abcam

**ab227701**

# Anti-Thrombomodulin antibody [SP309] - C-terminal

Recombinant | RabMAb

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.6 Preservative: 0.099% Sodium azide Constituents: PBS, 1% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | SP309 |
| **Purification technique** | Affinity purification Protein A/G |
| **Purification notes** | Purified from TCS by protein A/G. |

## Reactivity data

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/300 |
| **Notes** | - |

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/100 |
| **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

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|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **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** | 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**

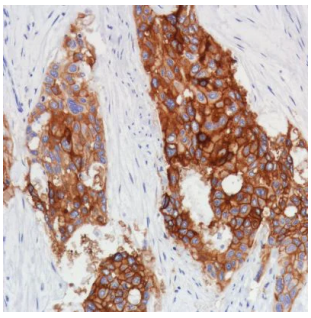
We do not recommend this combination. It is not covered by our product promise.

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.

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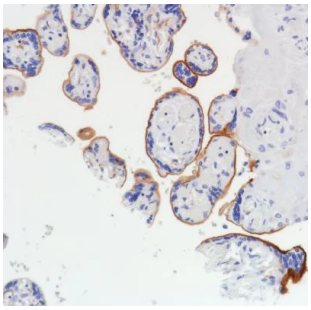
## 6 product images



### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thrombomodulin antibody [SP309] - C-terminal (ab227701)

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

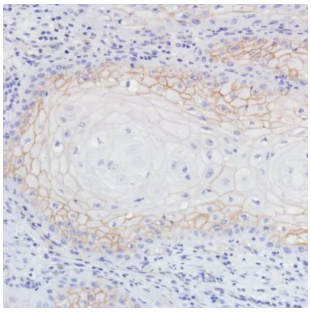
Formalin-fixed paraffin-embedded human cervical squamous cell carcinoma tissue stained for Thrombomodulin using ab227701 at 1/100 dilution in immunohistochemical analysis.



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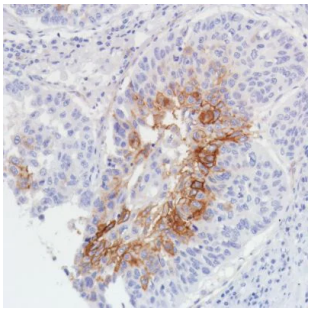
Formalin-fixed paraffin-embedded human placenta tissue stained for Thrombomodulin using ab227701 at 1/100 dilution in immunohistochemical analysis.



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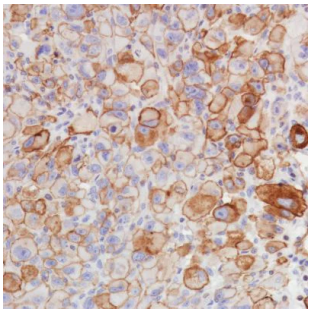
Formalin-fixed paraffin-embedded human skin squamous cell carcinoma tissue stained for Thrombomodulin using ab227701 at 1/100 dilution in immunohistochemical analysis.



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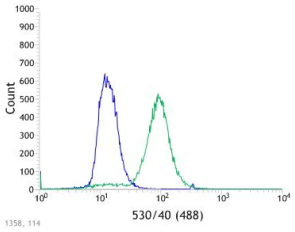
Formalin-fixed paraffin-embedded human lung squamous cell carcinoma tissue stained for Thrombomodulin using ab227701 at 1/100 dilution in immunohistochemical analysis.



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thrombomodulin antibody [SP309] - C-terminal (ab227701)

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.




## Flow Cytometry (Intracellular) - Anti-Thrombomodulin antibody [SP309] - C-terminal (ab227701)

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).

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