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ProductInformation

Anti-ADAMTS-5, C-Terminal
Developed in Rabbit
Affinity Isolated Antibody

Product Number **A 6727**

Product Description

Anti-ADAMTS-5, C-Terminal is developed in rabbit using a synthetic peptide corresponding to the C-terminal of the human ADAMTS-5 as immunogen. Affinity isolated antigen specific antibody is obtained from rabbit anti-ADAMTS-5 antiserum by immuno-specific purification which removes essentially all rabbit serum proteins, including immunoglobulins, which do not specifically bind to the peptide.

Anti-ADAMTS-5, C-Terminal may be used for the detection and localization of human ADAMTS (A Disintegrin And Metalloproteinase with Thrombo-Spondin motif). By immunoblotting against the reduced protein, the antibody identifies the zymogen form at 120 kDa, activated form at 73 kDa (major band), and breakdown products at 50 kDa and 40 kDa in cell lysates.

ADAMTS-5, also known as implantin or aggrecanase-2, is a member of the larger family of ADAMs (A Disintegrin And Metalloproteinase) metalloproteinases containing thrombospondin (TS) repeats. ADAMTS-5 (A Disintegrin And Metalloproteinase with Thrombo-Spondin-5 motif was first described as ADAMTS-5, a protein elevated in mice during the peri-implantion period.[1] At the same time, another group identified aggrecanase-11,[2] a protein elevated in arthritic synovium. The name was later changed to ADAMTS-5. ADAMTS-5 is expressed in human and mouse. It has been found in heart, lung, cervix, uterus, ovary, brain, cartilage, and numerous other tissues, as well as chondroblastoma cell lines. Initial observations indicated a role for ADAMTS-5 in aggrecan cleavage and cartilage destruction, especially in arthritis, [3, 4, 5] and potentially a role in embryo implantion.

ADAMTS-5 contains the canonical HExxHxxxxxH zinc metalloproteinase motif, and has been shown to efficiently cleave aggrecan. In addition to the metallo-protease domain, ADAMTS-5 has a propeptide domain, a prohormone convertase (PC, furin) cleavage site, a cysteine-rich domain, a spacer domain, and two thrombospondin-1 like domains. ADAMTS-5 is inhibited by the endogenous MMP inhibitors (TIMP-1, 2, 3, and 4) but most efficiently by TIMP-3.[6] Unlike many of the ADAMs proteases, ADAMTS-5 does not have a transmembrane domain, and is a secreted protein. Full length ADAMTS-5 is a 930 amino acid protein with a predicted molecular mass is 101.7 kDa, but glycosylation and the abundance of cysteine residues gives ADAMTS-5 a greater apparent molecular weight on reduced SDS PAGE gels. When ADAMTS-5 is secreted, it is cleaved at the furin cleavage site (predicted molecular mass 73.2 kDa) and then further cleaved to generate a range of smaller forms.

Reagent

Anti-ADAMTS-5, C-Terminal is supplied in phosphate buffered saline (PBS) containing 50% glycerol and 0.05% sodium azide. The protein concentration is approximately 1 mg/ml.

Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to six months. For extended storage, the solution may be stored –20 °C. Do not store below –22 °C. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile

A minimum working antibody dilution of 1:1,000 is determined by immunoblotting a tissue cell lysate using an alkaline phosphatase conjugated secondary antibody and BCIP/NBT as the substrate. A starting antibody dilution of 1:5,000 is recommended for chemi-luminescent substrates

Note: Higher antibody dilutions may be necessary for non-human samples. EDTA/EGTA treatment of tissues or lysates is required to see latent zymogen.

In order to obtain the best results and assay sensitivity in various techniques and preparations, we recommend determining optimum working dilutions by titration.

References

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3. Tang, B.L., ADAMTS: a novel family of extracellular matrix proteases. Int. J. Biochem. Cell Biol., **33**, 33-44 (2001).
4. Tortorella, M.D., et al., The role of ADAM-TS4 (aggrecanase-1) and ADAM-TS5 (aggrecanase-2) in a model of cartilage degradation. Osteoarthritis Cartilage, **9**, 539-552 (2001).
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