

PRODUCT INFORMATION



TGF- β 2 (mouse, recombinant)

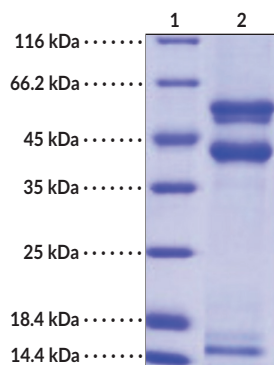
Item No. 42765

Overview and Properties

Synonym: Transforming Growth Factor β 2
Source: Recombinant mouse C-terminal His-tagged TGF- β 2 expressed in HEK293 cells
Amino Acids: 20-414
Uniprot No.: P27090
Molecular Weight: 46.9 kDa
Storage: -80°C (as supplied)
Stability: ≥ 1 year
Purity: $\geq 90\%$ estimated by SDS-PAGE
Supplied in: Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing: < 1.0 EU/ μ g, determined by the LAL endotoxin assay
Protein Concentration: *batch specific* mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: TGF- β 2

SDS-PAGE Analysis of TGF- β 2. This protein has a calculated molecular weight of 46.9 kDa.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

TGF- β 2 is a multifunctional cytokine and member of the TGF- β superfamily.^{1,2} It is a ubiquitously expressed proprotein that is cleaved in the endoplasmic reticulum to form TGF- β 2 latency-associated peptide (LAP) and mature TGF- β 2.² LAP and TGF- β 2 remain non-covalently bound until mature TGF- β 2 is released into the extracellular matrix from a latency complex by various proteins, including matrix metalloproteinases (MMPs), plasmin, and prostate-specific antigen (PSA). TGF- β 2 binds to TGF- β receptor type 3 (TGFB3), which recruits TGFB2 and ALK5, also known as TGF- β RI, to induce canonical signaling through SMAD2/3 or non-canonical signaling through various pathways, including PI3K/Akt/mTOR, ERK1/2, or JNK. It is involved in diverse biological processes, including cell differentiation, embryonic development of the heart and motor system, immune system regulation, and glucose tolerance, as well as tumorigenesis.^{2,3} Mutations in TGFB2 are associated with thoracic aortic aneurysms.⁴ Cayman's TGF- β 2 (mouse, recombinant) protein consists of 406 amino acids, has a calculated molecular weight of 46.9 kDa, and a predicted N-terminus of Ser20 after signal peptide cleavage.

References

1. Khalil, N. TGF- β : From latent to active. *Microbes Infect.* **1(15)**, 1255-1263 (1999).
2. Wang, M.-Y., Liu, W.-J., Wu, L.-Y., *et al.* The research progress in transforming growth factor- β 2. *Cells* **12(23)**, 2739 (2023).
3. Takahashi, H., Alves, C.R.R., Stanford, K.I., *et al.* TGF- β 2 is an exercise-induced adipokine that regulates glucose and fatty acid metabolism. *Nat. Metab.* **1(2)**, 291-303 (2019).
4. Boileau, C., Guo, D.C., Hanna, N., *et al.* TGFB2 mutations cause familial thoracic aortic aneurysms and dissections associated with mild systemic features of Marfan syndrome. *Nat. Genet.* **44(8)**, 916-921 (2012).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM