

# Recombinant human TGF- $\beta$ 1

HEK293 cell expressed human transforming growth factor beta 1 with HSA

Cat. code: rcyc-htgfb1; rcyc-htgfb1-5

[invivogen.com/human-tgfb1](http://invivogen.com/human-tgfb1)

For research use only

Version 25D15-NJ

## PRODUCT INFORMATION

### Contents

Recombinant human TGF- $\beta$ 1 is provided as a lyophilized powder and is available in two quantities:

- **rcyc-htgfb1:** 10  $\mu$ g
- **rcyc-htgfb1-5:** 50  $\mu$ g (5 x 10  $\mu$ g)

*Note:* This product is sterile filtered prior to lyophilization.

- 1.5 ml endotoxin-free water for rcyc-htgfb1 and rcyc-htgfb1-5

### Storage and stability

- Recombinant human TGF- $\beta$ 1 is shipped at room temperature. Upon receipt, it should be immediately stored at -20 °C.
- Upon resuspension, prepare aliquots of recombinant human TGF- $\beta$ 1 and store at 4 °C for 1 week or at -20 °C to -80 °C for 12 months.

*Note:* Avoid repeated freeze-thaw cycles.

### Quality control

- Purity:  $\geq$  95% (SDS-PAGE)
- Endotoxin:  $\leq$  0.1 EU/ $\mu$ g (LAL assay)
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using [HEK-Blue™ TLR2](#) and [HEK-Blue™ TLR4](#) cells.
- The biological activity of TGF- $\beta$ 1 is confirmed using [HEK-Blue™ TGF- \$\beta\$  cells](#).

### Characteristics

- Alternate name: Transforming growth factor beta-1
- Source: Mammalian; HEK293 cells
- Carrier: HSA (human serum albumin)
- Tag: Tag-free
- Accession number: P01137
- Molecular mass: ~ 25 kDa (SDS PAGE, non-reducing conditions)
- Formulation: Recombinant human TGF- $\beta$ 1 was lyophilized from a 0.2  $\mu$ m filtered phosphate buffer saline (pH 7.4), 5% saccharose, 2% HSA.
- Solubility: 100  $\mu$ g/ml in water

## TESTED APPLICATIONS

- Cellular assays

## PRODUCT DESCRIPTION

Tumor growth factor-beta (TGF- $\beta$ ) belongs to a family of structurally related cytokines that regulate a plethora of cellular functions, such as proliferation, apoptosis, differentiation, and migration<sup>1, 2</sup>. TGF- $\beta$  exists in at least three isoforms; TGF- $\beta$ 1, TGF- $\beta$ 2, and TGF- $\beta$ 3. In the immune system, TGF- $\beta$ 1 is the predominant isoform<sup>1</sup>. It is produced by many cell types, including macrophages, in a latent form that is bound to two other polypeptides, latent TGF- $\beta$ 1 binding protein (LTBP) and latency-associated peptide (LAP). Upon cleavage of these proproteins, the mature TGF- $\beta$ 1 is released. This mature protein can bind its cell surface receptors and initiate signaling.

Recombinant TGF- $\beta$ 1 is a high-quality and biologically active cytokine, validated using proprietary TGF- $\beta$  reporter cells. This TGF- $\beta$  isoform is produced in HEK293 cells to ensure protein glycosylation and bona fide 3D structure.

Recombinant human TGF- $\beta$ 1 can be used together with HEK-Blue™ TGF- $\beta$  cells for the screening of inhibitory molecules, such as Fresolimumab, a monoclonal antibody targeting all isoforms of TGF- $\beta$ .

1. Travis MA. & Sheppard D., 2014. TGF- $\beta$  activation and function in immunity. Annu Rev Immunol. 32:51-82. 2. Taylor AW., 2009. Review of the activation of TGF-beta in immunity. J Leukoc Biol. 85(1):29-33.

## METHODS

### Preparation of stock solution (100 $\mu$ g/ml):

1. Add 100  $\mu$ l of endotoxin-free water (provided) to 10  $\mu$ g of recombinant human TGF- $\beta$ 1.
2. Mix gently by pipetting until completely resuspended.
3. Use immediately or prepare aliquots and store at -20 °C or -80 °C. Avoid freeze-thaw cycles.
4. Further dilutions can be prepared in the appropriate aqueous buffer, such as cell culture medium containing serum.

## RELATED PRODUCTS

Product	Cat. Code
HEK-Blue™ TGF- $\beta$ Cells	hkb-tgfbv2
Anti-hTGF- $\beta$ -hlgG4 (S228P)	htgfb-mab14

### TECHNICAL SUPPORT

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