

Recombinant human TGFb1

Catalog No: #AG0030

Orders: order@signalwayantibody.comSupport: tech@signalwayantibody.com

Description

Product Name	Recombinant human TGFb1
Host Species	HEK293
Purification	> 95% by Tris-Bis
Immunogen Description	Ala279-Ser390
Target Name	TGFb1
Other Names	Human CED Protein, Human DPD1 Protein, Human LAP Protein, Human TGF-beta 1 Protein, Human TGFb Protein, Human TGFbeta Protein
Accession No.	Uniprot:P01137Gene ID:7040#NP:NC_000019.10
Uniprot	P01137
GeneID	7040
Target Species	human
Calculated MW	12.8 KDa
Tag Info	additional amino acid free
Formulation	0.22 µm filtered solution of citric acid, PH2.5.
Storage	Aliquot and store at -80°C. Avoid repeated freeze/thaw cycles.

Background

TGF-beta 1 (transforming growth factor beta 1) is one of three closely related mammalian members of the large TGF-beta superfamily that share a characteristic cystine knot structure (1?7). TGF-beta 1, -2 and -3 are highly pleiotropic cytokines that are proposed to act as cellular switches that regulate processes such as immune function, proliferation and epithelial-mesenchymal transition (1?4). Each TGF-beta isoform has some non-redundant functions; for TGF-beta 1, mice with targeted deletion show defects in hematopoiesis and endothelial differentiation, and die of overwhelming inflammation (2). Human TGF-beta 1 cDNA encodes a 390 amino acid (aa) precursor that contains a 29 aa signal peptide and a 361 aa proprotein (8). A furin-like convertase processes the proprotein to generate an N-terminal 249 aa latency-associated peptide (LAP) and a C-terminal 112 aa mature TGF-beta 1 (8, 9). Disulfide-linked homodimers of LAP and TGF-beta 1 remain non-covalently associated after secretion, forming the small latent TGF-beta 1 complex (8?10). Covalent linkage of LAP to one of three latent TGF-beta binding proteins (LTBPs) creates a large latent complex that may interact with the extracellular matrix (9, 10). TGF-beta is activated from latency by pathways that include actions of the protease plasmin, matrix metalloproteases, thrombospondin 1 and a subset of integrins (10). Mature human TGF-beta 1 shares 100% aa identity with pig, dog and cow TGF-beta 1, and 99% aa identity with mouse, rat and horse TGF-beta 1. It demonstrates cross-species activity (1). TGF-beta 1 signaling begins with high-affinity binding to a type II ser/thr kinase receptor termed TGF-beta RII. This receptor then phosphorylates and activates a second ser/thr kinase receptor, TGF-beta RI (also called activin receptor-like kinase (ALK) ?5), or alternatively, ALK?1. This complex phosphorylates and activates Smad proteins that regulate transcription (3, 11, 12). Contributions of the accessory receptors betaglycan (also known as TGF-beta RIII) and endoglin, or use of Smad-independent signaling pathways, allow for disparate actions observed in response to TGF-beta in different contexts (11).

Note: This product is for in vitro research use only