

ADAMTS-4 (199F2U): sc-517638

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., Burn, T.C., Pratta, M.A., Abbaszade, I., Hollis, J. M., Liu, R., Rosenfeld, S.A., Copeland, R.A., Decicco, C.P., Wynn, R., Rockwell, A., Yang, F., 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., Pratta, M., Liu, R. Q., Austin, J., Ross, O. H., Abbaszade, I., Burn, T. and Arner, E. 2000. Sites of aggrecan cleavage by recombinant human aggrecanase-1 (ADAMTS-4). *J. Biol. Chem.* 275: 18566-18573.
4. Tortorella, M., Pratta, M., Liu, R. Q., Abbaszade, I., Ross, H., Burn, T. and Arner, E. 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.

SOURCE

ADAMTS-4 (199F2U) is a mouse monoclonal antibody raised against recombinant ADAMTS-4 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ 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

ADAMTS-4 (199F2U) is recommended for detection of ADAMTS-4 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

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

Molecular Weight of ADAMTS-4: 90 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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.

SELECT PRODUCT CITATIONS

1. Zhang, M., Mou, L., Liu, S., Sun, F. and Gong, M. 2021. Circ_0001103 alleviates IL-1β-induced chondrocyte cell injuries by upregulating SIRT1 via targeting miR-375. *Clin. Immunol.* 227: 108718.

RESEARCH USE

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

PROTOCOLS

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