SANTA CRUZ BIOTECHNOLOGY, INC.

Mast Cell Protease 1 (C-15): sc-17041

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 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. 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.
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. and Austen, K.F. 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 (LocusID: 7176). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Mcpt1 (rat) mapping to 15p13.

SOURCE

Mast Cell Protease 1 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Mast Cell Protease 1 of rat origin.

STORAGE

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

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-17041 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Mast Cell Protease 1 (C-15) is recommended for detection of Mast Cell Protease 1 of 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).

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. Rodriguez, M.G., et al. 2006. Immunohistopathology of the contralateral testis of rats undergoing experimental torsion of the spermatic cord. Asian J. Androl. 8: 576-583.
2. Feng, B.S., et al. 2007. Mast cells play a crucial role in *Staphylococcus aureus* peptidoglycan-induced diarrhea. Am. J. Pathol. 171: 537-547.

RESEARCH USE

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

PROTOCOLS

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