SANTA CRUZ BIOTECHNOLOGY, INC.

Mast Cell Tryptase (V-13): sc-32473

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 pre-proenzyme 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: αI, βI, βII and γI, 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

1. 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.
2. 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.
3. Caughey, G.H., et al. 1993. The human mast cell chymase gene (CMA1): mapping to the cathepsin G/granzyme gene cluster and lineage-restricted expression. Genomics 15: 614-620.
4. Gurish, M.F., et al. 2001. The diverse roles of mast cells. J. Exp. Med. 194: 1-5.
5. Online Mendelian Inheritance in Man, OMIM™. 2001.Johns Hopkins University, Baltimore, MD. MIM Number: 118938. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. LocusLink Report. http://www.ncbi.nlm.nih.gov/LocusLink/ (LocusID: 7176).

CHROMOSOMAL LOCATION

Genetic locus: Tpsb2 (mouse) mapping to 17 A3.3.

SOURCE

Mast Cell Tryptase (V-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Mast Cell Tryptase of mouse origin.

STORAGE

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

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-32473 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Mast Cell Tryptase (V-13) is recommended for detection of Mast Cell Tryptase (also designated MMCP-6) of mouse and rat 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Matsumoto, Y., et al. 2009. Matrix metalloproteinase (MMP)-9, but not MMP-2, is involved in the development and progression of C protein-induced myocarditis and subsequent dilated cardiomyopathy. J. Immunol. 183: 4773-4781.
2. Ohtake-Niimi, S., et al. 2010. Mice deficient in N-acetylgalactosamine 4-sulfate 6-o-sulfotransferase are unable to synthesize chondroitin/dermatan sulfate containing N-acetylgalactosamine 4,6-bissulfate residues and exhibit decreased protease activity in bone marrow-derived mast cells. J. Biol. Chem. 285: 20793-20805.

PROTOCOLS

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