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 thus activation of the 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 Smads, which function by transducing signals from the cell surface directly to the nucleus and regulating transcription of target genes (8,9).

There are three isoforms of TGF-β designated TGF-β1, TGF-β2, and TGF-β3, which are encoded by distinct genes and are expressed in a tissue specific manner (10). Each of the isoforms are synthesized as larger precursor proteins containing a propeptide region which gets cleaved prior to secretion from the cell. Mature TGF-β contains two polypeptides linked linked by disulfide bonds forming a protein of about 25 kDa.

Specificity/Sensitivity: TGF-β Antibody detects recombinant TGF-β1, TGF-β2, and TGF-β3. The antibody also detects endogenous levels of the TGF-β1 precursor proteins.

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 recombinant human TGF-β1, TGF-β2, and TGF-β3 using TGF-β Antibody.

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.