DATA SHEET

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GFH109P Recombinant Human TGF-β3 (plant produced)

Description

This recombinant human TGF-β3 is chloroplast-expressed in plants (*Nicotiana tabacum*). It has levels of bioactivity that compare very favourably with competitor products.

Transforming Growth Factors (TGFs) are multifunctional peptides that regulate growth and differentiation in most cell types. The TGF-β family of proteins signal through serine/threonine kinase receptors. TGF-β isoforms (TGF-β1, -β2 and -β3) have overlapping, yet distinct biological actions in developing and adult tissues. TGF-β3 is an important factor in regulating cell adhesion and accelerating wound repair. TGF-β3 also functions during osteoblast proliferation, chemotaxis and collagen synthesis.

Length	113 / 226 aa
Molecular Weight	12.9 / 25.7 kDa
Structure	Disulphide-linked homodimer, non-glycosylated
Source	*Nicotiana tabacum* (plant produced)
Accession Number	P10600
Purity	≥95% determined by reducing and non-reducing SDS-PAGE

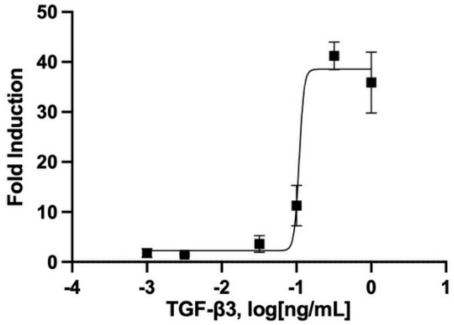
Specifications

Alternative Names	Transforming Growth Factor β3, TGF β3, TGF-β-3, TGFB3, TGFβ3
Biological Activity	Measured using TGF-β3 responsive SBE Reporter HEK293 cells incubated with increasing concentrations of TGF-β3 for 18 hours. Luciferase activity was measured using the ONE-Step Luciferase Assay System (BPS Bioscience #60690). The EC50 for bioactivity of TGF-β3 was 0.109 ng/mL.
Endotoxin Level	≤1.00 EU/µg as measured by kinetic LAL
Formulation	Lyophilised from 20% ethanol, 0.12% acetic acid, pH 4.0
AA Sequence	`MALDTNYCFR NLEENCCVRP LYIDFRQDLG WKWVHEPKGY YANFCSGPCP YLRSADTTHS TVLGLYNTLN PEASASPCCV PQDLEPLTIL YYVGRTPKVE QLSNMVVKSC KCS`

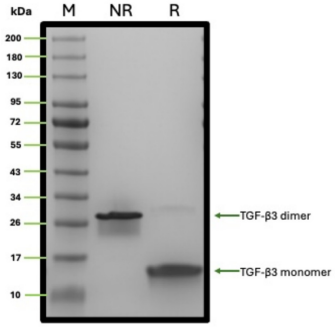
Preparation and Storage

Reconstitution	Centrifuge briefly before opening. Reconstitute in 10 mM HCl to 0.5 mg/mL and allow to hydrate for 5 minutes at room temperature, then pipette gently until visibly solubilised. 4 mM HCl, or 0.12% v/v acetic acid, 20% v/v ethanol, pH 4.0, may also be used; in some buffers complete solubilisation can take up to 8 hours at room temperature. Avoid filter sterilisation unless validated, as it may cause protein loss.
After Reconstitution	Prepare single-use aliquots and store at −80°C. Avoid repeated freeze-thaw cycles. For dilutions below 0.05 mg/mL, add a carrier protein (e.g. 0.1% BSA) if compatible with your application.
Stability and Storage	At least 12 months from the date of receipt when stored at −20°C as supplied.

Data



Fold induction of SBE luciferase reporter expression in TGF-β3 responsive SBE Reporter HEK293 cells after 18 hours with increasing concentrations of plant-produced TGF-β3. EC50 0.109 ng/mL.



Purified TGF-β3 (3 µg per lane) resolved by 12-20% SDS-PAGE under non-reducing (NR) and reducing (TCEP, R) conditions and stained with Coomassie. TGF-β3 migrates as a single band at ~26 kDa (NR) and ~13 kDa (R), with no contaminating bands visible.