abcam

ab272018

Anti-Thrombomodulin antibody [SP309] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	SP309
Purification technique	Affinity purification Protein A/G
Concentration	0.96 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS by protein A/G.

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human

Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	Perform heat mediated antigen retrieval with EDTA buffer pH 8.0 before commencing with IHC staining protocol.

Target data

See full target information THBD

Function	Endothelial cell receptor that plays a critical role in regulating several physiological processes including hemostasis, coagulation, fibrinolysis, inflammation, and angiogenesis (PubMed:10761923). Acts as a cofactor for thrombin activation of protein C/PROC on the surface of vascular endothelial cells leading to initiation of the activated protein C anticoagulant pathway (PubMed:29323190, PubMed:33836597, PubMed:9395524). Also accelerates the activation of the plasma carboxypeptidase B2/CPB2, which catalyzes removal of C-terminal basic amino acids from its substrates including kinins or anaphylatoxins leading to fibrinolysis inhibition (PubMed:26663133). Plays critical protective roles in changing the cleavage specificity of protease-activated receptor 1/PAR1, inhibiting endothelial cell permeability and inflammation (By similarity). Suppresses inflammation distinctly from its anticoagulant cofactor activity by sequestering HMGB1 thereby preventing it from engaging cellular receptors such as RAGE and contributing to the inflammatory response (PubMed:15841214).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab272018 is the carrier-free version of ab227701.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Thrombomodulin also known as CD141 is a glycoprotein with a mass of approximately 74 kDa. It is an integral membrane protein expressed on the surface of endothelial cells. Thrombomodulin acts mechanically by binding thrombin an enzyme involved in blood coagulation to modulate its activity. This binding substantially alters thrombin's substrate specificity turning it into an anticoagulant enzyme that activates protein C instead of a procoagulant enzyme.
Biological function summary	Thrombomodulin regulates blood coagulation and maintains hemostatic balance. It forms a complex with thrombin on endothelial cells facilitating the conversion of protein C to activated protein C (APC). Activated protein C plays a pivotal role in controlling blood clot formation by proteolytically inactivating Factors Va and VIIIa. This function is important for preventing excessive clotting while ensuring proper wound healing processes.
Pathways	Thrombomodulin works chiefly within the anticoagulation pathway. It interacts directly with the thrombin-protein C pathway to achieve the activation of protein C. Additionally it interfaces with other pathways sharing mutual components such as endothelial cell proliferation and inflammation modulation. Related proteins

include thrombin and protein C along with protein S which serves as a cofactor for APC's anticoagulant actions.

Associated diseases and disorders

Thrombomodulin dysregulation can lead to thrombosis and vascular inflammation. A deficiency or altered expression of thrombomodulin has been linked to thromboembolic disorders and atherosclerosis. In these conditions improper activation of protein C in the presence of decreased thrombomodulin function can exacerbate clot formation. Monitoring the levels of proteins like thrombin and protein C within these diseases can provide insights into endothelial dysfunction and potential therapeutic approaches.

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

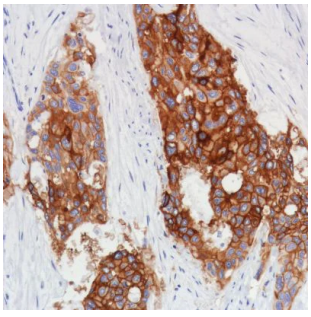
We do not recommend this combination. It is not covered by our product promise.

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:
Terms & Conditions.

6 product images

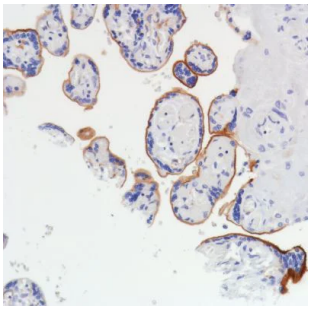


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thrombomodulin antibody [SP309] - BSA and Azide free (ab272018)

Thrombomodulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Thrombomodulin antibody

Formalin-fixed, paraffin-embedded human cervical squamous cell carcinoma tissue stained for Thrombomodulin using ab227701 at 1/100 dilution in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab227701).

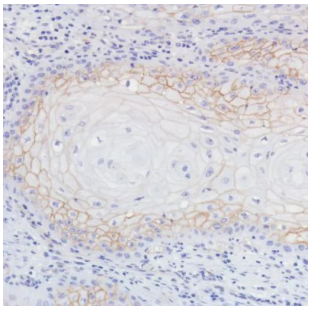


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thrombomodulin antibody [SP309] - BSA and Azide free (ab272018)

Thrombomodulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Thrombomodulin antibody

Formalin-fixed, paraffin-embedded human placenta tissue stained for Thrombomodulin using ab227701 at 1/100 dilution in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab227701).

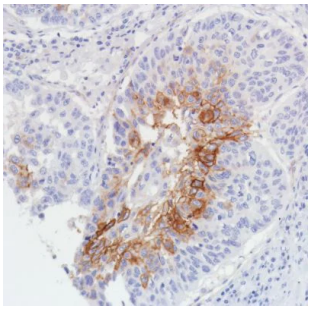


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thrombomodulin antibody [SP309] - BSA and Azide free (ab272018)

Thrombomodulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Thrombomodulin antibody

Formalin-fixed, paraffin-embedded human skin squamous cell carcinoma tissue stained for Thrombomodulin using ab227701 at 1/100 dilution in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab227701).

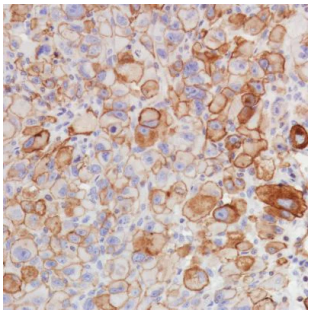


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thrombomodulin antibody [SP309] - BSA and Azide free (ab272018)

Thrombomodulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Thrombomodulin antibody

Formalin-fixed, paraffin-embedded human lung squamous cell carcinoma tissue stained for Thrombomodulin using ab227701 at 1/100 dilution in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab227701).

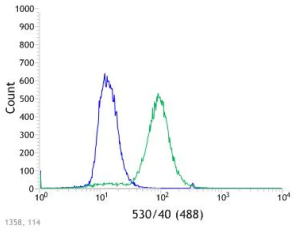


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thrombomodulin antibody [SP309] - BSA and Azide free (ab272018)

Thrombomodulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Thrombomodulin antibody

Formalin-fixed, paraffin-embedded human mesothelioma tissue stained for Thrombomodulin using ab227701 at 1/100 dilution in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab227701).



Flow Cytometry (Intracellular) - Anti-Thrombomodulin antibody [SP309] - BSA and Azide free (ab272018)

Thrombomodulin Flow Cytometry (Intracellular) staining using rabbit Anti-Thrombomodulin antibody

Flow cytometric analysis of THP-1 (human monocytic leukemia cell line) cell line labeling Thrombomodulin with ab227701 at 1/300 dilution (green) compared with a rabbit IgG negative control (blue).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab227701).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.