

## Product Information

### Anti-ADAMTS-1, Propeptide Region

Developed in Rabbit  
Affinity Isolated Antibody

Product Number **A 4851**

#### Product Description

Anti-ADAMTS-1, Propeptide Region is developed in rabbit using a synthetic peptide corresponding to the propeptide domain of human ADAMTS-1 as immunogen. Affinity isolated antigen specific antibody is obtained from rabbit anti-ADAMTS-1 antiserum by immuno-specific purification which removes essentially all rabbit serum proteins, including immunoglobulins, which do not specifically bind to the peptide.

Anti-ADAMTS-1, Propeptide Region may be used for the detection and localization of human ADAMTS (A Disintegrin And Metalloproteinase with Thrombospondin-1 motif). Full length ADAMTS-1 (967 amino acids) has a predicted mass of 105.38 kDa, but glycosylation and the abundance of cysteine residues gives ADAMTS-1 a greater apparent molecular weight on reduced SDS-PAGE gels. By immunoblotting against the reduced protein in cell lysates, the antibody identifies the zymogen form at 110-120 kDa, but not the furin cleaved ADAMTS-1.

ADAMTS-1 is a metalloproteinase of the ADAM (A Disintegrin And Metalloproteinase) family containing disintegrin-like domains. ADAMTS-1, also known as METH-1, was first described as a protein elevated in invasive mouse tumors.<sup>1</sup> Initial findings indicated a role for ADAMTS-1 in tumor progression, since the protein was preferentially expressed in more invasive tumor cell lines. Induction of ADAMTS-1 by LPS (lipopolysaccharide) in mouse suggested the possibility that ADAMTS-1 could be involved in inflammation.<sup>2</sup> ADAMTS-1 was also identified in mouse heart and kidney, and the human ortholog, METH-1, was found in heart, kidney, adrenal gland, thymus, liver, and skeletal muscle. ADAMTS-1 is necessary for normal growth, fertility, and organ morphology and function.<sup>3</sup>

ADAMTS-1 is cleaved by furin or other prohormone convertases at one or both of the furin consensus sites in the amino portion of the molecule, producing the proteolytically active form. A second cleavage by a metalloproteinase is thought to yield a shed form of ADAMTS-1, releasing it from the ECM by cleavage between the first and second thrombospondin motifs. The proteolytically active ADAMTS-1 cleaves aggregan

and contains the canonical HexxHxxxxxH zinc metalloproteinase motif. In addition to the metalloprotease domain, it has a propeptide domain, a prohormone convertase (PC, furin) cleavage site, a cysteine-rich domain and three thrombospondin-1-like domains. ADAMTS-1, a secreted protein, does not have a transmembrane domain, unlike many of the ADAMs proteases. ADAMTS-1 is preferentially secreted in the ECM (extracellular matrix) where it binds via the thrombospondin motifs to the ECM. A knockout ADAMTS-1 mouse develops abnormally, with problems in organ development and fertility.<sup>3</sup>

#### Reagent

The antibody is supplied in phosphate buffered saline (PBS) containing 50% glycerol and 0.05% sodium azide. The protein concentration is ~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 with an alkaline phosphatase conjugated secondary antibody and BCIP/NBT as the substrate. A starting dilution of 1:5,000 of the antibody is recommended for chemiluminescent substrates.

Note: Higher antibody dilutions may be necessary for samples from more distantly related species. 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.

3. Shindo, T., et al., J. Clin. Invest., **105**, 1345-1352 (2000).

#### **References**

1. Kuno, K., et al., J. Biol. Chem., **272**, 556-562 (1997).
2. Kuno, K., and Matsushima, K., J. Biol. Chem. **273**, 13912-13917 (1998).

kaa 02/06

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.