

Recombinant Mouse TSP1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51393

Size: 10ug, 100ug

Protein Name: Thrombospondin-1 (Glycoprotein G)

Synonym: Thbs1, Tsp1

UniProt ID: P35441

UniProt Link: www.uniprot.org/uniprotkb/P35441/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1170 AA

Molecular Weight: 130 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MELLRGLGVFLHLMCGSNRIPESGGDNGVFDIFELIGGARRGPGRRLVKGQDLSSPAFRIENANLIP
AVPDDKFQDLLDAVWADKGFIFLASLRQMKKTRGTLLAVERKDNTGQIFSVVSNGKAGTLDLSLSLP
GKQQVVSVEEALLATGQWKSITLFVQEDRAQLYIDCKMESAEADVPIQSIFTRDLASVARLRVAKGD
VNDNFQGVQLQNVRFVFGTTPEDILRNKGCSSSTNVLLTLDNNVNGSSPAIRNTYIGHKTKDLQAICG
LSCDELSSMVLELKGRLTIVTTLQDSIRKVTEENRELVSELKRPLCFHNGVQYKNNEEWTVDSCTE
CHCQNSVTICKKVSCPIMPCSNATVPDGECCPRCWPSDSADDGWSPWSEWTSCSATCGNGIQQR
GRSCDSLNNRCEGSSVQTRTCHIQECDKRFKQDGGWSHWSPWSSCSVTCGDGVITRIRLCNSPSP
QMNGKPCEGEARETKACKKDACPINGGWGPWSPWDICSVTCGGGVQRRSRLCENNPTPQFGGKD
CVGDVTENQVCNKQDCPIDGCLSNPCFAGAKCTSYPDGSWKCGACPPGYSGNGIQCKDVDECKE
VPDACFNHNGEHRCKNTDPGYNCLPCPPRFTGSQPFGRGVEHAMANKQVCKPRNPCTDGTHDCN
KNAKCNYLGHYS DPMYRCECKPGYAGNGIICGEDTDLDGWPENENLVCVANATYHCKKDNCNLPN
SGQEDYDKDGIGDADDDDDNDKIPDDRDNCPFHYNPAQYDYDRDDVGDRCDNCPYHNHNPDAQD
TDKNGEGDACAVDIDGDGILNERDNCQYVYNVDQRDMDMGVGDQCDNCPLEHNPDQLDSDSDLI
GDTCDNNQDIDEDGHQNNLDNCPYVPNANQADHDKDGKGDACDHDDNDGIPDDRDNCRNLPNP
DQKDSGDGGRGDACKDDFDHNDVPDIDDICPENFDISETDFRRFQMIPLDPKGT SQNDPNWVVRH
QGKELVQTVNCDPGLAVGYDEFNAVD FSGTFFINTERDDDYAGFVFGYQSSSRFYVVMWKQVTQS
YWDTNPTRAQGYSGLSVKVNSTTGPGEHLRNALWHTGNTPGQVRTLWHDPRHIGWKDFTAYRW
RLSHRPKTGYIRVVMYEGKKIMADSGPIYDKTYAGGRLGLFVFSQEMVFFSDMKYECRDS



3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Thrombospondin-1 (Glycoprotein G) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Adhesive glycoprotein that mediates cell-to-cell and cell-to-matrix interactions (By similarity). Multifunctional, involved in inflammation, angiogenesis, wound healing, reactive oxygen species (ROS) signaling, nitrous oxide (NO) signaling, apoptosis, senescence, aging, cellular self-renewal, stemness, and cardiovascular and metabolic homeostasis (By similarity). Negatively modulates dendritic cell activation and cytokine release, as part of an autocrine feedback loop, contributing to the resolution of inflammation and immune homeostasis (By similarity). Ligand for receptor CD47 (By similarity). Modulates nitrous oxide (NO) signaling via CD47, hence playing a role as a pressor agent, supporting blood pressure (PubMed:20610415). Plays a role in endothelial cell senescence, acting via CD47, by increasing the abundance and activation of NADPH oxidase NOX1, and so generating excess ROS (PubMed:29042481). Inhibits stem cell self-renewal, acting via CD47 signaling, probably by regulation of the stem cell transcription factors POU5F1/OCT4, SOX2, MYC/c-Myc and KLF4 (PubMed:23591719). Negatively modulates wound healing, acting via CD47 (PubMed:18156939). Ligand for receptor CD36 (By similarity). Involved in inducing apoptosis in podocytes in response to elevated free fatty acids, acting via CD36 (PubMed:25835637). Plays a role in suppressing angiogenesis, acting, depending on context, via CD36 or CD47 (By similarity). Promotes cellular senescence in a TP53-CDKN1A-RB1 signaling-dependent manner (PubMed:29042481). Ligand for immunoglobulin-like cell surface receptor SIRPA (By similarity). Involved in ROS signaling in non-phagocytic cells, stimulating NADPH oxidase-derived ROS production, acting via interaction with SIRPA (By similarity). Plays a role in metabolic dysfunction in diet-induced obesity, perhaps acting by exacerbating adipose inflammatory activity; its effects may be mediated, at least in part, through enhanced adipocyte proliferation (PubMed:23757408). Plays a role in ER stress response, via its interaction with the activating transcription factor 6 alpha (ATF6) which produces adaptive ER stress response factors (PubMed:22682248). May be involved in age-related conditions, including metabolic dysregulation, during normal aging (PubMed:29042481, PubMed:32679764).

Subcellular Localization: Secreted . Cell surface . Secreted, extracellular space, extracellular matrix . Endoplasmic reticulum . Sarcoplasmic reticulum . Note=Secreted by thrombin-activated platelets and binds to the cell surface in the presence of extracellular Ca²⁺ (By similarity). Incorporated into the extracellular matrix (ECM) of fibroblasts (By similarity). The C-terminal region in trimeric form is required for retention in the ECM (By similarity). Also detected in the endoplasmic reticulum and sarcoplasmic reticulum where it plays a role in the ER stress response (PubMed:22682248).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer- composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.