10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

TGF Beta Receptor I Antibody (Center) Blocking peptide

Synthetic peptide
Catalog # BP7822c

Specification

TGF Beta Receptor I Antibody (Center) Blocking peptide - Product Information

Primary Accession P36897

TGF Beta Receptor I Antibody (Center) Blocking peptide - Additional Information

Gene ID 7046

Other Names
TGF-beta receptor type-1, TGFR-1, Activin A receptor type II-like protein kinase of 53kD, Activin receptor-like kinase 5, ALK-5, ALK5, Serine/threonine-protein kinase receptor R4, SKR4, TGF-beta type I receptor, Transforming growth factor-beta receptor type I, TGF-beta receptor type I, TbetaR-I, TGFBR1, ALK5, SKR4

Target/Specificity
The synthetic peptide sequence is selected from aa 148~163 of human TGFBR1.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

TGF Beta Receptor I Antibody (Center) Blocking peptide - Protein Information

Name TGFBR1

Synonyms ALK5, SKR4

Function
Transmembrane serine/threonine kinase forming with the TGF- beta type II serine/threonine kinase receptor, TGFBR2, the non- promiscuous receptor for the TGF-beta cytokines TGFB1, TGFB2 and TGFB3. Transduces the TGFB1, TGFB2 and TGFB3 signal from the cell surface to the cytoplasm and is thus regulating a plethora of physiological and pathological processes including cell cycle arrest in epithelial and hematopoietic cells, control of mesenchymal cell proliferation and differentiation, wound healing, extracellular matrix production, immunosuppression and carcinogenesis (PubMed:33914044). The formation of the receptor complex composed of 2 TGFBR1 and 2 TGFBR2 molecules symmetrically bound to the cytokine dimer results in the phosphorylation and the activation of TGFBR1 by the constitutively active TGFBR2. Activated TGFBR1 phosphorylates SMAD2 which

dissociates from the receptor and interacts with SMAD4. The SMAD2-SMAD4 complex is subsequently translocated to the nucleus where it modulates the transcription of the TGF-beta-regulated genes. This constitutes the canonical SMAD-dependent TGF-beta signaling cascade. Also involved in non-canonical, SMAD-independent TGF-beta signaling pathways. For instance, TGFBR1 induces TRAF6 autoubiquitination which in turn results in MAP3K7 ubiquitination and activation to trigger apoptosis. Also regulates epithelial to mesenchymal transition through a SMAD- independent signaling pathway through PARD6A phosphorylation and activation.

Cellular Location
Cell membrane; Single-pass type I membrane protein. Cell junction, tight junction. Cell surface. Membrane raft

Tissue Location
Found in all tissues examined, most abundant in placenta and least abundant in brain and heart. Expressed in a variety of cancer cell lines (PubMed:25893292).

TGF Beta Receptor I Antibody (Center) Blocking peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

TGF Beta Receptor I Antibody (Center) Blocking peptide - Images

TGF Beta Receptor I Antibody (Center) Blocking peptide - Background

The protein encoded by this gene forms a heteromeric complex with type II TGF-beta receptors when bound to TGF-beta, transducing the TGF-beta signal from the cell surface to the cytoplasm. The encoded protein is a serine/threonine protein kinase. Mutations in this gene have been associated with Loeys-Dietz aortic aneurysm syndrome (LDAS).

TGF Beta Receptor I Antibody (Center) Blocking peptide - References

Itoh, S., et al., J. Biol. Chem. 278(6):3751-3761 (2003).Valcourt, U., et al., J. Biol. Chem. 277(37):33545-33558 (2002).Bourguignon, L.Y., et al., J. Biol. Chem. 277(42):39703-39712 (2002).Jude, E.B., et al., Diabet. Med. 19(6):440-447 (2002).Nagel, D., et al., Biochem. Biophys. Res. Commun. 290(5):1558-1563 (2002).