

# MAST205 (E-20): sc-55853

## BACKGROUND

Syntrophin is an adapter protein that functions to bind certain signaling molecules to the dystrophin-associated protein complex. This complex connects the extracellular matrix to the intracellular cytoskeleton for construction and maintenance of the postsynaptic structures in the neuromuscular junction and the central nervous system. Microtubule-associated serine/threonine-protein kinase 2 (MAST205) is a testis-specific, cytoplasmic protein that functions in a multi-protein complex in the maturation of spermatids. MAST205 is involved in linking the dystrophin/utrophin network with microtubule filaments via Syntrophin. By forming a complex with TRAF6, MAST205 regulates lipopolysaccharide-induced IL-12 synthesis in macrophages. This leads to the inhibition of TRAF6 NF $\kappa$ B activation. Two isoforms exist for MAST205 due to alternative splicing. Isoform 1 represents the full length protein, while isoform 2 lacks the residues 327-396 and 1091-1113. The N-terminus of MAST205 must be phosphorylated in order for ubiquitination to occur at the same site. This ubiquitination leads to the degradation of MAST205 via proteasome-mediated proteolysis.

## REFERENCES

1. Walden, P.D. and Cowan, N.J. 1994. A novel 205 kDa testis-specific serine/threonine protein kinase associated with microtubules of the spermatid manchette. *Mol. Cell. Biol.* 13: 7625-7635.
2. Walden, P.D. and Millette, C.F. 1997. Increased activity associated with the MAST205 protein kinase complex during mammalian spermiogenesis. *Biol. Reprod.* 55: 1039-1044.
3. Lumeng, C., et al. 1999. Interactions between  $\beta$  2-syntrophin and a family of microtubule-associated serine/threonine kinases. *Nat. Neurosci.* 2: 611-617.
4. Xiong, H., et al. 2004. Interaction of TRAF6 with MAST205 regulates NF $\kappa$ B activation and MAST205 stability. *J. Biol. Chem.* 279: 43675-43683.
5. Zhou, H., et al. 2004. Microtubule-associated serine/threonine kinase 205 kDa and Fc  $\gamma$  receptor control IL-12 p40 synthesis and NF $\kappa$ B activation. *J. Immunol.* 172: 2559-2568.
6. Valiente, M., et al. 2005. Binding of PTEN to specific PDZ domains contributes to PTEN protein stability and phosphorylation by microtubule-associated serine/threonine kinases. *J. Biol. Chem.* 280: 28936-28943.
7. Wang, D., et al. 2006. Co-expression of MAST205 inhibits the activity of Na<sup>+</sup>/H<sup>+</sup> exchanger NHE3. *Am. J. Physiol. Renal Physiol.* 290: F428-F437.

## CHROMOSOMAL LOCATION

Genetic locus: Mast2 (mouse) mapping to 4 D1.

## SOURCE

MAST205 (E-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MAST205 of mouse origin.

## RESEARCH USE

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

## 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-55853 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MAST205 (E-20) is recommended for detection of MAST205 of mouse and rat 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)], 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 MAST205 siRNA (m): sc-62603, MAST205 shRNA Plasmid (m): sc-62603-SH and MAST205 shRNA (m) Lentiviral Particles: sc-62603-V.

Molecular Weight of MAST205: 205 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## STORAGE

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

## PROTOCOLS

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



Try **MAST205 (A-7): sc-377198**, our highly recommended monoclonal alternative to MAST205 (E-20).