

# TGF-β Antibody



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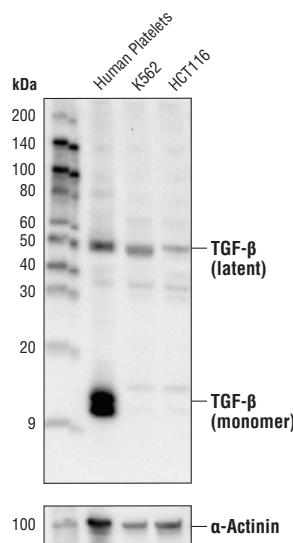
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R	12, 25, 45 kDa	Rabbit**

**Background:** Transforming growth factor-β (TGF-β) superfamily members are critical regulators of cell proliferation and differentiation, developmental patterning and morphogenesis, and disease pathogenesis (1-4). TGF-β elicits signaling through three cell surface receptors: type I (RI), type II (RII), and type III (RIII). Type I and type II receptors are serine/threonine kinases that form a heteromeric complex. In response to ligand binding, the type II receptors form a stable complex with the type I receptors allowing phosphorylation and activation of type I receptor kinases (5). 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 (6,7). Expression of the type III receptor can regulate TGF-β signaling through presentation of the ligand to the signaling complex. The only known direct TGF-β signaling effectors are the Smad family proteins, which transduce signals from the cell surface directly to the nucleus to regulate target gene transcription (8,9).

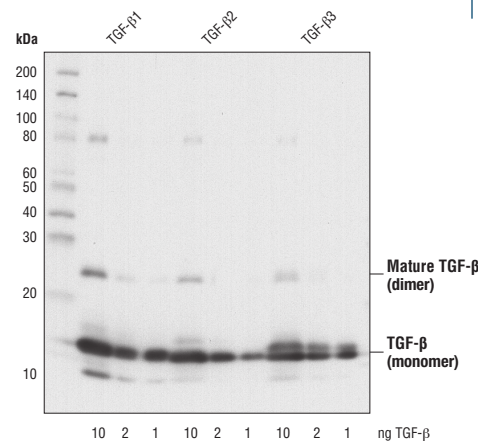
There are three TGF-beta family members, designated TGF-β1, TGF-β2, and TGF-β3, which are encoded by distinct genes and are expressed in a tissue specific manner (10). TGF-β proteins are synthesized as precursor proteins that are cleaved and reassembled in association with other proteins to form latent complexes. Activation occurs by proteolytic release of TGF-β monomers, which dimerize to form the mature TGF-β ligands.

**Specificity/Sensitivity:** TGF-β Antibody detects endogenous levels of TGF-β1 protein. The antibody detects full length (latent) TGF-β1 precursor protein and cleaved (mature) TGF-β1 protein. Western blot analysis using purified recombinant proteins indicates that the antibody can also detect TGF-β2 and TGF-β3.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with synthetic peptide corresponding to a region in the carboxy terminus of TGF-β1. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from human platelets, K562, and HCT116 lysate using TGF-β Antibody (upper) and α-Actinin (D6F6) XP® Rabbit mAb (lower).



Western blot analysis of recombinant human TGF-β1, TGF-β2, and TGF-β3 using TGF-β Antibody.

Entrez-Gene ID #7043  
Swiss-Prot Acc. #P10600

**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.

\*Species cross-reactivity is determined by western blot.

\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.

**Recommended Antibody Dilutions:**

Western Blotting 1:1000

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

**Background References:**

- (1) Massague, J. et al. (2000) *Cell* 103, 295-309.
- (2) Caestecker, M.P. et al. (2000) *J. Natl. Cancer Inst.* 92, 1388-1402.
- (3) Derynck, R. et al. (2001) *Nature Genet.* 29, 117-129.
- (4) Miyazono, K. et al. (2000) *Adv. Immunol.* 75, 115-157.
- (5) Derynck, R. et al. (1997) *Biochim. Biophys. Acta.* 1333, F105-150.
- (6) Lopez-Casillas, F. et al. (1991) *Cell* 67, 785-795.
- (7) Wang, X.F. et al. (1991) *Cell* 67, 797-805.
- (8) Derynck, R. et al. (1998) *Cell* 95, 737-740.
- (9) Massague, J. et al. (2000) *Nat. Rev. Mol. Cell Biol.* 1, 169-178.
- (10) Kingsley, D.M. et al. (1994) *Genes Dev.* 8, 133-146.

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

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