

BACKGROUND

Thrombomodulin TM, also called CD141, is a type I membrane receptor that is specific to endothelial cells. TM has a cysteine-rich extracellular domain with six EGF-like regions. TM forms a complex with Thrombin, which activates Protein C to generate activated Protein C (APC), an anticoagulant enzyme. APC together with Protein S inhibits coagulation by inactivating Factors Va and VIIIa. Deletion of the TM gene results in embryonic lethality in mice.

CHROMOSOMAL LOCATION

Genetic locus: THBD (human) mapping to 20p11.21.

SOURCE

TM (D-3) is a mouse monoclonal antibody raised against amino acids 22-321 of TM of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TM (D-3) is available conjugated to agarose (sc-13164 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13164 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13164 PE), fluorescein (sc-13164 FITC), Alexa Fluor® 488 (sc-13164 AF488), Alexa Fluor® 546 (sc-13164 AF546), Alexa Fluor® 594 (sc-13164 AF594) or Alexa Fluor® 647 (sc-13164 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13164 AF680) or Alexa Fluor® 790 (sc-13164 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, TM (D-3) is available conjugated to Alexa Fluor® 405 (sc-13164 AF405), 100 µg/2 ml, for IF, IHC(P) and FCM.

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APPLICATIONS

TM (D-3) is recommended for detection of thrombomodulin of human origin by Western Blotting (starting dilution 1:500, dilution range 1:500-1:1,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

Suitable for use as control antibody for TM siRNA (h): sc-36686, TM shRNA Plasmid (h): sc-36686-SH and TM shRNA (h) Lentiviral Particles: sc-36686-V.

Molecular Weight of TM: 105 kDa.

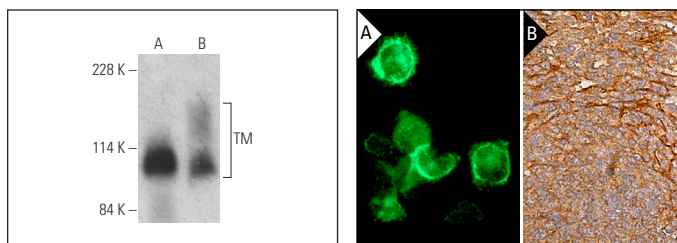
Positive Controls: THP-1 cell lysate: sc-2238, A549 cell lysate: sc-2413 or AML-193 whole cell lysate: sc-364182.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA

TM (D-3) HRP: sc-13164 HRP. Direct western blot analysis of TM expression in THP-1 (A) and A549 (B) whole cell lysates.

TM (D-3): sc-13164. Immunofluorescence staining of methanol-fixed THP-1 cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic staining of cells in white pulp and cells in red pulp and membrane and cytoplasmic staining of endothelial cells (B).

SELECT PRODUCT CITATIONS

- Huang, H.C., et al. 2003. Thrombomodulin-mediated cell adhesion: involvement of its lectin-like domain. *J. Biol. Chem.* 278: 46750-46759.
- Huang, Y.H., et al. 2015. Thrombomodulin promotes corneal epithelial wound healing. *PLoS ONE* 10: e0122491.
- Uehara, K., et al. 2016. Differentiated localizations of phosphorylated focal adhesion kinase in endothelial cells of rat splenic sinus. *Cell Tissue Res.* 364: 611-622.
- Hsu, Y.Y., et al. 2016. Thrombomodulin promotes focal adhesion kinase activation and contributes to angiogenesis by binding to Fibronectin. *Oncotarget* 7: 68122-68139.
- Lin, W.L., et al. 2017. Monocytic thrombomodulin promotes cell adhesion through interacting with its ligand, Lewisy. *Immunol. Cell Biol.* 95: 372-379.
- Pan, B., et al. 2017. The fifth epidermal growth factor-like region of thrombomodulin alleviates murine graft-versus-host disease in a G protein-coupled receptor 15 dependent manner. *Biol. Blood Marrow Transplant.* 23: 746-756.
- Cheng, T.L., et al. 2018. Plasminogen/thrombomodulin signaling enhances VEGF expression to promote cutaneous wound healing. *J. Mol. Med.* 96: 1333-1344.
- Pai, V.C., et al. 2018. The chondroitin sulfate moiety mediates thrombomodulin-enhanced adhesion and migration of vascular smooth muscle cells. *J. Biomed. Sci.* 25: 14.
- Längin, M., et al. 2018. Consistent success in life-supporting porcine cardiac xenotransplantation. *Nature* 564: 430-433.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.