abcam

ab1823

Anti-Thrombospondin 1 antibody [A6.1]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.3 - 7.5 Preservative: 0.05% Sodium azide Constituents: 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Full Length Protein corresponding to Human THBS1. The exact immunogen used to generate this antibody is proprietary information. Database link P07996
Clone number	A6.1
Purity	IgG fraction

Reactivity data

Flow Cyt

Tested

Species	Rat
Dilution info	1-2 µg/cells for 6 µg/cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Human

Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information THBS1

Function	Adhesive glycoprotein that mediates cell-to-cell and cell-to-matrix interactions (PubMed:15014436, PubMed:18285447, PubMed:2430973, PubMed:6489349). 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 (PubMed:10613822, PubMed:11134179, PubMed:1371676, PubMed:14568985, PubMed:24511121, PubMed:29042481, PubMed:32679764). Negatively modulates dendritic cell activation and cytokine release, as part of an autocrine feedback loop, contributing to the resolution of inflammation and immune homeostasis (PubMed:14568985). Ligand for receptor CD47 (PubMed:19004835, PubMed:8550562). Modulates nitrous oxide (NO) signaling via CD47, hence playing a role as a pressor agent, supporting blood pressure (By similarity). 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 (By similarity). Negatively modulates wound healing, acting via CD47 (By similarity). Ligand for receptor CD36 (PubMed:10613822, PubMed:11134179, PubMed:1371676). Involved in inducing apoptosis in podocytes in response to elevated free fatty acids, acting via CD36 (By similarity). Plays a role in suppressing angiogenesis, acting, depending on context, via CD36 or CD47 (PubMed:10613822, PubMed:11134179, PubMed:1371676, PubMed:32679764). Promotes cellular senescence in a TP53-CDKN1A-RB1 signaling-dependent manner (PubMed:29042481). Ligand for immunoglobulin-like cell surface receptor SIRPA (PubMed:24511121). Involved in ROS signaling in non-phagocytic cells, stimulating NADPH oxidase-derived ROS production, acting via interaction with SIRPA (PubMed:24511121). 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 (By similarity). 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 (By similarity). May be involved in age-related conditions, including metabolic dysregulation, during normal aging (PubMed:29042481, PubMed:32679764).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Thrombospondin 1 also known as TSP1 is a multi-functional glycoprotein involved in cellular processes like adhesion migration and tumorigenesis. It has a molecular weight of approximately 450 kDa. TSP1 is produced by multiple cell types including endothelial cells and fibroblasts and it is widely expressed in the extracellular matrix of both normal and tumor tissues. As a member of the thrombospondin family it interacts with cell receptors like integrins and CD36 to mediate its diverse functions.
Biological function summary	TSP1 is significant in modulating angiogenesis immune response and apoptosis. It acts as an anti-angiogenic factor by inhibiting endothelial cell proliferation and migration. TSP1 is a part of a larger complex where it interacts with other matrix proteins and growth factors to fine-tune cellular behavior within tissues. Through its binding domains it inhibits matrix metalloproteinases helping regulate matrix composition and tissue remodeling.
Pathways	TSP1 influences both the TGF-beta and NF-kB signaling pathways. In the TGF-beta pathway TSP1 activates latent TGF-beta contributing to tissue repair and fibrosis processes. It works synergistically with proteins like SMADs in these pathways. In the NF-kB pathway TSP1 modulates immune responses and inflammatory processes. Its interaction with CD36 and integrins in these pathways underlines its versatile role in cellular signaling.
Associated diseases and disorders	TSP1 has been investigated in cancer progression and cardiovascular diseases. In cancer TSP1's anti-angiogenic properties suppress tumor vascularization which can slow tumor growth. Aberrant TSP1 expression levels have also been linked to atherosclerosis development as it interacts with endothelial cells and inflammatory molecules like TNF-alpha. In both these contexts TSP1 engages with proteins such as integrins and CD36 to exert its influence on disease progression.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

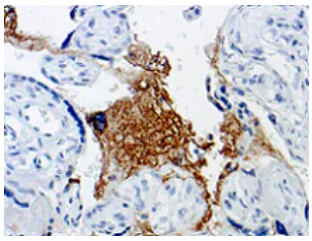
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
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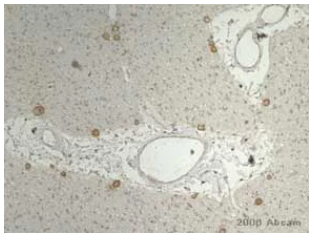
5 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thrombospondin 1 antibody [A6.1] (ab1823)

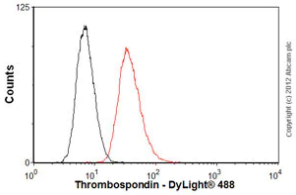
Thrombospondin 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Thrombospondin 1 antibody

Immunohistochemical analsysis of formalin-fixed paraffin-embedded human placenta, labeling Thrombospondin with ab1823.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thrombospondin 1 antibody [A6.1] (ab1823)

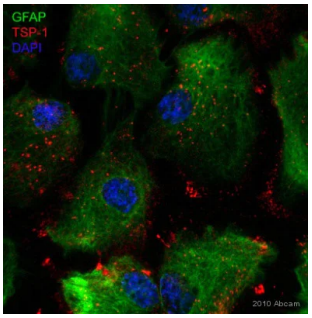
ab1823 at a 1/25 dilution staining human Glioblastoma Multiform tissue sections by Immunohistochemistry (Formalin-fixed paraffin-embedded sections). Following heat mediated antigen retrieval the tissue was stained with the antibody for 1 hour. Bound antibody was detected using biotin anti-mouse probe .
This image is courtesy of an Abreview submitted by **Francisca Wu** on **14 March 2006.**



Flow Cytometry - Anti-Thrombospondin 1 antibody [A6.1] (ab1823)

Thrombospondin 1 Flow Cytometry staining using mouse Anti-Thrombospondin 1 antibody

Overlay histogram showing PC12 cells stained with ab1823 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab1823, 2µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in PC12 cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

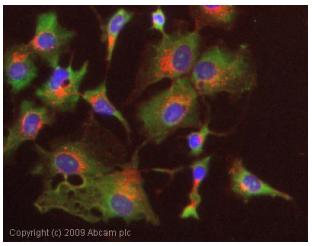


This image is courtesy of an anonymous customer review

Immunocytochemistry/ Immunofluorescence - Anti-Thrombospondin 1 antibody [A6.1] (ab1823)

Thrombospondin 1 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Thrombospondin 1 antibody

ab1823 staining Thrombospondin in a primary culture of rat astrocytes by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with paraformaldehyde, permeabilized with 0.3% Triton and blocked with 3% BSA for 15 minutes at 20°C. Samples were incubated with primary antibody (1/50: 3% BSA; PBS) for 30 minutes at 20°C. A Cy3®-conjugated-Donkey polyclonal to mouse IgG (1/500) was used as secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-Thrombospondin 1 antibody [A6.1] (ab1823)

Thrombospondin 1 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Thrombospondin 1 antibody

ICC/IF image of ab1823 stained HepG2 cells. The cells were 100% methanol fixed (5 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab1823, 1µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

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