TGFBR2 Active Protein

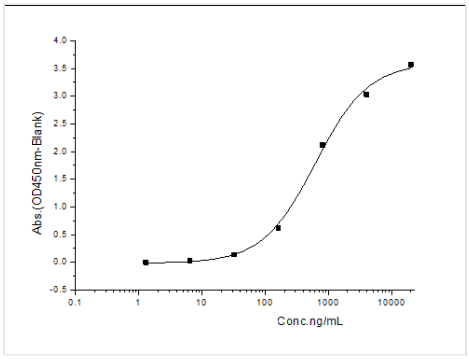
PRODUCT OVERVIEW

Product Name	TGFBR2, Active Protein
Full Product Name	TGFBR2 Protein, Human, Recombinant (ECD, His Tag)
Product Gene Name	TGFBR2 active protein
Product Synonym Names	Human TGFBR2 Protein (ECD, His Tag); AAT3 Protein, Human; FAA3 Protein, Human; LDS1B Protein, Human; LDS2 Protein, Human; LDS2B Protein, Human; MFS2 Protein, Human; RIIC Protein, Human; TAAD2 Protein, Human; TGFbeta-RII Protein, Human; TGFR-2 Protein, Human; transforming growth factor, beta receptor II (70/80kDa)
Sequence	Met1-Gln16 6
Host	Baculovirus-Insect Cells
Form/Format	Lyophilized from sterile 20mM PBS, 150mM NaCl, 10% glycerol, 0.5mM TCEP, pH7.0. Normally 5%-8% trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the hard copy of CoA.
Purity/Purification	>90% as determined by SDS-PAGE
Preparation and Storage	Samples are stable for up to twelve months from date of receipt at -20 degree C to -80 degree C. Store it under sterile conditions at -20 degree C to -80 degree C. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles. In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice.
Molecular Weight	67,457 Da
OMIM	133239
3D Structure	ModBase 3D Structure for P37173
Active Protein Note	Protein activity can be an ambiguous term. Please refer to the data sheet or inquire with Technical Support to determine the definition of activity for this product.
Species	Human
Endotoxin	<1.0EU per ug protein as determined by the LAL method.
Predicted N Terminal	Thr 23
Tag	C-His
Protein Construction	A DNA sequence encoding the human TGFBR2 (NP_003233.4)(Met1-Gln166) was expressed with a polyhistidine tag at the C-terminus.
Reconstitution	A hardcopy of COA with reconstitution instruction is sent along with the products. Please refer to it for detailed information.
Activity	Measured by its binding ability in a functional ELISA. Immobilized TGFBR2h (1-166Q) at 10ug/mL (100uL/well) can bind TGFB1-His/Biotin. The EC50 of human TGFB1-His/Biotin is 130-300ng/mL.

Related Product Information for TGFBR2 active 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.
Product References and Citations for TGFBR2 active protein	Yu Y, et al. (2012) MicroRNA-21 induces stemness by downregulating transforming growth factor beta receptor 2 (TGFbetaR2) 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-beta receptor genes and abdominal aortic aneurysm. Atherosclerosis. 219(1):218-23.
Other Notes	Small volumes of TGFBR2 active protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for TGFBR2 purchase	MBS8120228 is an active protein targeting TGFBR2. Also known as TGFBR2 Protein, Human, Recombinant (ECD, His Tag). Host: Baculovirus-Insect Cells.



SDS-Page of TGFBR2 active protein



Testing Data of TGFBR2 active protein
Measured by its binding ability in a functional ELISA. Immobilized TGFBR2h (1-166Q) at 10 ug/mL (100 uL/well) can bind TGFB1-His/Biotin, the EC50 of human TGFB1-His/Biotin is 0.50-1.20 ug/mL.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for TGFBR2. It may not necessarily be applicable to this product.

NCBI GI #	67782324
NCBI GeneID	7048
NCBI Accession #	NP_003233.4
UniProt Primary Accession #	P37173
UniProt Secondary Accession #	Q15580; Q6DKT6; Q99474; B4DTV5
UniProt Related Accession #	P37173
GenBank Nucleotide #	NM_003242.5
NCBI Official Full Name	TGF-beta receptor type-2 isoform B
NCBI Official Synonym Full Names	transforming growth factor, beta receptor II (70/80kDa)
NCBI Official Symbol	TGFBR2

NCBI Official Synonym Symbols	AAT3; FAA3; LDS2; MFS2; RIIC; LDS1B; LDS2B; TAAD2; TGFR-2; TGFbeta-RII
UniProt Protein Name	TGF-beta receptor type-2
UniProt Synonym Protein Names	TGF-beta type II receptor; Transforming growth factor-beta receptor type II
Protein Family	TGF-beta receptor
UniProt Gene Name	TGFBR2
UniProt Synonym Gene Names	TGFR-2; TGF-beta receptor type II; TbetaR-II
UniProt Entry Name	TGFR2_HUMAN
NCBI Protein Information	TGF-beta receptor type-2; tbetaR-II; TGF-beta type II receptor; TGF-beta receptor type IIB; transforming growth factor beta receptor type IIC; transforming growth factor, beta receptor II beta; transforming growth factor, beta receptor II alpha; transform
NCBI Summary for TGFBR2	This gene encodes a member of the Ser/Thr protein kinase family and the TGFB receptor subfamily. The encoded protein is a transmembrane protein that 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 this gene have been associated with Marfan Syndrome, Loeys-Deitz Aortic Aneurysm Syndrome, and the development of various types of tumors. Alternatively spliced transcript variants encoding different isoforms have been characterized. [provided by RefSeq, Jul 2008]
UniProt Comments for TGFBR2	TGFBR2: a TKL kinase of the serine/threonine-protein kinase receptor (STKR) family. R1 and R2 TGF-beta receptors dimerize after binding TGF-beta at the cell surface. Binds to DAXX. Defects can cause esophageal cancer. Protein type: EC 2.7.11.30; Oncoprotein; Membrane protein, integral; Kinase, protein; Protein kinase, TKL; Protein kinase, Ser/Thr (receptor); TKL group; STKR family; Type2 subfamily Chromosomal Location of Human Ortholog: 3p22 Cellular Component: plasma membrane; integral to membrane; caveola; cytosol; receptor complex; external side of plasma membrane Molecular Function: transforming growth factor beta receptor activity; protein binding; glycosaminoglycan binding; transforming growth factor beta receptor activity, type II; transforming growth factor beta binding; metal ion binding; mitogen-activated protein kinase kinase kinase binding; SMAD binding; ATP binding; transmembrane receptor protein serine/threonine kinase activity; receptor signaling protein serine/threonine kinase activity Biological Process: lens development in camera-type eye; wound healing; apoptosis; heart development; positive regulation of smooth muscle cell proliferation; myeloid dendritic cell differentiation; gastrulation; palate development; positive regulation of tolerance induction to self antigen; protein amino acid phosphorylation; negative regulation of cardiac muscle cell proliferation; transforming growth factor beta receptor signaling pathway; positive regulation of mesenchymal cell proliferation; positive regulation of cell proliferation; response to glucose stimulus; positive regulation of NK T cell differentiation; vasculogenesis; positive regulation of T cell tolerance induction; response to nutrient; aging; response to drug; receptor-mediated endocytosis; blood vessel development; smoothened signaling pathway; organ regeneration; positive regulation of skeletal muscle regeneration; in utero embryonic development; embryonic hemopoiesis; common-partner SMAD protein phosphorylation; peptidyl-threonine phosphorylation; embryonic cranial skeleton morphogenesis; regulation of cell proliferation; patterning of blood vessels; peptidyl-serine phosphorylation; positive regulation of angiogenesis; gut development; regulation of gene expression; response to mechanical stimulus; response to estrogen stimulus; positive regulation of B cell tolerance induction; activation of protein kinase activity; brain development; negative regulation of transforming growth factor beta receptor signaling pathway; embryo implantation Disease: Colorectal Cancer, Hereditary Nonpolyposis, Type 6; Loeys-dietz Syndrome 2; Esophageal Cancer
Research Articles on TGFBR2	**1.** Results show that epigenetic loss of TGFBR2 expression in prostatic fibroblasts, initiated by interactions with Prostate cancer results in the promoter methylation and silencing of DNA damage repair mediators.

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