SANTA CRUZ BIOTECHNOLOGY, INC.

podoplanin (8.1.1): sc-53533

BACKGROUND

Puromycin aminonucleoside nephrosis (PAN) is a rat model for human minimal change nephropathy. During PAN, severe proteinuria is induced that is paralleled by a reduced expression of a rat podocyte protein, named podoplanin. Podoplanin, also known as glycoprotein 38 (gp38) is a type I membrane protein. Podoplanin localizes in stromal cells of peripheral lymphoid tissue and thymic epithelial cells. As a regulator of the lymphatic endothelium, podoplanin probably plays a role in maintaining the unique shape of podocytes.

REFERENCES

1. Farr, A.G., et al. 1992. Characterization and cloning of a novel glycoprotein expressed by stromal cells in T-dependent areas of peripheral lymphoid tissues. J. Exp. Med. 176: 1477-1482.
2. Farr, A., et al. 1992. Characterization of an antigenic determinant preferentially expressed by type I epithelial cells in the murine thymus. J. Histochem. Cytochem. 40: 651-664.

CHROMOSOMAL LOCATION

Genetic locus: Pdpn (mouse) mapping to 4 E1.

SOURCE

podoplanin (8.1.1) is a Syrian hamster monoclonal antibody raised against a thymic epithelial cell line of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

podoplanin (8.1.1) is available conjugated to agarose (sc-53533 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53533 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53533 PE), fluorescein (sc-53533 FITC), Alexa Fluor® 488 (sc-53533 AF488), Alexa Fluor® 546 (sc-53533 AF546), Alexa Fluor® 594 (sc-53533 AF594) or Alexa Fluor® 647 (sc-53533 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53533 AF680) or Alexa Fluor® 790 (sc-53533 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

podoplanin (8.1.1) is recommended for detection of podoplanin of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with human podoplanin.

Suitable for use as control antibody for podoplanin siRNA (m): sc-44756, podoplanin shRNA Plasmid (m): sc-44756-SH and podoplanin shRNA (m) Lentiviral Particles: sc-44756-V.

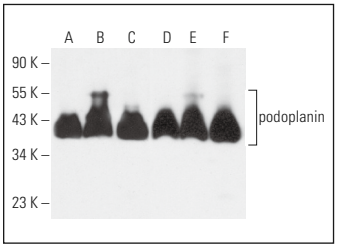
Molecular Weight of podoplanin: 43 kDa.

Positive Controls: mouse kidney extract: sc-2255, mouse thymus extract: sc-2406 or C3H/10T1/2 cell lysate: sc-3801.

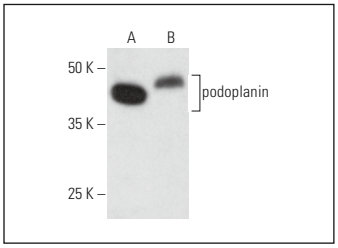
STORAGE

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

DATA



podoplanin (8.1.1): sc-53533. Western blot analysis of podoplanin expression in mouse lymph (**A**,**D**), mouse kidney (**B**,**E**) and mouse thymus (**C**,**F**) tissue extracts under reducing (**A**,**B**,**C**) and non-reducing (**D**,**E**,**F**) conditions.



podoplanin (8.1.1): sc-53533. Western blot analysis of podoplanin expression in B4 (**A**) and C3H/10T1/2 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Fu, J., et al. 2008. Endothelial cell O-glycan deficiency causes blood/ lymphatic misconnections and consequent fatty liver disease in mice. J. Clin. Invest. 118: 3725-3737.
2. Pei, L., et al. 2011. Thyroid hormone receptor repression is linked to type I pneumocyte-associated respiratory distress syndrome. Nat. Med. 17: 1466-1472.
3. Stern, A.R., et al. 2012. Isolation and culture of primary osteocytes from the long bones of skeletally mature and aged mice. Biotechniques 52: 361-373.
4. Ryan, Z.C., et al. 2014. Enhanced prostacyclin formation and Wnt signaling in sclerostin deficient osteocytes and bone. Biochem. Biophys. Res. Commun. 448: 83-88.
5. Wei, C., et al. 2015. Osteocyte culture in microfluidic devices. Biomicrofluidics 9: 014109.
6. Pan, H., et al. 2017. BmpR1A is a major type 1 BMP receptor for BMP-Smad signaling during skull development. Dev. Biol. 429: 260-270.
7. Heni, H., et al. 2018. Involvement of osteocytes in the action of *Pasteurella multocida* toxin. Toxins 10: 328.
8. Stotter, B.R., et al. 2020. Cosmc-dependent mucin-type O-linked glycosylation is essential for podocyte function. Am. J. Physiol. Renal Physiol. 318: F518-F530.
9. Toda Nakamura, M., et al. 2021. Podoplanin is dispensable for mineralized tissue formation and maintenance in the Swiss outbred mouse background. Genesis 59: e23450.
10. Liu, H., et al. 2022. Osteocyte CIITA aggravates osteolytic bone lesions in myeloma. Nat. Commun. 13: 3684.

RESEARCH USE

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