

Mast Cell Tryptase (AA1): sc-59587

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, known as CMA1, 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 14q11.2, encodes a preproenzyme with a 19-amino acid signal peptide, an acidic 2-amino acid propeptide and a 226-amino acid catalytic domain. Tryptases comprise a family of trypsin-like serine proteases that are enzymatically active as heparin-stabilized tetramers. There are four functional genes for tryptase: α I, β I, β II and γ I, which map to human chromosome 16p13.3, with β tryptases representing the main isoenzymes expressed in mast cells. 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.

REFERENCES

- 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.
- 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: TPSAB1 (human) mapping to 16p13.3; Tpsb2 (mouse) mapping to 17 A3.3.

SOURCE

Mast Cell Tryptase (AA1) is a mouse monoclonal antibody raised against purified lung Tryptase of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Mast Cell Tryptase (AA1) is available conjugated to agarose (sc-59587 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-59587 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59587 PE), fluorescein (sc-59587 FITC), Alexa Fluor[®] 488 (sc-59587 AF488), Alexa Fluor[®] 546 (sc-59587 AF546), Alexa Fluor[®] 594 (sc-59587 AF594) or Alexa Fluor[®] 647 (sc-59587 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-59587 AF680) or Alexa Fluor[®] 790 (sc-59587 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Mast Cell Tryptase (AA1) is available conjugated to biotin (sc-59587 B), 200 μ g/ml, for WB, IHC(P) and ELISA.

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RESEARCH USE

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

APPLICATIONS

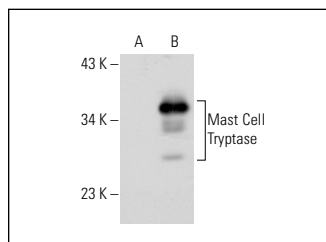
Mast Cell Tryptase (AA1) is recommended for detection of Mast Cell Tryptase distributed in skin, synovium, lung and heart of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], 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); non cross-reactive with any other cell type.

Mast Cell Tryptase (AA1) is also recommended for detection of Mast Cell Tryptase distributed in skin, synovium, lung and heart in additional species, including feline and canine.

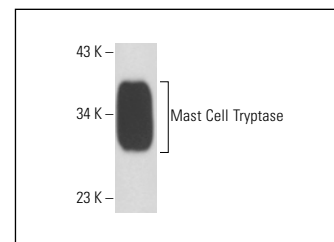
Suitable for use as control antibody for Mast Cell Tryptase siRNA (h): sc-43910, Mast Cell Tryptase siRNA (m): sc-44922, Mast Cell Tryptase shRNA Plasmid (h): sc-43910-SH, Mast Cell Tryptase shRNA Plasmid (m): sc-44922-SH, Mast Cell Tryptase shRNA (h) Lentiviral Particles: sc-43910-V and Mast Cell Tryptase shRNA (m) Lentiviral Particles: sc-44922-V.

Molecular Weight of Mast Cell Tryptase: 31-36 kDa.

DATA



Mast Cell Tryptase (AA1): sc-59587. Western blot analysis of Mast Cell Tryptase expression in non-transfected: sc-117752 (A) and human Mast Cell Tryptase transfected: sc-114673 (B) 293T whole cell lysates.



Mast Cell Tryptase (AA1): sc-59587. Western blot analysis of human recombinant Tryptase.

SELECT PRODUCT CITATIONS

- Ahmad, A., et al. 2013. Absence of TLR4 reduces neurovascular unit and secondary inflammatory process after traumatic brain injury in mice. *PLoS ONE* 8: e57208.
- Nesheim, N., et al. 2018. Elevated seminal plasma estradiol and epigenetic inactivation of ESR1 and ESR2 is associated with CP/CPPS. *Oncotarget* 9: 19623-19639.
- 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.
- Kotov, G., et al. 2020. Changes in the number of mast cells, expression of fibroblast growth factor-2 and extent of interstitial fibrosis in established and advanced hypertensive heart disease. *Ann. Anat.* 232: 151564.

STORAGE

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