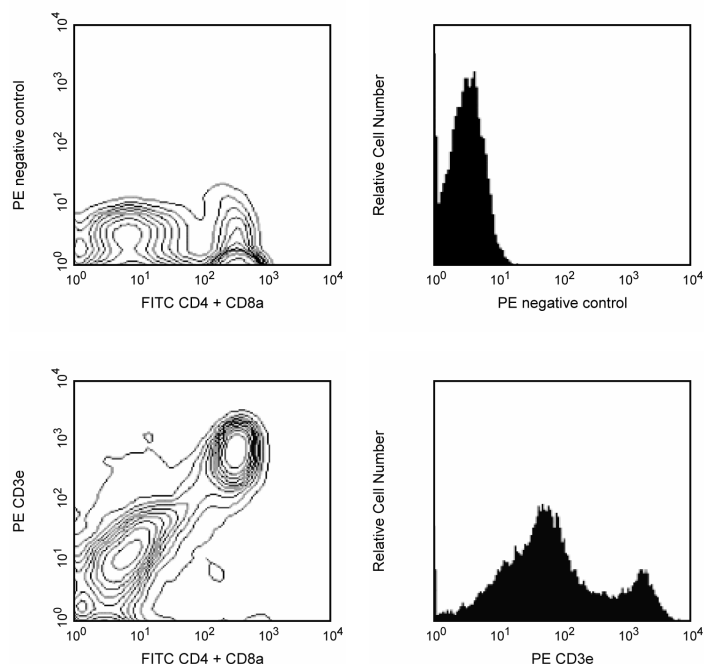
## PE Hamster Anti-Mouse CD3ε

## Product Information

|                         |   |
|-------------------------|---|
| <b>Material Number:</b> | <b>553063</b>   |
| <b>Alternate Name:</b>  | CD3ε chain  |
| <b>Size:</b>            | 0.1 mg  |
| <b>Concentration:</b>   | 0.2 mg/ml   |
| <b>Clone:</b>           | 145-2C11  |
| <b>Immunogen:</b>       | H-2Kb specific cytotoxic T lymphocyte clone BM10-37       |
| <b>Isotype:</b>         | Armenian Hamster IgG1, κ                                  |
| <b>Reactivity:</b>      | QC Testing: Mouse   |
| <b>Storage Buffer:</b>  | Aqueous buffered solution containing ≤0.09% sodium azide. |

## Description

The 145-2C11 antibody reacts with the 25-kDa ε chain of the T-cell receptor-associated CD3 complex, which is expressed on thymocytes, mature T lymphocytes, and NK-T cells. The cytoplasmic domain of CD3ε participates in the signal transduction events which 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 and it has been reported that pre-incubation of thymus cell suspensions at 37°C for 2-4 hours prior to staining enhances the ability of anti-CD3ε and anti-αβ TCR mAbs to detect the T-cell receptor on immature thymocytes.



**CD3ε expression in spleen and thymus.** BALB/c splenocytes were simultaneously stained with FITC-conjugated anti-mouse CD4 mAb RM4-5 (Cat. No. 553046), FITC-conjugated anti-mouse CD8a mAb 53-6.7 (Cat. No. 553030) and PE-conjugated mAb 145-2C11 (bottom left panel). BALB/c thymocytes were stained with PE conjugated mAb 145-2C11 (bottom right panel) or unstained (top right panel). Flow cytometry was performed on a BD FACScan™ flow cytometry system.

## Preparation and Storage

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

The antibody was conjugated with R-PE under optimum conditions, and unconjugated antibody and free PE were removed.

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

## Application Notes

## Application

|                |                  |
|----------------|------------------|
| Flow cytometry | Routinely Tested |
|----------------|------------------|

## BD Biosciences

bdbiosciences.com

|                      |               |               |              |                     |                                |
|----------------------|---------------|---------------|--------------|---------------------|--------------------------------|
| <b>United States</b> | <b>Canada</b> | <b>Europe</b> | <b>Japan</b> | <b>Asia Pacific</b> | <b>Latin America/Caribbean</b> |
| 877.232.8995         | 888.268.5430  | 32.53.720.550 | 0120.8555.90 | 65.6861.0633        | 0800.771.7157                  |

For country-specific contact information, visit [bdbiosciences.com/how\\_to\\_order/](http://bdbiosciences.com/how_to_order/)

Conditions: The information disclosed herein is not to be construed as a recommendation to use the above product in violation of any patents. BD Biosciences will not be held 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 strictly prohibited.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale.

BD, BD Logo and all other trademarks are the property of Becton, Dickinson and Company. ©2011 BD



## Suggested Companion Products

| <u>Catalog Number</u> | <u>Name</u>  | <u>Size</u> | <u>Clone</u> |
|-----------------------|--|-------------|--------------|
| 554714                | BD Cytotfix/Cytoperm™ Fixation/Permeablization Kit | 250 tests   | (none)       |
| 553046                | FITC Rat Anti-Mouse CD4                            | 0.1 mg      | RM4-5        |
| 553030                | FITC Rat Anti-Mouse CD8a                           | 0.1 mg      | 53-6.7       |
| 553972                | PE Hamster IgG1 κ Isotype Control                  | 0.1 mg      | A19-3        |

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to [wwwbdbiosciences.com/pharminggen/protocols](http://wwwbdbiosciences.com/pharminggen/protocols) for technical protocols.
3. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at [wwwbdbiosciences.com/colors](http://wwwbdbiosciences.com/colors).
4. 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://wwwbdbiosciences.com/pharminggen/hamster\\_chart\\_11x17.pdf](http://wwwbdbiosciences.com/pharminggen/hamster_chart_11x17.pdf).
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.

## References

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: Immunoprecipitation)

Kruisbeek AM, Shevach EM. Proliferative assays for T cell function. In: Coligan J, Kruisbeek AM, Margulies D, Shevach EM, Strober W, ed. *Current Protocols in Immunology*. New York: John Wiley and Sons; 1991:3.12.1-3.12.14. (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. (Biology)

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, Immunoprecipitation, 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. (Biology: Immunoprecipitation)

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. (Biology: Activation, Immunoprecipitation, Stimulation)

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: Activation, Stimulation)