Revision 1

#3712 Store at -20C

TGF-β Receptor I Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H R Mi	Endogenous	52	Rabbit	#P36897	7046

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

TGF-β Receptor I Antibody detects endogenous levels of total TGF-β receptor I protein independent of phosphorylation.

Species predicted to react based on 100% sequence homology:

Pig

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the central intracellular region of human TGF-β receptor I. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Transforming growth factor-β (TGF-β) proteins belong to the TGF-β superfamily of cytokines that play a critical role in regulating cell proliferation and differentiation, developmental patterning and morphogenesis, and disease pathogenesis (1-3). TGF-β ligands elicit signaling through three cell surface receptors: type I (RI), type II (RII), and type III (RIII) TGF-β receptors. Type I and type II receptors are serine/threonine kinases that form a heteromeric complex following ligand binding to the type II receptor. In response to ligand binding, the type II receptors form a stable complex with the type I receptors, triggering phosphorylation and activation of the type I receptor (4). The results in the recruitment of receptor-mediated SMADs (SMAD2, SMAD3), which are phosphorylated by the type I kinase in an SSXS domain in the C-terminus. This leads to recruitment of the co-SMAD (SMAD4), and subsequent translocation of this heteromeric SMAD complext to the nucleus, where it regulates transcription of target genes (5-7). The type III receptor, also known as betaglycan, is a transmembrane proteoglycan with a large extracellular domain that binds TGF-β with high affinity but lacks a cytoplasmic signaling domain. Expression of the type III receptor can regulate TGF-β signaling through presentation of the ligand to the signaling complex (8).

Background References

1. Massagué, J. et al. (2000) *Cell* 103, 295-309.
2. de Caestecker, M.P. et al. (2000) *J Natl Cancer Inst* 92, 1388-402.
3. Derynck, R. et al. (2001) *Nat Genet* 29, 117-29.
4. Derynck, R. and Feng, X.H. (1997) *Biochim Biophys Acta* 1333, F105-50.
5. Miyazono, K. et al. (2000) *Adv Immunol* 75, 115-57.
6. Massagué, J. (2000) *Nat Rev Mol Cell Biol* 1, 169-78.
7. Derynck, R. et al. (1998) *Cell* 95, 737-40.
8. López-Casillas, F. et al. (1991) *Cell* 67, 785-95.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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