

# Meprin A $\alpha$ (F-20): sc-23487

## BACKGROUND

Meprin is a member of the astacin family of zinc metalloendopeptidases that is highly expressed in kidney and intestinal brush border membranes as well as in leukocytes and some cancer cells. It consists of two subunits,  $\alpha$  and  $\beta$ , which form disulfide-bridged homo- and heterodimers that differ in oligomerization potentials and substrate specificity. Meprin  $\alpha$  forms heterogeneous multimers and is secreted, while Meprin  $\beta$  restricts the oligomerization potential of Meprin to tetramers and attaches Meprin oligomers to the plasma membrane. Its substrates include bioactive peptides and extracellular matrix proteins. The genes encoding human Meprin  $\alpha$  and  $\beta$  map to chromosomes 6p12.3 and 18q12.2-q12.3, respectively. Each Meprin subunit contains a zinc-binding protease domain located between Asn-63 to Leu-260 and a carboxy-terminal MAM (Meprin, A5 protein, receptor protein-tyrosine phosphatase  $\mu$ ) domain. The Meprin proteins have been implicated in cancer and intestinal inflammation.

## REFERENCES

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2. Bond, J.S., et al. 1995. The structural genes, MEP1A and MEP1B, for the  $\alpha$  and  $\beta$  subunits of the metalloendopeptidase Meprin map to human chromosomes 6p and 18q, respectively. *Genomics* 25: 300-303.
3. Tsukuba, T., et al. 2002. Chaperone interactions of the metalloproteinase Meprin A in the secretory or proteasomal-degradative pathway. *Arch. Biochem. Biophys.* 397: 191-198.
4. Bertenshaw, G.P., et al. 2002. Probing the active sites and mechanisms of rat metalloproteases Meprin A and B. *Biol. Chem.* 383: 1175-1183.
5. Bertenshaw, G.P., et al. 2003. Structure of homo- and hetero-oligomeric Meprin metalloproteases. Dimers, tetramers and high molecular mass multimers. *J. Biol. Chem.* 278: 2522-2532.
6. Leuenberger, B., et al. 2003. Human Meprin  $\beta$ : O-linked glycans in the intervening region of the type I membrane protein protect the C-terminal region from proteolytic cleavage and diminish its secretion. *Biochem. J.* 369: 659-665.
7. Norman, L.P., et al. 2003. Targeted disruption of the Meprin  $\beta$  gene in mice leads to underrepresentation of knockout mice and changes in renal gene expression profiles. *Mol. Cell. Biol.* 23: 1221-1230.

## CHROMOSOMAL LOCATION

Genetic locus: MEP1A (human) mapping to 6p12.3; Mep1a (mouse) mapping to 17 B3.

## SOURCE

Meprin A $\alpha$  (F-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Meprin A $\alpha$  of human 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  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23487 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Meprin A $\alpha$  (F-20) is recommended for detection of Meprin A $\alpha$  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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Meprin A $\alpha$  (F-20) is also recommended for detection of Meprin A $\alpha$  in additional species, including equine, canine, porcine and avian.

Suitable for use as control antibody for Meprin A $\alpha$  siRNA (h): sc-43925, Meprin A $\alpha$  shRNA Plasmid (h): sc-43925-SH and Meprin A $\alpha$  shRNA (h) Lentiviral Particles: sc-43925-V.

Molecular Weight of Meprin A $\alpha$ : 80 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.

## 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) or our catalog for detailed protocols and support products.