

DESCRIPTION	
Species Reactivity	Mouse
Specificity	Detects mouse Thrombomodulin/BDCA-3 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human (rh) Thrombomodulin is observed.
Source	Monoclonal Rat IgG _{2B} Clone # 461714
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Thrombomodulin/BDCA-3 Leu17-Ser517 Accession # P15306
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

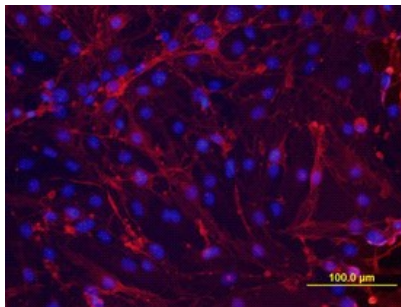
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Mouse Thrombomodulin/THBD/CD141 (Catalog # 3894-PA) under non-reducing conditions only
Flow Cytometry	2.5 µg/10 ⁶ cells	See Below
Immunocytochemistry	8-25 µg/mL	See Below
Immunohistochemistry	8-25 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

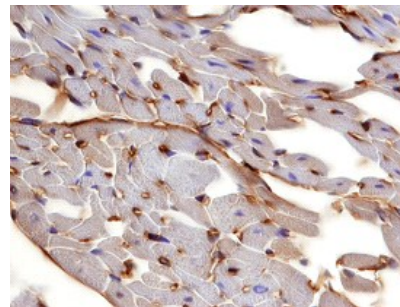
DATA

Immunocytochemistry



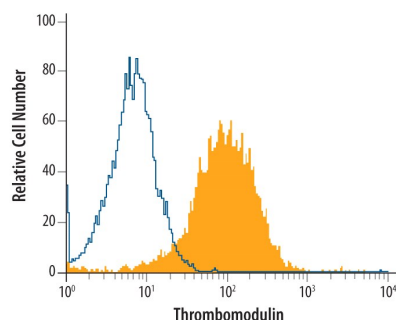
Thrombomodulin/BDCA-3 in bEnd.3 Mouse Cell Line. Thrombomodulin/BDCA-3 was detected in immersion fixed bEnd.3 mouse endothelioma cell line using Mouse Thrombomodulin/BDCA-3 Monoclonal Antibody (Catalog # MAB3894) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Rat IgG Secondary Antibody (red; Catalog # NL013) and counterstained with DAPI (blue). View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

Immunohistochemistry



Thrombomodulin/BDCA-3 in Mouse Heart. Thrombomodulin/BDCA-3 was detected in perfusion fixed frozen sections of mouse heart using 25 µg/mL Mouse Thrombomodulin/BDCA-3 Monoclonal Antibody (Catalog # MAB3894) overnight at 4 °C. Tissue was stained with the Anti-Rat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS017) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

Flow Cytometry



Detection of Thrombomodulin/BDCA-3 in bEnd.3 Mouse Cell Line by Flow Cytometry. bEnd.3 mouse endothelioma cell line was stained with Mouse Thrombomodulin/BDCA-3 Monoclonal Antibody (Catalog # MAB3894, filled histogram) or isotype control antibody (Catalog # MAB0061, open histogram), followed by Phycoerythrin-conjugated Anti-Rat IgG F(ab')₂ Secondary Antibody (Catalog # F0105B).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Encoded by the THBD gene, Thrombomodulin is also known as CD141 antigen. The deduced amino acid sequence of mouse THBD predicts a signal peptide (aa 1 to 16) and a mature chain (aa 17 to 577) that consists of the following domains: C-type lectin (aa 31 to 167), EGF-like (aa 240 to 280, aa 283 to 323, aa 324 to 362, aa 364 to 404, aa 405 to 439, and aa 440 to 480), transmembrane (aa 518 to 541) and cytoplasmic (aa 542 to 577) (1). The R&D Systems rmTHBD consists of aa 17 to 517, corresponding to the extracellular portion of the type I membrane protein. Predominantly synthesized by vascular endothelial cells, THBD inhibits coagulation and fibrinolysis (2-4). It functions as a cell surface receptor and an essential cofactor for active thrombin, which in turn activates protein C and thrombin-activatable fibrinolysis inhibitor (TAFI), also known as carboxypeptidase B2 (CPB2). Activated protein C (APC), facilitated by protein S, degrades coagulation factors Va and VIIIa, which are required for thrombin activation. Activated CPB2 cleaves basic C-terminal amino acid residues of its substrates, including fibrin, preventing the conversion of plasminogen to plasmin. In addition, THBD gene polymorphisms are associated with human disease and THBD plays a role in thrombosis, stroke, arteriosclerosis, and cancer (5). For example, increased serum levels of THBD, due to protease cleavage, have been associated with smoking, cardiac surgery, atherosclerosis, liver cirrhosis, diabetes mellitus, cerebral and myocardial infarction, and multiple sclerosis (6).

References:

1. Dittman, W.A. and P.W. Majerus (1989) *Nucleic Acids Res.* **17**:802.
2. Van de Wouwer, M. *et al.* (2004) *Arterioscler. Thromb. Vasc.* **24**:1374.
3. Wu, K.K. *et al.* (2000) *Ann Med.* **32**:73.
4. Li, Y.H. *et al.* (2006) *Cardiovasc. Hematol. Agents Med. Chem.* **4**:183.
5. Weiler, H. and B.H. Isermann (2003) *J. Thromb. Haemost.* **1**:1515.
6. Califano, F. *et al.* (2000) *Eur. Rev. Med. Pharmacol. Sci.* **4**:59.