

CD3E-CD3G Heterodimer Protein, Cynomolgus (HEK293, Fc)

Cat. No.:	HY-P77605
Synonyms:	CD3; CD3G; CD3g; T3G; CD3e; CD3E; CD3 epsilon&CD3 gamma; CD3E&CD3G
Species:	Cynomolgus
Source:	HEK293
Accession:	Q95LI5 (Q22-D117)&Q95LI7 (Q23-T113)
Gene ID:	102133065&102134381
Molecular Weight:	36.9 kDa(CD3E) & 36.5 kDa(CD3G)

PROPERTIES

Biological Activity	Measured by its binding ability in a functional ELISA. When Cynomolgus CD3E&CD3G is immobilized at 0.5 µg/mL (100 µL/well), Biotinylated Anti-CD3 Antibody binds with an EC ₅₀ of 54.9 ng/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.4. Normally 5% trehalose is added as protectant before lyophilization.
Endotoxin Level	<0.02 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.
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 CD3E/CD3 epsilon 1-27 peptide, integral to the TCR-CD3 complex on T-lymphocyte cell surfaces, plays a crucial role in adaptive immune responses. Upon activation by antigen-presenting cells (APCs), the T-cell receptor (TCR) transmits signals across the cell membrane through CD3 chains, including CD3D, CD3E, CD3G, and CD3Z, each containing immunoreceptor tyrosine-based activation motifs (ITAMs) in their cytoplasmic domains. Phosphorylation of these ITAMs by Src family protein tyrosine kinases LCK and FYN, upon TCR engagement, activates downstream signaling pathways. Beyond its role in signal transduction, CD3E is indispensable for correct T-cell development, initiating the assembly of the TCR-CD3 complex by forming heterodimers CD3D/CD3E and CD3G/CD3E. Additionally, CD3E participates in the internalization and cell surface down-regulation of TCR-CD3 complexes through endocytosis sequences in its cytosolic region. The TCR-CD3 complex, comprising CD3D/CD3E and CD3G/CD3E heterodimers, preferentially associates with TCRalpha and TCRbeta, forming trimers. This hexamer then interacts with CD3Z homodimers to complete the TCR-CD3 complex. Alternatively, TCRalpha and TCRbeta can be replaced by TCRgamma and TCRdelta. The CD3E/CD3 epsilon 1-27 peptide also interacts with CD6, NCK1, and NUMB, with the NUMB interaction being crucial for TCR-CD3 internalization and subsequent degradation.

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

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