

CD3E/CD3 epsilon

Catalog # PVGS1864

Product Information

Primary Accession Species	P07766 Human
Sequence	Asp23-Asp126
Purity	> 95% as determined by Bis-Tris PAGE
Endotoxin Level	Less than 1EU per μ g by the LAL method.
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized Anti-CD3 Antibody, hFc Tag at 1 μ g/ml (100 μ l/well) on the plate can bind CD3E/CD3 epsilon[Biotin], His, Human. Test result was comparable to standard batch.
Expression System	HEK293
Theoretical Molecular Weight	12.6 kDa
Formulation Reconstitution	Lyophilized from a 0.22 μ m filtered solution in PBS , (pH 7.4). Centrifuge the tube before opening. Reconstituting to a concentration more than 100 μ g/ml is recommended. Dissolve the lyophilized protein in distilled water.
Storage & Stability	Upon receiving, the product remains stable up to 6 months at -20 °C or below. Upon reconstitution, the product should be stable for 3 months at -80 °C. Avoid repeated freeze-thaw cycles.

Additional Information

Gene ID	916
Other Names	T-cell surface glycoprotein CD3 epsilon chain, T-cell surface antigen T3/Leu-4 epsilon chain, CD3e, CD3E, T3E
Target Background	CD3E, is a single-pass type I membrane protein. CD3 (cluster of differentiation 3) T cell co-receptor helps to activate both the cytotoxic T cell (CD8 naive T cells) and also T helper cells (CD4 naive T cells). It consists of a protein complex and is composed of four distinct chains. In mammals, the complex contains a CD3 γ chain, a CD3 δ chain, and two CD3 ϵ chains.

Protein Information

Name	CD3E
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Synonyms

T3E

Function

Part of the TCR-CD3 complex present on T-lymphocyte cell surface that plays an essential role in adaptive immune response (PubMed:[15294938](#), PubMed:[15546002](#), PubMed:[2470098](#), PubMed:[40592325](#), PubMed:[8490660](#)). When antigen presenting cells (APCs) activate T-cell receptor (TCR), TCR-mediated signals are transmitted across the cell membrane by the CD3 chains CD3D, CD3E, CD3G and CD247/CD3Z (PubMed:[2470098](#), PubMed:[40592325](#)). All CD3 chains contain immunoreceptor tyrosine-based activation motifs (ITAMs) in their cytoplasmic domain (PubMed:[2470098](#), PubMed:[40592325](#)). Upon TCR engagement, these motifs become phosphorylated by Src family protein tyrosine kinases LCK and FYN, resulting in the activation of downstream signaling pathways (PubMed:[2470098](#), PubMed:[40592325](#)). CD3E ITAM phosphorylation creates docking sites for the protein kinase ZAP70 leading to ZAP70 phosphorylation and its conversion into a catalytically active enzyme (By similarity). In addition of this role of signal transduction in T-cell activation, CD3E plays an essential role in correct T-cell development (By similarity). Also participates in internalization and cell surface down-regulation of TCR-CD3 complexes via endocytosis sequences present in CD3E cytosolic region (PubMed:[10384095](#), PubMed:[26507128](#)). In addition to its role as a TCR coreceptor, it serves as a receptor for ITPRIPL1 (PubMed:[38614099](#)). Ligand recognition inhibits T-cell activation by promoting interaction with NCK1, which prevents CD3E-ZAP70 interaction and blocks the ERK- NFkB signaling cascade and calcium influx (PubMed:[12110186](#), PubMed:[38614099](#)).

Cellular Location

Cell membrane; Single-pass type I membrane protein

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.