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ProductInformation

Anti-ADAM-10, N-Terminal
Developed in Rabbit
Affinity Isolated Antibody

Product Number **A 3226**

Product Description

Anti-ADAM-10, N-Terminal is developed in rabbit using a synthetic peptide corresponding to the N-terminal of furin-cleaved human ADAM10 (A Disintegrin And Metalloproteinase-10) as immunogen. Affinity isolated antigen specific antibody is obtained from rabbit anti-ADAM-10 antiserum by immuno-specific purification which removes essentially all rabbit serum proteins, including immunoglobulins, which do not specifically bind to the peptide.

Anti-ADAM-10, N-Terminal may be used for the detection and localization of human ADAM10 and does not react with other ADAMs. The antibody recognizes the N-terminal of active ADAM10 and detects latent and active forms of the enzyme.

ADAM10, also known as Kuzbanian (Kuz), MADM (mammalian disintegrin metalloprotease), or myelin-associated metalloproteinase, is a member of the ADAM (a disintegrin and metalloprotease-like domain) family.[1, 2] ADAM10 was first described as a membrane-associated protease that degraded myelin basic protein in the brain. A *Drosophila* mutant named Kuzbanian (Kuz), with defects in Notch signaling of neuronal development, was also shown to be dependent on ADAM10. Its role in neurogenesis involves processing notch, notch ligand delta, and amyloid protein precursor at the alpha site).[3, 4] Other groups studying Alzheimer's disease identified ADAM10 as an α-secretase that cleaves amyloid plaque protein (APP), and other investigators showed that ADAM10 could act as a "sheddase", releasing TNF-α.[5] These disparate groups later identified ADAM10 as a member of the metalloproteinase family with disintegrin domain (ADAMs), and showed that ADAM10 also contains an EGF-like domain, transmembrane domain, and a cytoplasmic domain. Later works describe ADAM10 in the lung, heart, brain, kidney, and a wide range of tissues. ADAM10 is widely expressed in tissues and can be found on the cell surface and within the cell.[6]

ADAM10 contains the canonical HExxHxxxxxH zinc metalloproteinase motif, and has been shown to beproteolytically active. In bovine kidney, ADAM10 cleaves Type-IV collagen making ADAM10 a "gelatinase."[7] ADAM10 is efficiently inhibited by the endogenous MMP inhibitors TIMP-1 and TIMP-3, but not by TIMP-2 and TIMP-4.[8] ADAM10 is highly conserved with 97% amino acid identity between mouse, rat, bovine, and human. There is 45% identity between mouse and *Drosophila*. The predicted mass of the full length human ADAM10 (748 amino acids) is 84.1 kDa. Due to glycosylation and the cysteine-rich regions, the protein migrates at 98 kDa on reduced SDS-PAGE, and 58-60 kDa when processed by furin. A smaller 691 amino acid sequence for ADAM10, lacking the transmembrane domain, has been reported with a predicted molecular weight of 77.6 kDa.

Reagent

Anti-ADAM-10, N-Terminal is supplied in phosphate buffered saline 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 tissue or cell lysates 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 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

1. Pan, D., and Rubin, G.M., Cell, **90**, 271-280 (1997).
2. Rooke, J., et al., Science, **273**, 1227-1231 (1996).
3. Lammich, S., et al., Proc. Natl. Acad. Sci. USA, **96**, 3922-3927 (1999).
4. Dallas, D.J., Bone, **25**, 9-15 (1999).
5. Lunn, C.A., et al., FEBS Lett, **400**, 333-335 (1997).
6. Fahrenholz, F., et al., Ann. N.Y. Acad. Sci., **920**, 215-222 (2000).
7. Millichip, M. I. et al., Biochem. Biophys. Res. Comm., **245**, 594-598 (1998).
8. Amour, A., et al., FEBS Lett., **473**, 275-279 (2000).

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