

Human TGF-β3

✓ 2 μg

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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Molecular Wt.	Source	Purity
25.4 kDa	Human Recombinant Protein	>95%

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).

Three isoforms of TGF-β, designated TGF-β1, TGF-β2 and TGF-β3, are encoded by distinct genes and are expressed in a tissue specific manner (10). Each isoform is synthesized as a larger precursor protein containing a propeptide region that is removed prior to secretion. Mature TGF-β contains two polypeptides linked by disulfide bonds to form a protein of approximately 25 kDa.

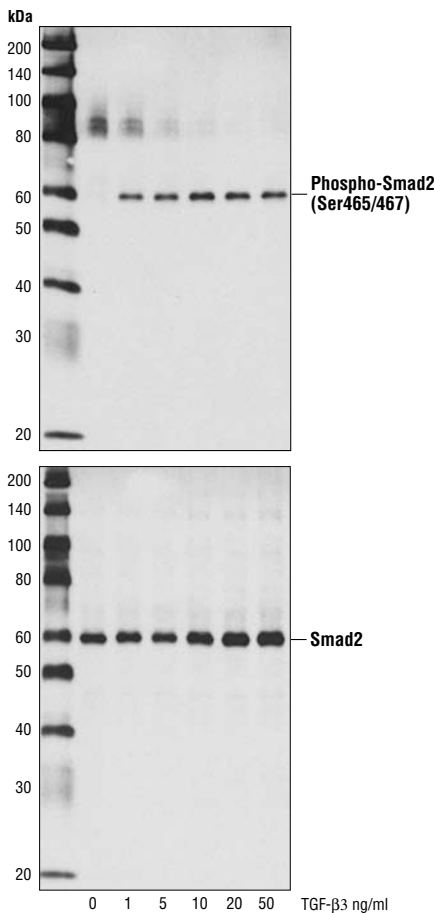
Source/Purification: Recombinant human TGF-β3 was prepared in *E. coli* and is supplied in a lyophilized form. A greater than 95% purity was determined by reverse-phase HPLC and SDS-PAGE.

Specific Activity: ED₅₀ was determined to be less than 0.05 ng/ml.

Directions for Use: The working concentration of TGF-β3 generally ranges from 10-50 ng/ml.

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) López-Casillas, F. et al. (1991) *Cell* 67, 785-795.

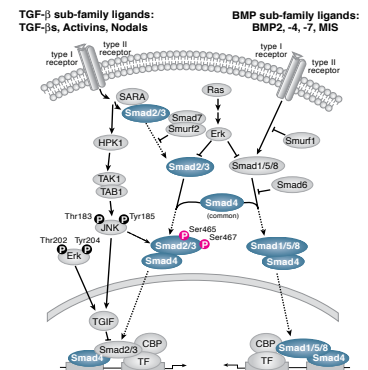


Western blot analysis of extracts from serum-starved HeLa cells treated for 30 minutes with various concentrations of TGF-β3 using Phospho-Smad2 (Ser465/467) (138D4) Rabbit mAb #3108 (upper) and Smad2 (86F7) Rabbit mAb #3122 (lower).

(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. (1994) *Genes Dev.* 8, 133-146.

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

Storage: Lyophilized product is very stable at -20°C. It is recommended to reconstitute with sterile water at a concentration of 0.1 mg/ml, which can be further diluted in aqueous solutions as needed. Addition of a carrier protein (0.1% HSA or BSA) is recommended for long-term storage.



Material Safety Data Sheet (MSDS) for TGF- β 3

I. Identification:

Product name: TGF- β 3
Product Catalog: 3706
Manufacturer Supplier: Cell Signaling Technology
 3 Trask Lane
 Danvers, MA 01923 USA
 978-867-2300 TEL
 978-867-2400 FAX
 978-578-6737 EMERGENCY TEL

II. Composition/Information:

III. Hazard Identification:

Substance Name: Transforming growth factor- β 3
Synonyms: TGF- β 3
CAS#: N/A

CAUTION: This product contains material of human origin and is not for use in humans. To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been established.

IV. First Aid Measures:

NFPA Rating: Health: 0 Flammability: 0 Reactivity: 0

Inhalation: If inhaled, remove to fresh air. If breathing is difficult, get medical attention.

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Get medical attention.

Skin exposure: In case of contact, immediately wash skin with soap and water for at least 15 minutes. Remove contaminated clothing. Wash clothing before reuse.

Eye exposure: In case of contact with eyes, immediately flush eyes with water for at least 15 minutes. Get medical attention.

V. Fire Fighting Measures:

Flash Point: Data not available.

Autoignition Temperature: Data not available.

Explosion: Data not available.

Fire extinguishing media: Water spray, dry chemical, foam, or carbon dioxide.

Firefighting: Wear protective clothing and self-contained breathing apparatus to prevent contact with skin and eyes. May emit toxic fumes under fire conditions.

VI. Accidental Release Measures: Wear appropriate personal protective equipment as indicated in Section VIII. Sweep up material and avoid raising dust. Transfer to a closed chemical waste container for disposal. Wash spill site after material has been picked up for disposal.

VII. Handling And Storage:

Storage: Store in tightly closed container at -20°C.

Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

VIII. Exposure Controls/Personal:

Ventilation System: A system of local and/or general exhaust is recommended.

Skin Protection: Wear compatible chemical resistant gloves and protective clothing.

Eye protection: Wear protective safety glasses or chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

IX. Physical And Chemical Properties

Appearance: powder
pH: data not available
Melting Point: data not available
Boiling Point: data not available
Freezing Point: data not available
Volatile Organic Compounds: data not available
Solubility: data not available

X. Stability and Reactivity:

Stability: Very stable under normal conditions.
Hazardous Decomposition: Data not available.

XI. Toxicological Information:

Acute Effects: Not established. May cause irritation inhaled, ingested or absorbed.

Chronic Effects: Not established. May be harmful if inhaled, ingested or absorbed.

Potential Health Effects: Not established.

Inhalation: May be harmful, may be irritating to mucous membranes and upper respiratory tract.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May be harmful if absorbed through the eyes. May cause eye irritation.

Ingestion: May be harmful if swallowed.

To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.

XII. Ecological Information: Data not available for this product.

XIII. Disposal Considerations: Dispose of in accordance with federal, state, local environmental regulations.

XIV. Transport Information:

DOT: Proper Shipping Name: None.

Hazard Class: This substance is considered non-hazardous for transport.

IATA: Proper Shipping Name: None.

Non-Hazardous for air transport: This substance is considered non-hazardous for air transport.

XV. Regulatory Information:

EU Regulations/Classifications/Labeling Information: None.

US Regulatory Information:

SARA Listed: No.

Canada (WHMIS): DSL No, NDSL No.

XVI. Other Information:

This compound is sold only for research use only. It is not for use in humans. To the best of our knowledge, this document is accurate. It is intended to serve as a guide for safe use of this product in a laboratory setting by experienced personnel. The burden of safe use of this material rests entirely with the user. Cell Signaling Technology, Inc., shall not be held liable for any damage resulting from the handling of or from contact with the above product.