

ADAMTS-4 (Y-20): sc-16534

BACKGROUND

ADAMTS (a disintegrin and metalloprotease with thrombospondin motifs) protein family members contain an N-terminal propeptide domain, a metalloproteinase domain, a disintegrin-like domain, and a C-terminus that contains a varying number of thrombospondin type-1 (TSP-1) motifs. ADAMTS-4 (also known as aggrecanase-1) is an 837 amino acid, Zn-metalloprotease that mediates proteolytic degradation of aggrecan, a major component of cartilage. Aggrecan swells and hydrates the collagen fibril meshwork in cartilage, which confers compressibility and resilience. Degradation of aggrecan is a factor that contributes to erosion of articular cartilage in arthritic diseases. Traditional matrix metalloproteinases (MMPs) cleave aggrecan at Asn 341-Phe 342 whereas ADAMTS-4 cleaves at Glu 373-Ala 374. Inhibitors tailored to both MMPs and ADAMTSs may hinder the rate of cartilage degradation in arthritic individuals.

REFERENCES

1. Tang, B.L. and Hong, W. 1999. ADAMTS: a novel family of proteases with an ADAM protease domain and thrombospondin 1 repeats. *FEBS Lett.* 445: 223-225.
2. Tortorella, M.D., et al. 1999. Purification and cloning of aggrecanase-1: a member of the ADAMTS family of proteins. *Science* 284: 1664-1666.
3. Tortorella, M.D., et al. 2000. Sites of aggrecan cleavage by recombinant human aggrecanase-1 (ADAMTS-4). *J. Biol. Chem.* 275: 18566-18573.
4. Tortorella, M., et al. 2000. The Thrombospondin motif of aggrecanase-1 (ADAMTS-4) is critical for aggrecan substrate recognition and cleavage. *J. Biol. Chem.* 275: 25791-25797.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 603876. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: ADAMTS4 (human) mapping to 1q23.3; Adamts4 (mouse) mapping to 1 H3.

SOURCE

ADAMTS-4 (Y-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ADAMTS-4 of human origin.

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-16534 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

ADAMTS-4 (Y-20) is recommended for detection of ADAMTS-4 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).

ADAMTS-4 (Y-20) is also recommended for detection of ADAMTS-4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ADAMTS-4 siRNA (h): sc-41428, ADAMTS-4 siRNA (m): sc-41429, ADAMTS-4 shRNA Plasmid (h): sc-41428-SH, ADAMTS-4 shRNA Plasmid (m): sc-41429-SH, ADAMTS-4 shRNA (h) Lentiviral Particles: sc-41428-V and ADAMTS-4 shRNA (m) Lentiviral Particles: sc-41429-V.

Molecular Weight of ADAMTS-4: 90 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. Sugita, H., et al. 2004. Expression of matrix metalloproteinase, a disintegrin and metalloproteinase, and tissue inhibitor of metalloproteinase in human chondrosarcoma. *Acta Histochem. Cytochem.* 37: 319-323.
2. Sugita, H., et al. 2004. Correlation between the histological grade of chondrosarcoma and the expression of MMPs, ADAMTSs and TIMPs. *Anticancer Res.* 24: 4079-4084.
3. Lemarchant, S., et al. 2014. tPA promotes ADAMTS-4-induced CSPG degradation, thereby enhancing neuroplasticity following spinal cord injury. *Neurobiol. Dis.* 66: 28-42.

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.