CD3D Protein, Mouse (HEK293, Fc)

Cat. No.:	HY-P75654
Synonyms:	T-cell surface glycoprotein CD3 delta chain; T-cell receptor T3 delta chain; T3d
Species:	Mouse
Source:	HEK293
Accession:	P04235 (F22-A105)
Gene ID:	12500
Molecular Weight:	Approximately 48-65 kDa due to the glycosylation.

PROPERTIES

AA Sequence	F K I Q V T E Y E D K V F V T C N T S V M H L D G T V E G W F A K N K T L N L G K G V L D P R G I Y L C N G T E Q L A K V V S S V Q V H Y R M C Q N C V E L D S G T M A
Biological Activity	Immobilized Recombinant Human CD3 epsilon Protein at 10 μg/mL (100 μL/well) can bind Biotinylated Mouse CD3D protein. The ED_{50} for this effect is 4.477 μg/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The CD3D protein is a crucial component of the TCR-CD3 complex found on the surface of T-lymphocytes, playing a pivotal role in adaptive immune responses. Upon activation of the T-cell receptor (TCR) by antigen-presenting cells (APCs), CD3D, along with CD3E, CD3G, and CD3Z, transmits TCR-mediated signals across the cell membrane. These CD3 chains contain immunoreceptor tyrosine-based activation motifs (ITAMs) in their cytoplasmic domain, which, upon phosphorylation by LCK and FYN kinases, activate downstream signaling pathways. Beyond its role in signal transduction for T-cell activation, CD3D is indispensable in thymocyte differentiation, contributing to proper intracellular TCR-CD3 complex assembly and

surface expression. Dysfunction in the TCR-CD3 complex leads to impaired thymocyte differentiation. CD3D further interacts with CD4 and CD8, establishing a functional link between the TCR and coreceptors CD4 and CD8, crucial for the activation and positive selection of CD4 or CD8 T-cells. The TCR-CD3 complex consists of CD3D/CD3E and CD3G/CD3E heterodimers, forming trimers that associate with TCRalpha and TCRbeta. Additionally, the hexamer interacts with CD3Z homodimer to complete the TCR-CD3 complex, wherein TCRalpha and TCRbeta can be replaced by TCRgamma and TCRdelta. This intricate interaction network highlights the multifaceted role of CD3D in orchestrating T-cell responses.

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