SANTA CRUZ BIOTECHNOLOGY, INC.

Mast Cell Chymase (CC1): sc-59586

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 Chymase, also known as CMA1 or MCT1, is a major secreted serine protease that is involved in vasoactive peptide generation, extracellular matrix degradation and regulation of gland secretion. The human chymase gene, which maps to human chromosome 14q12, encodes a preproenzyme with a 19 amino acid signal peptide, an acidic 2 amino acid propeptide and a 226 amino acid catalytic domain. Mast Cell Chymase is a chymotryptic serine proteinase which is a member of the peptidase family S1. Expressed in mast cells, Mast Cell Chymase is associated with the degradation of the extracellular matrix, the regulation of submucosal gland secretion, and the generation of vasoactive peptides. Mast cell proteases are a family of rodent protein homologs to human tryptases that are specifically expressed in mast cells and may serve as highly specific markers in the analysis of mast cell heterogeneity, differentiation and function. Mast Cell Protease 1, also designated Mcp-1 or Mcpt1, is a rodent specific β-chymase. The mouse and rat Mast Cell Protease 1 proteins share 76% sequence identity at the amino acid level.

REFERENCES

1. Huang, R.Y., et al. 1991. Cloning and structural analysis of MMCP-1, MMCP-4 and MMCP-5, three mouse mast cell-specific serine proteases. Eur. J. Immunol. 21: 1611-1621.
2. Caughey, G.H., et al. 1991. Structure, chromosomal assignment, and deduced amino acid sequence of a human gene for mast cell chymase. J. Biol. Chem. 266: 12956-12963.

CHROMOSOMAL LOCATION

Genetic locus: CMA1 (human) mapping to 14q12; Cma1 (mouse) mapping to 14 C3.

SOURCE

Mast Cell Chymase (CC1) is a mouse monoclonal antibody raised against purified skin chymase of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Mast Cell Chymase (CC1) is available conjugated to agarose (sc-59586 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-59586 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59586 PE), fluorescein (sc-59586 FITC), Alexa Fluor® 488 (sc-59586 AF488), Alexa Fluor® 546 (sc-59586 AF546), Alexa Fluor® 594 (sc-59586 AF594) or Alexa Fluor® 647 (sc-59586 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-59586 AF680) or Alexa Fluor® 790 (sc-59586 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

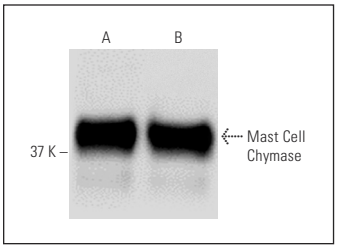
Mast Cell Chymase (CC1) is recommended for detection of Mast Cell Chymase distributed in skin, synovium, lung and heart of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Mast Cell Chymase (CC1) is also recommended for detection of Mast Cell Chymase distributed in skin, synovium, lung and heart in additional species, including porcine and canine.

Suitable for use as control antibody for Mast Cell Chymase siRNA (h): sc-43909, Mast Cell Chymase shRNA Plasmid (h): sc-43909-SH and Mast Cell Chymase shRNA (h) Lentiviral Particles: sc-43909-V.

Molecular Weight of Mast Cell Chymase: 30 kDa.

DATA



Mast Cell Chymase (CC1): sc-59586. Western blot analysis of Mast Cell Chymase expression in human skin chymase (**A**) and human recombinant chymase (**B**). Kindly provided by Dr. Xiaoying Zhou.

SELECT PRODUCT CITATIONS

1. Ahmad, A., et al. 2012. Administration of palmitoylethanolamide (PEA) protects the neurovascular unit and reduces secondary injury after traumatic brain injury in mice. Brain Behav. Immun. 26: 1310-1321.
2. Yeon, M., et al. 2019. CAGE-miR-140-5p-Wnt1 axis regulates autophagic flux, tumorigenic potential of mouse colon cancer cells and cellular interactions mediated by exosomes. Front. Oncol. 9: 1240.
3. McKenzie, B.A., et al. 2020. Activation of the executioner caspases-3 and -7 promotes microglial pyroptosis in models of multiple sclerosis. J. Neuroinflammation 17: 253.
4. Kim, K.W., et al. 2021. Regulation of osteoclastogenesis by mast cell in rheumatoid arthritis. Arthritis Res. Ther. 23: 124.
5. Jarosch, S., et al. 2022. ChipCytometry for multiplexed detection of protein and mRNA markers on human FFPE tissue samples. STAR Protoc. 3: 101374.

RESEARCH USE

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