

CD3D-CD3E Heterodimer Protein, Human (HEK293, Fc-Flag&Fc-His)

Cat. No.:	HY-P70434
Synonyms:	CD3E & CD3D; CD3 delta & CD3 epsilon; CD3 delta /epsilon
Species:	Human
Source:	HEK293
Accession:	P04234 (F22-A105)&P07766 (D23-D126)
Gene ID:	915&916
Molecular Weight:	40-52 kDa

PROPERTIES

AA Sequence	<pre> FKIPIEELED RVFVNCNTSI TWVEGTVGTL LSDITRLDLG KRILDPRGIY RCNGTDIYKD KESTVQVHYR MCQSCVELDP ATVA & : DNEEMGGIT QTPYKVSISG TTVILTCPQY PGSEILWQHN DKNIGGDEDD KNIGSDEEDHL SLKEFSELEQ SGYYVCYPRG SKPEDANFYL YLRARVCENC MEMD </pre>
Biological Activity	Measured by its ability to bind OKT3-mIgG2a in a functional ELISA. The ED ₅₀ for this effect is 11.31 ng/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4 or 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. 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 from date of receipt. 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	CD3D Protein, an integral part of the TCR-CD3 complex on the surface of T-lymphocytes, plays a pivotal role in the adaptive immune response. Activated by antigen-presenting cells (APCs), the T-cell receptor (TCR) transmits signals through the CD3 chains CD3D, CD3E, CD3G, and CD3Z, which harbor immunoreceptor tyrosine-based activation motifs (ITAMs) in their
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cytoplasmic domain. Upon TCR engagement, these ITAMs are phosphorylated by Src family protein tyrosine kinases LCK and FYN, activating downstream signaling pathways. Beyond its role in signal transduction for T-cell activation, CD3D is indispensable for thymocyte differentiation, contributing to the correct intracellular assembly and surface expression of the TCR-CD3 complex. Thymocytes lacking a functional TCR-CD3 complex face impaired differentiation. CD3D also interacts with coreceptors CD4 and CD8, establishing a functional link between the TCR and coreceptors crucial for the activation and positive selection of CD4 or CD8 T-cells. The TCR-CD3 complex comprises CD3D/CD3E and CD3G/CD3E heterodimers, forming TCRalpha/CD3E/CD3G and TCRbeta/CD3G/CD3E trimers that, in turn, interact with CD3Z homodimers to complete the hexameric TCR-CD3 complex. Alternatively, TCRalpha and TCRbeta can be substituted by TCRgamma and TCRdelta. These intricate interactions highlight CD3D's multifaceted role in orchestrating T-cell responses.

Caution: Product has not been fully validated for medical applications. For research use only.

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