Data Sheet (Cat.No.TMPY-03649)

TargetMol

TGFBR3 Protein, Human, Recombinant (His)

General Information

Synonyms:	βglycan;betaglycan;transforming growth factor, beta receptor III;transforming growth factor, β receptor III;BGCAN
Protein Construction:	A DNA sequence encoding the human TGFBR3 (Q03167-1) (Met 1-Gly781) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q03167-1
Molecular Weight:	87.8 kDa (predicted); 88 kDa (reducing conditions)

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:	> 95 % 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 Tris, 500 mM NaCl, 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:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

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

Betaglycan also known as transforming growth factor beta receptor III (TGFBR3), is a cell-surface chondroitin sulfate / heparan sulfate proteoglycan. TGFBR3 is a transforming growth factor (TGF)-beta type III receptor. This receptor is a membrane proteoglycan that often functions as a co-receptor with other TGF-beta receptor superfamily members. Ectodomain shedding produces soluble TGFBR3, which may inhibit TGFB signaling.

Decreased expression of this receptor has been observed in various cancers. TGFBR3 is the TGF-β component most commonly downregulated among localized human prostate cancer studies. TGFBR3 knockdown led to focus formation and enhanced expression of CD133, a marker found on prostate cancer stem cells. TGFBR3 is an accessory receptor that binds to and modulates the activities of both transforming growth factor-beta (TGFβ) and inhibin, two members of the TGFβ superfamily of growth factors that regulate many aspects of reproductive biology. TGFBR3 is known to be expressed in adult testis and ovary, but little is known about this receptor during gonadogenesis.

Reference

Johnson DW, et al. (1996) Assignment of human transforming growth factor-beta type I and type III receptor genes (TGFBR1 and TGFBR3) to 9q33-q34 and 1p32-p33, respectively. Genomics. 28 (2): 356-7.
Rotzer D, et al. (2001) Type III TGF-beta receptor-independent signalling of TGF-beta2 via T betaRII-B, an alternatively spliced TGF- type II receptor. EMBO J. 20 (3): 480-90.
Gao J, et al. (1999) Expression of transforming growth factor-beta receptors types II and III within various cells in the rat periodontium. J Periodont Res. 34 (2): 113-22.