SANTA CRUZ BIOTECHNOLOGY, INC.

ADAMTS-4 (H-74): sc-25582

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; Adamts4 (mouse) mapping to 1 H3.

SOURCE

ADAMTS-4 (H-74) is a rabbit polyclonal antibody raised against amino acids 764-837 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.

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 (H-74) 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), immunoprecipitation [1-2 µg per 100-500 µg 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).

ADAMTS-4 (H-74) 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 goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Filou, S., Stylianou, M., Triantaphyllidou, I.E., Papadas, T., Mastronikolis, N.S., Goumas, P.D., Papachristou, D.J., Ravazoula, P., Skandalis, S.S. and Vynios, D.H. 2013. Expression and distribution of aggrecanases in human larynx: ADAMTS-5/aggrecanase-2 is the main aggrecanase in laryngeal carcinoma. Biochimie 95: 725-734.

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.