CD3E Cell Lysate – Tissue Lysate

PRODUCT OVERVIEW

Product Name	CD3 epsilon/CD3e, Cell Lysate
Full Product Name	Human CD3 epsilon/CD3e HEK293 Overexpression Lysate
Product Gene Name	CD3E cell lysate
Product Synonym Names	Human CD3e/CD3 epsilon CHO Cell Lysate (WB positive control); CD3e molecule, epsilon (CD3-TCR complex); Human CD3 epsilon Overexpression Lysate; Human IMD18 Overexpression Lysate; Human T3E Overexpression Lysate; Human TCRE Overexpression Lysate
Sequence	Met1-Asp12 6
Host	HEK293 Cells
Form/Format	1x Sample Buffer (1x modified RIPA buffer+1x SDS loading buffer). Modified RIPA Lysis Buffer: 50 mM Tris-HCl pH 7.4, 150 mM NaCl, 1mM EDTA, 1% Triton X-100, 0.1% SDS, 1% Sodium deoxycholate, 1mM PMSF.
Preparation and Storage	Store at 4 degree C for up to twelve months from date of receipt. After re-dissolution, aliquot and store at -80 degree C for up to twelve months. Avoid repeated freeze-thaw cycles. Samples are stable for up to twelve months from date of receipt.
Sequence Positions	342aa
OMIM	gene 615615
3D Structure	ModBase 3D Structure for P07766
Species	Human
Recommend Usage	1. Centrifuge the tube for a few seconds and ensure the pellet at the bottom of the tube.**2. Re-dissolve the pellet using 200uL pure water and boil for 2-5 min.** **3. Store the lyophilized cell lysate at 4 degree C. After re-dissolution, recommend to aliquot it into smaller quantities and store at -80 degree C.**
Sequence Construction	A DNA sequence encoding the human CD3E (NP_000724.1) (Met1-Asp126) was expressed with the Fc region of human IgG1 at the C-terminus.
Preparation Method	Cell lysate was prepared by homogenization in ice-cold modified RIPA Lysis Buffer with cocktail of protease inhibitors. Cell debris was removed by centrifugation. Protein concentration was determined by Bradford assay (protein assay, Microplate Standard assay). The cell lysate was boiled for 5 min in 1 x SDS loading buffer (50mM Tris-HCl pH 6.8, 12.5% glycerol, 1% sodium dodecylsulfate, 0.01% bromophenol blue) containing 5% b-mercaptoethanol, and lyophilized.
Product Categories/Family for CD3E cell lysate	ITIM/ITAM Immunoreceptors and Related Molecules; T Cell Receptor Signaling Pathway
Applications Tested/Suitable for CD3E cell lysate	Western Blot (WB)
Application Notes for CD3E cell lysate	WB: Use at an assay dependent dilution.

Related Product Information for CD3E cell lysate	T-cell surface glycoprotein CD3 epsilon chain, also known as CD3E, is a single-pass type I membrane protein. CD3E contains 1 Ig-like (immunoglobulin-like) domain and 1 ITAM domain. CD3E, together with CD3-gamma, CD3-delta and CD3-zeta, and the T-cell receptor alpha/beta and gamma/delta heterodimers, forms the T cell receptor-CD3 complex. The CD3 epsilon subunit of the T cell receptor (TCR) complex contains two defined signaling domains, a proline-rich sequence and an immune tyrosine activation motifs (ITAMs), and this complex undergoes a conformational change upon ligand binding that is thought to be important for the activation of T cells. In the CD3 epsilon mutant mice, all stages of T cell development and activation that are TCR-dependent were impaired, but not eliminated, including activation of mature naive T cells with the MHCII presented superantigen, staphylococcal enterotoxin B, or with a strong TCR cross-linking antibody specific for either TCR-Cbeta or CD3 epsilon. T cell receptor-CD3 complex plays an important role in coupling antigen recognition to several intracellular signal-transduction pathways. This complex is critical for T-cell development and function, and represents one of the most complex transmembrane receptors. CD3E plays an essential role in T-cell development, and defects in CD3E gene cause severe immunodeficiency. Homozygous mutations in CD3D and CD3E genes lead to a complete block in T-cell development and thus to an early-onset severe combined immunodeficiency phenotype. This Human CD3 epsilon/CD3e overexpression lysate was created in HEK293 Cells and intented for use as a Western blot (WB) positive control. Purification of CD3 epsilon/CD3e protein from the overexpression lysate was verified.
Product References and Citations for CD3E cell lysate	Fischer A, et al. (2005) CD3 deficiencies. Curr Opin Allergy Clin Immunol. 5(6): 491-5. Wang Y, et al. (2009) A conserved CXXC motif in CD3epsilon is critical for T cell development and TCR signaling. PLoS Biol. 7(12): e1000253. Martnez-Martn N, et al. (2009) Cooperativity between T cell receptor complexes revealed by conformational mutants of CD3epsilon. Sci Signal. 2(83): ra43. Deford-Watts LM, et al. (2009) The cytoplasmic tail of the T cell receptor CD3 epsilon subunit contains a phospholipid-binding motif that regulates T cell functions. J Immunol. 183(2): 1055-64.
Other Notes	Small volumes of CD3E cell lysate vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for CD3E purchase	MBS8114271 is a cell lysate targeting CD3E. Also known as Human CD3 epsilon/CD3e HEK293 Overexpression Lysate. Host: HEK293 Cells.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for CD3E. It may not necessarily be applicable to this product.

NCBI GI #	4502671
NCBI GeneID	916
NCBI Accession #	NP_000724.1
UniProt Primary Accession #	P07766
UniProt Secondary Accession #	A8K997
UniProt Related Accession #	P07766
GenBank Nucleotide #	NM_000733.3
NCBI Official Full Name	T-cell surface glycoprotein CD3 epsilon chain
NCBI Official Synonym Full Names	CD3e molecule, epsilon (CD3-TCR complex)
NCBI Official Symbol	CD3E
NCBI Official Synonym Symbols	T3E; TCRE; IMD18
UniProt Protein Name	T-cell surface glycoprotein CD3 epsilon chain
UniProt Synonym Protein Names	T-cell surface antigen T3/Leu-4 epsilon chain; CD_antigen: CD3e
Protein Family	T-cell surface glycoprotein
UniProt Gene Name	CD3E

UniProt Synonym Gene Names	T3E
UniProt Entry Name	CD3E_HUMAN
NCBI Protein Information	T-cell surface glycoprotein CD3 epsilon chain; CD3-epsilon; CD3e antigen, epsilon polypeptide (TiT3 complex); T-cell antigen receptor complex, epsilon subunit of T3; T-cell surface antigen T3/Leu-4 epsilon chain
NCBI Summary for CD3E	The protein encoded by this gene is the CD3-epsilon polypeptide, which together with CD3-gamma, -delta and -zeta, and the T-cell receptor alpha/beta and gamma/delta heterodimers, forms the T-cell receptor-CD3 complex. This complex plays an important role in coupling antigen recognition to several intracellular signal-transduction pathways. The genes encoding the epsilon, gamma and delta polypeptides are located in the same cluster on chromosome 11. The epsilon polypeptide plays an essential role in T-cell development. Defects in this gene cause immunodeficiency. This gene has also been linked to a susceptibility to type I diabetes in women. [provided by RefSeq, Jul 2008]
UniProt Comments for CD3E	CD3E: a T cell surface glycoprotein that is a component of the T cell antigen receptor. The recruitment of Nck by CD3 epsilon reveals a ligand-induced conformational change essential for T cell receptor signaling and synapse formation. Contains 1 immunoglobulin-like domain and 1 ITAM domain. Protein type: Receptor, misc.; Membrane protein, integral Chromosomal Location of Human Ortholog: 11q23 Cellular Component: T cell receptor complex; integral to plasma membrane; plasma membrane; immunological synapse; alpha-beta T cell receptor complex; intercellular junction; external side of plasma membrane Molecular Function: protein binding; transmembrane receptor activity; receptor signaling complex scaffold activity; protein heterodimerization activity; receptor signaling protein activity; T cell receptor binding; SH3 domain binding; protein kinase binding Biological Process: regulation of immune response; T cell activation; positive regulation of interleukin-2 biosynthetic process; signal complex assembly; positive regulation of calcium-mediated signaling; negative thymic T cell selection; T cell receptor signaling pathway; positive regulation of interleukin-4 production; regulation of apoptosis; G-protein coupled receptor protein signaling pathway; positive regulation of interferon-gamma production; positive regulation of peptidyl-tyrosine phosphorylation; cell surface receptor linked signal transduction; negative regulation of smoothened signaling pathway; T cell costimulation; protein complex assembly; positive regulation of alpha-beta T cell proliferation; positive regulation of T cell proliferation; positive regulation of T cell anergy; transmembrane receptor protein tyrosine kinase signaling pathway; response to nutrient Disease: Immunodeficiency 18
Research Articles on CD3E	**1.** that Nck recruitment to the TCR is fundamental to mount an efficient T cell response in vivo, and that the Nck-CD3epsilon interaction may represent a target for pharmacological modulation of the immune response.
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