

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human CD3 delta/CD3d protein		
	Human CD3 delta/CD3d (Phe22-Ala105) Accession # P04234	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence	Phe22		
Analysis			
Structure / Form	Disulfide linked homodimer		
Predicted Molecular Mass	36 kDa		

SPECIFICATIONS

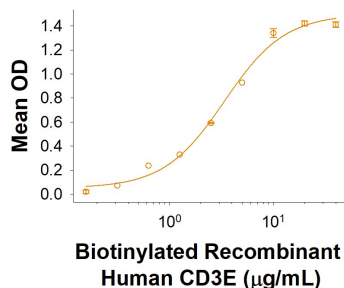
SDS-PAGE	45-55 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human CD3 delta/CD3d Fc Chimera (Catalog # 10280-TC) is immobilized at 1.0 µg/mL, 100 µL/well, the concentration of Recombinant Human CD3E Fc Chimera Biotinylated Protein that produces 50% of the optimal binding response is approximately 1.0-6.0 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

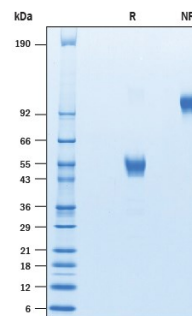
DATA

Binding Activity



When Recombinant Human CD3 delta/CD3d Fc Chimera (Catalog # 10280-TC) is immobilized at 1.0 µg/mL, 100 µL/well, the concentration of Biotinylated Recombinant Human CD3E Fc Chimera that produces 50% of the optimal binding response is approximately 1.0-6.0 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Human CD3 delta/CD3d Fc Chimera (Catalog # 10280-TC) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 45-55 kDa and 90-110 kDa, respectively.

BACKGROUND

CD3d, also known as CD3 delta and T3D, is a single-pass type I membrane protein. CD3 delta/CD3d is part of the T-cell receptor/CD3 complex (TCR/CD3 complex) and is involved in T-cell development and signal transduction (1). The encoded membrane protein represents the delta subunit of the CD3 complex, and along with four other CD3 subunits, binds either TCR alpha/beta or TCR gamma/delta to form the TCR/CD3 complex on the surface of T cells (2). CD3 delta/CD3d contains an 84 amino acid extracellular domain, a 21 amino acid transmembrane domain, and a 45 amino acid cytoplasmic domain. Human CD3 delta/CD3d shares 89%, 61%, and 57% sequence identity in its extracellular domain with its cynomolgus monkey, rat, and mouse homologs, respectively. CD3 delta/CD3d, like other subunit members CD3G and CD3E of the TCR-CD3 complex, contains an extracellular Ig domain and a single immunoreceptor tyrosine-based activation motif (3, 4). Defects in CD3 delta/CD3d cause severe combined immunodeficiency autosomal recessive T-cell-negative/B-cell-positive/NK-cell-positive (T-/B+/NK+ SCID) which is a genetically and clinically heterogeneous group of rare congenital disorders characterized by impairment of both humoral and cell-mediated immunity, leukopenia, and low or absent antibody levels (5, 6).

References:

1. Gil, J. *et al.* (2011) *J. Clin. Invest.* **121**:3872.
2. Carson, G.R. *et al.* (1991) *J. Biol. Chem.* **266**:7883.
3. Birnbaum, M.E. *et al.* (2014). *Proc. Natl. Acad. Sci. USA.* **111**:17576.
4. Wucherpfennig, K. *et al.* (2010). *Cold Spring Harb Perspect. Biol.* **2**:a005140.
5. Kim, S.T. *et al.* (2010) *J. Immunol.* **185**:2951.
6. Holst, J. *et al.* (2008) *Nat. Immunol.* **9**:658.