Data Sheet (Cat.No.TMPY-00616)

TargetMol

CD3 epsilon/CD3e Protein, Canine, Recombinant (hFc)

General Information

Synonyms:	CD3e molecule, ε (CD3-TCR complex);CD3 ε/CD3e;CD3e molecule, epsilon (CD3-TCR complex)
Protein Construction:	A DNA sequence encoding the canine CD3E (NP_001003379.1) (Met1-Leu122) was expressed with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Gln 22
Species:	Canine
Expression Host:	HEK293 Cells
Accession:	P27597
Molecular Weight:	38.2 kDa (predicted)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 85 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

T-cell surface glycoprotein CD3 epsilon chain, also known as CD3E, is a single-pass type I membrane protein. CD3E contains 1 Ig-like (immunoglobulin-like) domain and 1 ITAM domain. CD3E, together with CD3-gamma, CD3-delta and CD3-zeta, and the T-cell receptor alpha/beta and gamma/delta heterodimers, forms the T cell receptor-CD3 complex. The CD3 epsilon subunit of the T cell receptor (TCR) complex contains two defined signaling domains, a proline-rich sequence and an immune tyrosine activation motifs (ITAMs), and this complex undergoes a

conformational change upon ligand binding that is thought to be important for the activation of T cells. In the CD3 epsilon mutant mice, all stages of T cell development and activation that are TCR-dependent were impaired, but not eliminated, including activation of mature naïve T cells with the MHCII presented superantigen, staphylococcal enterotoxin B, or with a strong TCR cross-linking antibody specific for either TCR-Cbeta or CD3 epsilon. T cell receptor-CD3 complex plays an important role in coupling antigen recognition to several intracellular signal-transduction pathways. This complex is critical for T-cell development and function, and represents one of the most complex transmembrane receptors. CD3E plays an essential role in T-cell development, and defects in CD3E gene cause severe immunodeficiency. Homozygous mutations in CD3D and CD3E genes lead to a complete block in T-cell development and thus to an early-onset severe combined immunodeficiency phenotype.Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

Fischer A, et al. (2005) CD3 deficiencies. Curr Opin Allergy Clin Immunol. 5(6): 491-5.
Wang Y, et al. (2009) A conserved CXXC motif in CD3epsilon is critical for T cell development and TCR signaling. PLoS Biol. 7(12): e1000253.
Martnez-Martn N, et al. (2009) Cooperativity between T cell receptor complexes revealed by conformational mutants of CD3epsilon. Sci Signal. 2(83): ra43.
Deford-Watts LM, et al. (2009) The cytoplasmic tail of the T cell receptor CD3 epsilon subunit contains a phospholipid-binding motif that regulates T cell functions. J Immunol. 183(2): 1055-64.