

# CD3- $\epsilon$ (FL-207): sc-20918

## BACKGROUND

The T cell antigen receptor (TCR) recognizes foreign antigens and translates such recognition events into intracellular signals that elicit a change in the cell from a dormant to an activated state. Much of this signaling process can be attributed to a multisubunit complex of proteins that associates directly with the TCR. This complex has been designated CD3 (cluster of differentiation 3). It is composed of five invariant polypeptide chains that associate to form three dimers: a heterodimer of  $\gamma$  and  $\epsilon$  chains (CD3- $\gamma$  and CD3- $\epsilon$ ), a heterodimer of  $\delta$  and  $\epsilon$  chains (CD3- $\delta$  and CD3- $\epsilon$ ) and a homodimer of two  $\zeta$  chains (CD3- $\zeta$ ) or a heterodimer of  $\zeta$  and  $\eta$  chains (CD3- $\zeta$  and CD3- $\eta$ ). CD3- $\zeta$  and CD3- $\eta$  are encoded by the same gene, but differ in their carboxyl-terminal ends due to an alternative splicing event. CD3- $\gamma$ , CD3- $\epsilon$  and CD3- $\delta$  each contain a single copy of a conserved immunoreceptor tyrosine-based activation motif (ITAM). In contrast, CD3- $\zeta$  contains three consecutive copies of the same motif. Phosphorylated ITAMs act as docking sites for protein kinases such as ZAP-70 and Syk and are also capable of regulating their kinase activity. The crystal structure of the ZAP-70 SH2 domains bound to CD3- $\zeta$  ITAMs has been solved.

## CHROMOSOMAL LOCATION

Genetic locus: CD3E (human) mapping to 11q23.3; Cd3e (mouse) mapping to 9 A5.2.

## SOURCE

CD3- $\epsilon$  (FL-207) is a rabbit polyclonal antibody raised against amino acids 1-207 representing full length CD3- $\epsilon$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

CD3- $\epsilon$  (FL-207) is recommended for detection of CD3- $\epsilon$  of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CD3- $\epsilon$  siRNA (h): sc-29989, CD3- $\epsilon$  siRNA (m): sc-29990, CD3- $\epsilon$  shRNA Plasmid (h): sc-29989-SH, CD3- $\epsilon$  shRNA Plasmid (m): sc-29990-SH, CD3- $\epsilon$  shRNA (h) Lentiviral Particles: sc-29989-V and CD3- $\epsilon$  shRNA (m) Lentiviral Particles: sc-29990-V.

Molecular Weight of CD3- $\epsilon$ : 23 kDa.

Positive Controls: CD3- $\epsilon$  (h): 293T Lysate: sc-116055, Jurkat whole cell lysate: sc-2204 or CCRF-CEM cell lysate: sc-2225.

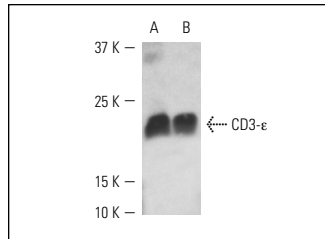
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

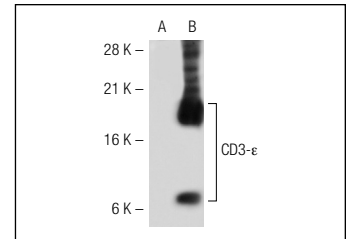
## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## DATA



CD3- $\epsilon$  (FL-207): sc-20918. Western blot analysis of CD3- $\epsilon$  expression in Jurkat (A) and CCRF-CEM (B) whole cell lysates.



CD3- $\epsilon$  (FL-207): sc-20918. Western blot analysis of CD3- $\epsilon$  expression in non-transfected: sc-117752 (A) and human CD3- $\epsilon$  transfected: sc-116055 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- Kindle, L., et al. 2006. Human microvascular endothelial cell activation by IL-1 and TNF $\alpha$  stimulates the adhesion and transendothelial migration of circulating human CD14<sup>+</sup> monocytes that develop with RANKL into functional osteoclasts. *J. Bone Miner. Res.* 21: 193-206.
- Kesti, T., et al. 2007. Reciprocal regulation of SH3 and SH2 domain binding via tyrosine phosphorylation of a common site in CD3- $\epsilon$ . *J. Immunol.* 179: 878-885.
- Lee, M., et al. 2007. Immunoscreening of a cutaneous T-cell lymphoma library for plasma membrane proteins. *Cancer Immunol. Immunother.* 56: 783-795.
- Drbal, K., et al. 2007. Single-molecule microscopy reveals heterogeneous dynamics of lipid raft components upon TCR engagement. *Int. Immunol.* 19: 675-684.
- Sirois, M., et al. 2008. R5 and X4 HIV viruses differentially modulate host gene expression in resting CD4<sup>+</sup> T cells. *AIDS Res. Hum. Retroviruses* 24: 485-493.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **CD3- $\epsilon$  (UCH-T1): sc-1179** or **CD3- $\epsilon$  (145-2C11): sc-18871**, our highly recommended monoclonal alternatives to CD3- $\epsilon$  (FL-207). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **CD3- $\epsilon$  (UCH-T1): sc-1179**.