

PRODUCT INFORMATION



TGF- β 1 LAP (human, recombinant)

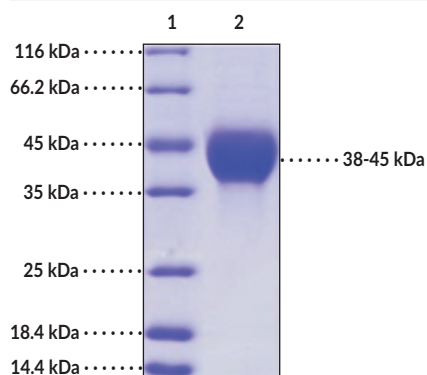
Item No. 42003

Overview and Properties

Synonyms:	TGF- β 1 Latency-associated Peptide, Transforming Growth Factor β 1 LAP, Transforming Growth Factor β 1 Latency-associated Peptide
Source:	Recombinant human C-terminal His-tagged TGF- β 1 LAP expressed in HEK293 cells
Amino Acids:	1-278 (full length)
Molecular Weight:	29.9 kDa
Storage:	-80°C (as supplied)
Stability:	≥ 1 year
Purity:	$\geq 95\%$ 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
Bioactivity:	See figure for details

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 1 LAP

SDS-PAGE Analysis of TGF- β 1 LAP. This protein has a calculated molecular weight of 29.9 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
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Description

Transforming growth factor $\beta 1$ (TGF- $\beta 1$) is a multifunctional cytokine and member of the TGF- β superfamily.^{1,2} It is an extracellular dimeric protein that is produced by multiple cell types, including macrophages, platelets, neutrophils, regulatory T cells, and renal tubular cells, and is the most abundantly expressed isoform of TGF- β . TGF- $\beta 1$ is expressed as a proprotein that is cleaved in the Golgi to form TGF- $\beta 1$ latency-associated peptide (LAP) and mature TGF- $\beta 1$.² TGF- $\beta 1$ LAP and TGF- $\beta 1$ remain non-covalently bound until mature TGF- $\beta 1$ is released from latency by various proteins, including matrix metalloproteinases and plasmin, to regulate immune function, epithelial-mesenchymal transition, and cell proliferation. TGF- $\beta 1$ LAP inhibits TGF- $\beta 1$ -induced inflammation and fibrosis in HSC-T6 rat hepatic cells and H9c2 rat cardiomyocytes, as well as in a mouse model of carbon tetrachloride-induced liver fibrosis.^{3,4} Cayman's TGF- $\beta 1$ LAP (human, recombinant) protein consists of 260 amino acids, has a calculated molecular weight of 29.9 kDa, and a predicted N-terminus of Leu30 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is ~38-45 kDa due to glycosylation.

References

1. Martelossi Cebinelli, G.C., Paiva Trugilo, K., Badaró Garcia, S., *et al.* TGF- $\beta 1$ functional polymorphisms: A review. *Eur. Cytokine Netw.* **27(4)**, 81-89 (2016).
2. Khalil, N. TGF- β : From latent to active. *Microbes Infect.* **1(15)**, 1255-1263 (1999).
3. Song, X., Shi, J., Liu, J., *et al.* Recombinant truncated latency-associated peptide alleviates liver fibrosis in vitro and in vivo via inhibition of TGF- β /Smad pathway. *Mol. Med.* **28(1)**, 80 (2022).
4. Song, X., Qiu, Y., Shi, J., *et al.* Prokaryotic expression, purification and evaluation of anti-cardiac fibrosis activity of recombinant TGF- β latency associated peptide. *PeerJ* **10**, e12797 (2022).

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