Animal-Free TGF beta 1/TGFB1 Protein, Pig (His)

Cat. No.:	HY-P700251AF
Synonyms:	Differentiation inhibiting factor; Cartilage-inducing factor
Species:	Pig
Source:	E. coli
Accession:	P07200 (A279-S390)
Gene ID:	397078
Molecular Weight:	Approximately 13.7 kDa

PROPERTIES

AA Sequence	M A L D T N Y C F S S T E K N C C V R Q L Y I D F R K D L G W K W I H E P K G Y H A N F C L G P C P Y I W S L D T Q Y S K V L A L Y N Q H N P G A S A A P C C V P Q A L E P L P I V Y Y V G R K P K V E Q L S N M I V R S C K C S
Biological Activity	Measure by its ability to inhibit IL-4-induce proliferation in HT-2 cells.The ED_{50} for this effect is<0.1 ng/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized from a solution containing 20 mM sodium citrate, 0.2 M NaCl pH 4.5.
Endotoxin Level	<0.1 EU per 1 μg of the protein by the LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in 10 mM HCl.
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 Transforming Growth Factor Beta-1 (TGFB1) proprotein serves as the precursor for both the Latency-associated peptide (LAP) and the active Transforming Growth Factor Beta-1 (TGF-beta-1) chains, constituting the regulatory and active subunit of TGF-beta-1, respectively. It plays a crucial role in maintaining the TGF-beta-1 chain in a latent state during storage in the extracellular matrix. TGFB1 associates non-covalently with TGF-beta-1 and regulates its activation through interactions with 'milieu molecules', such as LTBP1, LRRC32/GARP, and LRRC33/NRROS, controlling the activation of TGF-beta-1. Notably, the interaction with LRRC33/NRROS regulates activation of TGF-beta-1 in macrophages and microglia, while the interaction with LRRC32/GARP controls activation on the surface of activated regulatory T-cells (Tregs). Additionally, the interaction of TGFB1 with integrins (ITGAV:ITGB6 or ITGAV:ITGB8) induces distortion of the Latency-associated peptide chain, leading to

	the subsequent release of the active TGF-beta-1.

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