Data Sheet (Cat.No.TMPY-05157)

TargetMol

TGFBR2 Protein, Human, Recombinant (His)

General Information

Synonyms:	LDS2B;FAA3;TAAD2;MFS2;TGFR-2;TGFbeta-RII;transforming growth factor, beta receptor II (70/80kDa);LDS2;transforming growth factor, β receptor II;LDS1B;AAT3;TGFβ-RII;RIIC
Protein Construction:	A DNA sequence encoding the human TGFBR2 (NP_003233.4) (Met1-Gln166) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Thr 23
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P37173
Molecular Weight:	17.8 kDa (predicted); 24 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its binding ability in a functional ELISA. Immobilized TGFBR2h (1-166Q) at 10 μg/mL (100 μL/well) can bind TGFB1-His/Biotin , the EC50 of human TGFB1-His/Biotin is 130-300 ng/mL.
Purity:	> 90 % 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 20 mM PBS, 150 mM NaCl, 10% glycerol, 0.5 mM TCEP, pH 7.0.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

TGFBR2 is a member of the Ser/Thr protein kinase family and the TGFB receptor subfamily. It is a transmembrane protein. TGFBR2 is comprised of 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 stabilized by a network of

six intra strand disulfide 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.

Reference

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.

Shima K,et al.(2011) TGFBR2 and BAX mononucleotide tract mutations, microsatellite instability, and prognosis in 1072 colorectal cancers. PLoS One. 6(9):e25062.

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.

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