

Mast Cell Protease 7 (CC40): sc-80533

BACKGROUND

Mast cells are connective tissue cells derived from blood-forming tissues that line arterial walls and secrete substances which mediate inflammatory and immune responses. Mast cell tryptases are major elements of mast cell granules with a variety of forms and functions. Mast cell proteases are a family of rodent protein homologs to human tryptases that are specifically expressed in mast cell secretory granules and may serve as highly specific markers in the analysis of mast cell heterogeneity, differentiation and function. Mast Cell Protease 7, also known as Tryptase α/β 1 or MMCP-7, is predominantly expressed in differentiated mast cells. It functions to degrade Fibrinogen at the endothelium/blood barrier and may be involved in regulating the formation of fibrin-platelet clots. The transcription of the gene encoding Mast Cell Protease 7 is regulated by Activin A, TGF β and Smad3.

REFERENCES

- McNeil, H.P., et al. 1993. Isolation, characterization, and transcription of the gene encoding mouse Mast Cell Protease 7. Proc. Natl. Acad. Sci. USA 89: 11174-11178.
- Ghildyal, N., et al. 1994. Lack of expression of the tryptase mouse Mast Cell Protease 7 in mast cells of the C57BL/6J mouse. J. Immunol. 153: 2624-2630.
- Matsumoto, R., et al. 1995. Packaging of proteases and proteoglycans in the granules of mast cells and other hematopoietic cells. A cluster of histidines on mouse Mast Cell Protease 7 regulates its binding to heparin Seryglycin proteoglycans. J. Biol. Chem. 270: 19524-19531.
- Huang, C., et al. 1998. The tryptase, mouse Mast Cell Protease 7, exhibits anticoagulant activity *in vivo* and *in vitro* due to its ability to degrade Fibrinogen in the presence of the diverse array of protease inhibitors in plasma. J. Biol. Chem. 272: 31885-31893.
- Ogihara, H., et al. 2001. Inhibitory effect of the transcription factor encoded by the mutant mi microphthalmia allele on transactivation of mouse Mast Cell Protease 7 gene. Blood 97: 645-651.
- Gu, Y., et al. 2002. Rac 2, a hematopoiesis-specific Rho GTPase, specifically regulates mast cell protease gene expression in bone marrow-derived mast cells. Mol. Cell. Biol. 22: 7645-7657.

CHROMOSOMAL LOCATION

Genetic locus: Tpsab1 (mouse) mapping to 17 A1.

SOURCE

Mast Cell Protease 7 (CC40) is a rat monoclonal antibody raised against full-length recombinant Mast Cell Protease 7 of mouse origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} in 1.0 ml PBS with < 0.1% sodium azide and protein stabilizer.

RESEARCH USE

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

APPLICATIONS

Mast Cell Protease 7 (CC40) is recommended for detection of Mast Cell Protease 7 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

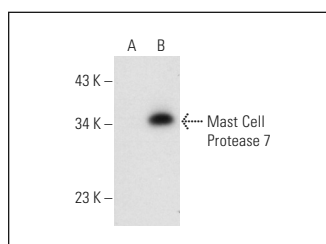
Suitable for use as control antibody for Mast Cell Protease 7 siRNA (m): sc-77420, Mast Cell Protease 7 shRNA Plasmid (m): sc-77420-SH and Mast Cell Protease 7 shRNA (m) Lentiviral Particles: sc-77420-V.

Molecular Weight of unglycosylated Mast Cell Protease 7: 27 kDa.

Molecular Weight of glycosylated Mast Cell Protease 7: 31-36 kDa.

Positive Controls: Mast Cell Protease 7 (m): 293T Lysate: sc-121523.

DATA



Mast Cell Protease 7 (CC40): sc-80533. Western blot analysis of Mast Cell Protease 7 expression in non-transfected: sc-117752 (A) and mouse Mast Cell Protease 7 transfected: sc-121523 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Gan, X., et al. 2012. Mast-cell-releasing tryptase triggers acute lung injury induced by small intestinal ischemia-reperfusion by activating PAR-2 in rats. Inflammation 35: 1144-1153.

STORAGE

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

PROTOCOLS

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