Human TGFBR2 Protein (His & Fc Tag)

Catalog Number: **10358-H03H**

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

AAT3; FAA3; LDS1B; LDS2; LDS2B; MFS2; RIIC; TAAD2; TGFbeta-RII; TGFR-2

Protein Construction:

A DNA sequence encoding the extracellular domain (Met 1-Asp 159) of human TGFβ receptor 2 (NP_003233.4) was expressed with the fused C-terminal His-tagged Fc region of human IgG1 at the C-terminus.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 97 % as determined by SDS-PAGE

Bio Activity:

1. Measured by its ability to inhibit TGF-beta1 activity on Mv-1-lu mink lung epithelial cells. The ED_{50} for this effect is typically 0.2-3.0 μg/ml in the presence of 1 ng/mL of recombinant human TGF-beta1.
2. Measured by its binding ability in a functional ELISA. Immobilized TGFBR2h (1-166Q)(Cat:10358-H08B) at 10 μg/mL (100 μL/well) can bind TGFB1-His/Biotin (Cat:10804-H08H), the EC_{50} of human TGFB1-His/Biotin (Cat:10804-H08H) is 120-240 ng/mL.

Endotoxin:

< 1.0 EU per μg of the 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: Ile 24

Molecular Mass:

The recombinant human TGFβ R2/Fc is a disulfide-linked homodimeric protein after removal of the signal peptide. The monomer consists of 383 amino acids and predicts a molecular mass of 43.4 kDa. By SDS-PAGE under reducing conditions, the apparent molecular mass of this monomer is approximately 60-65 kDa due to the glycosylation.

Formulation:

Lyophilized from sterile 100mM Glycine, 10mM NaCl, 50mM Tris, pH 7.5

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:

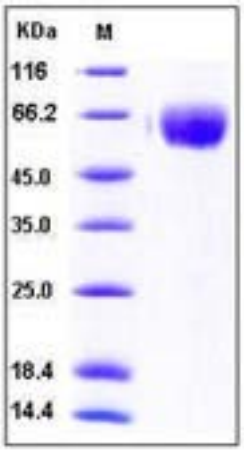
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

TGFBR2 is member of the Ser/Thr protein kinase family and the TGFB receptor subfamily. It is a transmembrane protein. TGFBR2 is comprised by a C-terminal protein kinase domain and an N-terminal ectodomain. The ectodomain consists of a compact fold containing nine beta-strands and a single helix stabilised by a network of six intra strand disulphide bonds. The folding topology includes a central five-stranded antiparallel beta-sheet, eight-residues long at its centre, covered by a second layer consisting of two segments of two-stranded antiparallel beta-sheets. TGFBR2 has a protein kinase domain, forms a heterodimeric complex with another receptor protein, and binds TGF-beta. This receptor/ligand complex phosphorylates proteins, which then enter the nucleus and regulate the transcription of a subset of genes related to cell proliferation. Mutations in TGFBR2 gene have been associated with Marfan syndrome, Loeys-Deitz Aortic Aneurysm Syndrome, and the development of various types of tumors. TGFBR2 attenuates the biological activities of TGF-beta in colorectal cancer. TGFBR2 expression is increased in oral squamous cell carcinoma cells. Its expression is decreased by IL-1beta while inducing Sp3 via NFkappaB. TGFB2 and TGFBR2 are involved in the antiestrogenic activity.

References

1.Yu Y, *et al.* (2012) MicroRNA-21 induces stemness by downregulating transforming growth factor beta receptor 2 (TGFβR2) in colon cancer cells. Carcinogenesis. 33(1):68-76. 2.Shima K, *et al.* (2011) TGFBR2 and BAX mononucleotide tract mutations, microsatellite instability, and prognosis in 1072 colorectal cancers. PLoS One. 6(9):e25062. 3.Biros E, *et al.* (2011) Meta-analysis of the association between single nucleotide polymorphisms in TGF-β receptor genes and abdominal aortic aneurysm. Atherosclerosis. 219(1):218-23.