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Recombinant human TGF-β1 PLUS™ protein (Qk010-CTG)



Type: Cell Therapy Grade

Available for purchase: unit size (µg): 500, 1000

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Product Information

Transforming growth factor-beta 1 (TGF-β1) is a pleiotropic cytokine that regulates various cellular processes, including cell proliferation, growth, differentiation, motility, and apoptosis. It is an essential growth factor in many embryonic and induced pluripotent stem cell (iPSC) maintenance media and promotes the differentiation of various cell types such as fibroblasts, epithelial cells, and immune cells. In cell therapy TGF-β1 is used in the maintenance of iPSC-derived cell therapy and in the induction of iTregs from naïve T cells.

Qkine human cell therapy grade TGF-β1 PLUS™ protein is the first entirely animal origin-free recombinant human TGF-β1 protein for increased safety and purity for translational research and cell and gene therapy manufacturing.

Qkine cell therapy grade high purity animal origin-free proteins are manufactured as GMP grade equivalents in an ISO 9001:2015-certified facility, under ISO 20399:2022 standards with GMP compliance, defined quality criteria and documentation.

Alternative protein names

Transforming growth factor-beta 1, TGF-beta 1, TGFβ1, TGFB1, TGF B1, tgf-b1, Qk10, GMP TGF

Molecular weight

24 kDa (dimer)

Protein Uniprot number

High purity optimized TGF-β1 protein (Uniprot: P01137)

Species reactivity

- human
- species similarity:
- mouse - 99%
- rat - 99%
- bovine - 100%
- porcine - 100%

Product Information

- Certified animal origin-free (AOF)
- Cell and gene therapy grade
- Manufactured in our ISO 9001:2015 facility in Cambridge, UK
- Lot-to-lot consistency in bioactivity
- Full traceability and documentation
- Carrier protein-free, tag free
- Expressed in *E. coli*
- Lyophilized from acetonitrile, TFA

Reconstitution instructions

- Resuspend in 10 mM HCl (Reconstitution solution A) at >50 µg/ml

Featured applications

- Induction of iTregs from naïve T cells
- Regenerative stem cell therapy
- CAR-T cell therapy manufacturing

Further quality assays

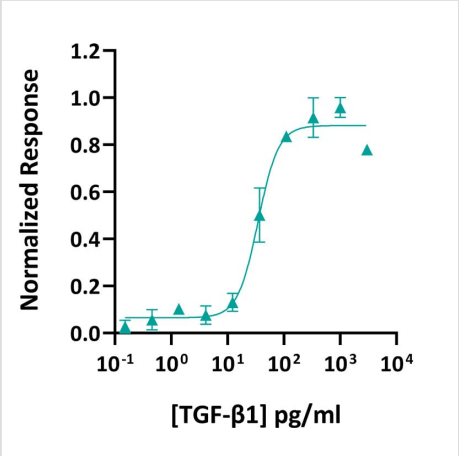
- Mass spectrometry: single species with expected mass
- Purity >98%, by SDS-PAGE quantitative densitometry
- Recovery from stock vial: >95%
- Sterility tested and mycoplasma negative
- Endotoxin: <0.05 EU/µg protein
- Residual host cell protein <10 ng/µg

- Residual host cell DNA <10 ng/μg
- N-terminal sequence analysis

Scientific Information

Bioactivity

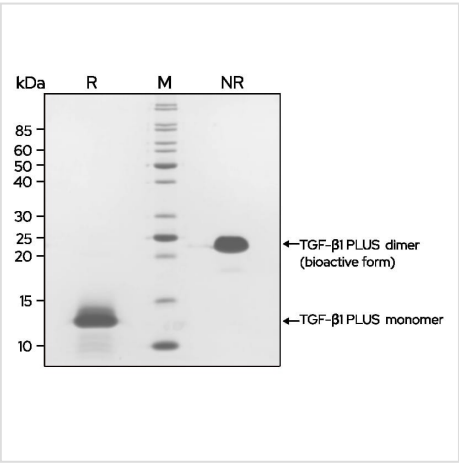
Recombinant TGF-β1 PLUS™ activity was determined using a CAGA luciferase reporter assay in transiently transfected HEK293 cells. Transfected cells were treated in triplicate with a serial dilution of TGF-β1 PLUS™ for 6 hours. Firefly activity was measured and normalized to the control Renilla luciferase activity. Data from Qk010-CTG lot #204762. EC50 = 35 pg/ml (1.46 pM).



The specific activity of cell therapy grade TGF-β1 PLUS™ Qk010-CTG is 1.0 x 10^7 IU/mg, which is calibrated against the human TGF-β1 WHO standard (NIBSC code: 89/514).

Purity

TGF-β1 PLUS™ (Qk010) dimer migrates as a single band at 24 kDa in non-reducing (NR) and 13 kDa as a single monomeric species upon reduction (R). High purity yield of dimeric protein (bioactive form). Purified recombinant protein (7 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptoethanol, R) and non-reduced conditions (NR) and stained with Coomassie Brilliant Blue R250. Data from Qk010 lot #012.



Original product page: https://qkine.com/product/recombinant-human-tgf-%ce%b21-plus-protein-qk010-ctg/

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