

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human LAP TGF- β 1 in direct ELISAs and Western blots.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived and Chinese hamster ovary cell line CHO-derived recombinant human LAP TGF- β 1 Leu30-Ser390 Accession # P01137
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

Neutralization	Optimal dilution of this antibody should be experimentally determined.
Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

TGF- β 1 (transforming growth factor beta 1) and the closely related TGF- β 2 and - β 3 are members of the large TGF- β superfamily. TGF- β proteins are highly pleiotropic cytokines that regulate processes such as immune function, proliferation and epithelial-mesenchymal transition (1-3). Human TGF- β 1 cDNA encodes a 390 amino acid (aa) precursor that contains a 29 aa signal peptide and a 361 aa proprotein (4). A furin-like convertase processes the proprotein within the trans-Golgi to generate an N-terminal 249 aa (aa 30-278) latency-associated peptide (LAP) and a C-terminal 112 aa mature TGF- β 1 (aa 279-390) (4-6). Disulfide-linked homodimers of LAP and TGF- β 1 remain non-covalently associated after secretion, forming the small latent TGF- β 1 complex (4-8). Purified LAP is also capable of associating with active TGF- β with high affinity, and can neutralize TGF- β activity (9). Covalent linkage of LAP to one of three latent TGF- β binding proteins (LTBPs) creates a large latent complex that may interact with the extracellular matrix (5-7). TGF- β activation from latency is controlled both spatially and temporally, by multiple pathways that include actions of proteases such as plasmin and MMP9, and/or by thrombospondin 1 or selected integrins (5, 8). The LAP portion of human TGF- β 1 shares 91%, 92%, 85%, 86% and 88% aa identity with porcine, canine, mouse, rat and equine TGF- β 1 LAP, respectively, while mature human TGF- β 1 portion shares 100% aa identity with porcine, canine and bovine TGF- β 1, and 99% aa identity with mouse, rat and equine TGF- β 1. Although different isoforms of TGF- β are naturally associated with their own distinct LAPs, the TGF- β 1 LAP is capable of complexing with, and inactivating, all other human TGF- β isoforms and those of most other species (9). Mutations within the LAP are associated with Camurati-Engelmann disease, a rare sclerosing bone dysplasia characterized by inappropriate presence of active TGF- β 1 (10).

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