SANTA CRUZ BIOTECHNOLOGY, INC.

TM (D-3): sc-13164

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.

REFERENCES

1. Jackman, R.W., et al. 1987. Human thrombomodulin gene is intron depleted: nucleic acid sequences of the cDNA and gene predict protein structure and suggest sites of regulatory control. Proc. Natl. Acad. Sci. USA 84: 6425-6429.
2. Suzuki, K., et al. 1987. Structure and expression of human thrombomodulin, a thrombin receptor on endothelium acting as a cofactor for protein C activation. EMBO J. 6: 1891-1897.

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.

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 10^6 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.

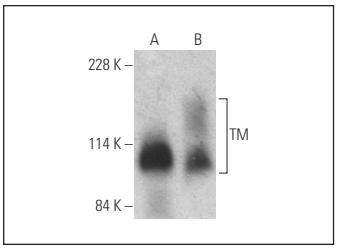
Molecular Weight of TM: 105 kDa.

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

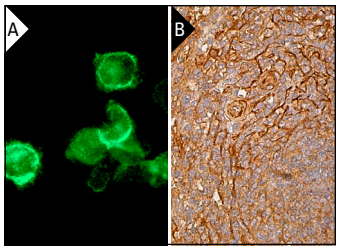
STORAGE

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

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

1. Huang, H.C., et al. 2003. Thrombomodulin-mediated cell adhesion: involvement of its lectin-like domain. J. Biol. Chem. 278: 46750-46759.
2. Huang, Y.H., et al. 2015. Thrombomodulin promotes corneal epithelial wound healing. PLoS ONE 10: e0122491.
3. Hsu, Y.Y., et al. 2016. Thrombomodulin promotes focal adhesion kinase activation and contributes to angiogenesis by binding to Fibronectin. Oncotarget 7: 68122-68139.
4. Lin, W.L., et al. 2017. Monocytic thrombomodulin promotes cell adhesion through interacting with its ligand, Lewis^y. Immunol. Cell Biol. 95: 372-379.
5. Längin, M., et al. 2018. Consistent success in life-supporting porcine cardiac xenotransplantation. Nature 564: 430-433.
6. Peghaire, C., et al. 2019. The transcription factor ERG regulates a low shear stress-induced anti-thrombotic pathway in the microvasculature. Nat. Commun. 10: 5014.
7. Chen, C.H., et al. 2020. Thrombomodulin functional domains support osteoblast differentiation and bone healing in diabetes in mice. J. Bone Miner. Res. 35: 1812-1823.
8. Hinrichs, A., et al. 2021. Growth hormone receptor knockout to reduce the size of donor pigs for preclinical xenotransplantation studies. Xenotransplantation 28: e12664.
9. Hsieh, L.T., et al. 2022. Aberrant stromal tissue factor localisation and mycolactone-driven vascular dysfunction, exacerbated by IL-1β, are linked to fibrin formation in Buruli ulcer lesions. PLoS Pathog. 18: e1010280.

RESEARCH USE

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