

# Mast Cell Tryptase (3H2643): sc-71542

## 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-enzyme 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:  $\alpha$  I,  $\beta$  I,  $\beta$  II and  $\gamma$  I, which map to human chromosome 16p13.3, with  $\beta$  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., Blom, T. and Hellman, L. 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., Zerweck, E.H. and Vanderslice, P. 1991. Structure, chromosomal assignment and deduced amino acid sequence of a human gene for mast cell chymase. *J. Biol. Chem.* 266: 12956-12963.
- Caughey, G.H., Schaumberg, T.H., Zerweck, E.H., Butterfield, J.H., Hanson, R.D., Silverman, G.A. and Ley, T.J. 1993. The human mast cell chymase gene (CMA1): mapping to the cathepsin G/granzyme gene cluster and lineage-restricted expression. *Genomics* 15: 614-620.
- Gurish, M.F. and Austen, K.F. 2001. The diverse roles of mast cells. *J. Exp. Med.* 194: F1-F5.
- 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/>

## CHROMOSOMAL LOCATION

Genetic locus: TPSAB1 (human) mapping to 16p13.3.

## SOURCE

Mast Cell Tryptase (3H2643) is a mouse monoclonal antibody raised against human tryptase purified from lung mast cells.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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 Tryptase (3H2643) is recommended for detection of Mast Cell Tryptase (also designated MMCP-6) of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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

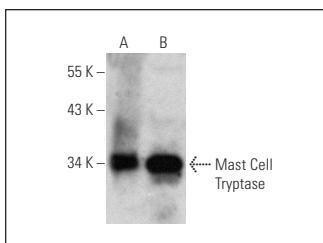
Molecular Weight of Mast Cell Tryptase: 31-36 kDa.

Positive Controls: U-937 cell lysate: sc-2239, TPSB2 (h): 293T Lysate: sc-116967 or A-673 cell lysate: sc-2414.

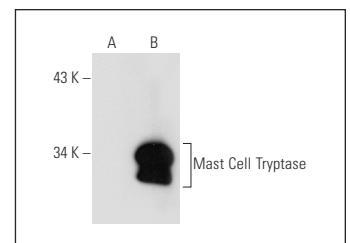
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



Mast Cell Tryptase (3H2643): sc-71542. Western blot analysis of Mast Cell Tryptase expression in U-937 (A) and A-673 (B) whole cell lysates.




Mast Cell Tryptase (3H2643): sc-71542. Western blot analysis of Mast Cell Tryptase expression in non-transfected: sc-117752 (A) and human Mast Cell Tryptase transfected: sc-116967 (B) 293T whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See **Mast Cell Tryptase (G3): sc-33676** for Mast Cell Tryptase antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.