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TGF- β AntibodyCell Signaling
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: WB	Reactivity: H M R	Sensitivity: Endogenous	MW (kDa): 12, 25, 45 to 65	Source: Rabbit	UniProt ID: #P61812, #P01137, #P10600	Entrez-Gene Id: 7042, 7040, 7043
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Product Usage Information	Application Western Blotting	Dilution 1:1000
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	TGF-beta Antibody detects recombinant TGF- β 1, TGF- β 2, and TGF- β 3. The antibody also detects endogenous levels of the TGF- β 1 precursor proteins.	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with synthetic peptide corresponding to a region in the carboxy terminus of TGF-beta1. Antibodies are purified by protein A and peptide affinity chromatography.	
Background	<p>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 complex 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).</p> <p>There are three TGF-beta family members, designated TGF-β1, TGF-β2, and TGF-β3, which are encoded by distinct genes and are expressed in a tissue specific manner (10). TGF-β proteins are synthesized as precursor proteins that are cleaved and reassembled in association with other proteins to form latent complexes. Activation occurs by proteolytic release of TGF-β monomers, which dimerize to form the mature TGF-β ligands.</p>	
Background References	<ol style="list-style-type: none"> 1. Massagué, J. et al. (2000) <i>Cell</i> 103, 295-309. 2. de Caestecker, M.P. et al. (2000) <i>J Natl Cancer Inst</i> 92, 1388-402. 3. Derynck, R. et al. (2001) <i>Nat Genet</i> 29, 117-29. 4. Derynck, R. and Feng, X.H. (1997) <i>Biochim Biophys Acta</i> 1333, F105-50. 5. Miyazono, K. et al. (2000) <i>Adv Immunol</i> 75, 115-57. 6. Massagué, J. (2000) <i>Nat Rev Mol Cell Biol</i> 1, 169-78. 7. Derynck, R. et al. (1998) <i>Cell</i> 95, 737-40. 8. López-Casillas, F. et al. (1991) <i>Cell</i> 67, 785-95. 9. Kingsley, D.M. (1994) <i>Genes Dev</i> 8, 133-46. 	

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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