

Human CD3e / CD3 epsilon Protein (His & Fc Tag)

Catalog Number: 10977-H03H



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

CD3 epsilon; IMD18; T3E; TCRC; AI504783; CD3; CD3epsilon; T3e

Protein Construction:

A DNA sequence encoding the human CD3E (Met 1-Asp126) was fused with the C-terminal polyhistidine-tagged Fc region of human IgG1 at the C-terminus.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: (84.6+14.1) % as determined by SDS-PAGE

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Gln 22

Molecular Mass:

The secreted recombinant human CD3E is a disulfide-linked homodimeric protein. The reduced monomer comprises 355 amino acids and has a predicted molecular mass of 40 kDa. As a result of glycosylation, it migrates as an approximately 44-53 and 38 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

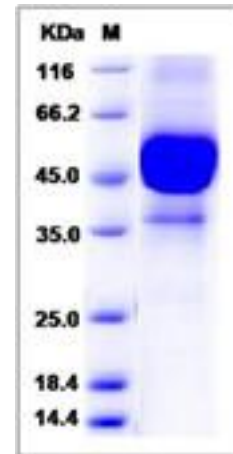
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

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 naïve 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.

References

1. Fischer A, *et al.* (2005) CD3 deficiencies. *Curr Opin Allergy Clin Immunol.* 5(6): 491-5.
2. 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.
3. Martinez-Martín N, *et al.* (2009) Cooperativity between T cell receptor complexes revealed by conformational mutants of CD3epsilon. *Sci Signal.* 2(83): ra43.

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