Canine CD3d / CD3 delta Protein (Fc Tag)

Catalog Number: **70108-D02H**

General Information

Gene Name Synonym:

CD3D

Protein Construction:

A DNA sequence encoding the canine CD3D (XP_536556.1) (Met1-Thr103) was expressed with the Fc region of human IgG1 at the C-terminus.

Source: Canine

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE.

Endotoxin:

< 1.0 EU per μg protein as determined by the LAL method.

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Phe 22

Molecular Mass:

The recombinant canine CD3D consists 320 amino acids and predicts a molecular mass of 36.2 kDa.

Formulation:

Lyophilized from sterile PBS, pH 7.4.

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

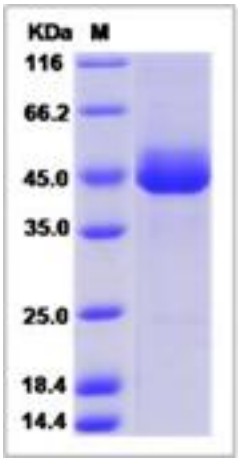
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

T-cell surface glycoprotein CD3 delta chain, also known as CD3D, is a single-pass type I membrane protein. CD3D, together with CD3-gamma, CD3-epsilon and CD3-zeta, and the T-cell receptor alpha/beta and gamma/delta heterodimers, forms the T cell receptor-CD3 complex. The majority of T cell receptor (TCR) complexes in mice and humans consist of a heterodimer of polymorphic TCRalpha and beta chains along with invariant CD3gamma, delta, epsilon, and zeta chains. CD3 chains are present as CD3gammaepsilon, deltaepsilon, and zetazeta dimers in the receptor complex and play critical roles in the antigen receptor assembly, transport to the cell surface, and the receptor-mediated signal transduction. 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. The T cell receptor-CD3 complex is unique in having ten cytoplasmic immunoreceptor tyrosine-based activation motifs (ITAMs). CD3D contains 1 ITAM domain and has been shown to interact with CD8A. In the mouse, knockout of CD3delta allows some degree of T lymphocyte differentiation since mature CD4 and CD8 as well as TCRgammadelta T lymphocytes are observed in the periphery. In contrast, deleterious mutation of the CD3delta encoding gene in the human leads to a severe combined immunodeficiency characterised by the complete absence of mature T cell subpopulations including TCRalpha/beta and TCRgamma/delta. Defects in 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. In humans the absence of CD3 delta results in a complete arrest in thymocyte development at the stage of double negative to double positive transition and the development of gamma delta T-cell receptor-positive T cells is also impaired.

References

1.Roifman CM. (2004) CD3 delta immunodeficiency. Curr Opin Allergy Clin Immunol. 4(6): 479-84. 2.Pan Q, *et al.* (2006) Different role for mouse and human CD3delta/epsilon heterodimer in preT cell receptor (preTCR) function: human CD3delta/epsilon heterodimer restores the defective preTCR function in CD3gamma- and CD3gammadelta-deficient mice. Mol Immunol. 43(11): 1741-50. 3.Le Deist F, *et al.* (2007) Expression anomalies of the CD3-TCR complex expression and immunodeficiencies. Med Sci (Paris). 23(2): 161-6.