TGF beta 1/TGFB1 LAP Protein, Human (249a.a, HEK293)

Cat. No.:	HY-P70433
Synonyms:	Transforming Growth Factor Beta-1; TGF-Beta-1; Latency-Associated Peptide; LAP; TGFB1; TGFB
Species:	Human
Source:	HEK293
Accession:	P01137 (L30-R278, C33S)
Gene ID:	7040
Molecular Weight:	20-45 kDa

PROPERTIES

AA Sequence	L S T S K T I D M E L V K R K R I E A I R G Q I L S K L R L A S P P S Q G E V P P G P L P E A V L A L Y N S T R D R V A G E S A E P E P E P E A D Y Y A K E V T R V L M V E T H N E I Y D K F K Q S T H S I Y M F F N T S E L R E A V P E P V L L S R A E L R L L R L K L K V E Q H V E L Y Q K Y S N N S W R Y L S N R L L A P S D S P E W L S F D V T G V V R Q W L S R G G E I E G F R L S A H C S C D S R D N T L Q V D I N G F T T G R R G D L A T I H G M N R P F L L L M A T P L E R A Q H L Q S S R H R R
Biological Activity	1.Measured by its ability to inhibit TGF-β1 activity on HT-2 mouse T cells. The ED_{50} this effect is 22.78 ng/mL in the presence of 1 ng/mL TGF-β1, corresponding to a specific activity is 4.39×10^4units/mg. 2.Measured by its ability to inhibit the IL-4-dependent proliferation of HT□2 mouse T cells.The ED_{50} for this effect is 0.01185 ng/ml, corresponding to a specific activity is 8.43×10^4 units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in PBS, pH 7.4. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The Latency-associated peptide (LAP) of Transforming growth factor beta-1 (TGF-beta-1) proprotein serves as a crucial precursor, forming a complex with TGF-beta-1 to constitute the regulatory and active subunits, respectively. LAP plays a pivotal role in maintaining the latent state of TGF-beta-1 during extracellular matrix storage, ensuring controlled activation upon specific triggers. Interactions with key 'milieu molecules' such as LTBP1, LRRC32/GARP, and LRRC33/NRROS intricately regulate TGF-beta-1 activation. LRRC33/NRROS influences TGF-beta-1 activation in macrophages and microglia, while LRRC32/GARP controls activation on activated regulatory T-cells (Tregs). Furthermore, interactions with integrins (ITGAV:ITGB6 or ITGAV:ITGB8) induce conformational changes in LAP, leading to the release of active TGF-beta-1. This dynamic interplay highlights LAP's crucial role in orchestrating the controlled activation of TGF-beta-1 in various physiological contexts.

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