

ADAM10 Antibody

Catalog # ASC10043

Specification

ADAM10 Antibody - Product Information

Application Primary Accession Other Accession Reactivity Host Clonality Isotype Calculated MW Application Notes WB, IF, ICC, E <u>O14672</u> NP_001101, 4557251 Human Rabbit Polyclonal IgG 85 kDa KDa ADAM10 can be used for detection of ADAM10 by Western blot at 1 - 2 μg/mL. This polyclonal antibody can also detect ADAM10 by immunohistochemistry at 2 μg/mL. For immunofluorescence start at 10 μg/mL.

ADAM10 Antibody - Additional Information

Gene ID 102 Other Names ADAM10 Antibody: RAK, kuz, AD10, AD18, MADM, CD156c, HsT18717, KUZ, Disintegrin and metalloproteinase domain-containing protein 10, CDw156, ADAM 10, ADAM metallopeptidase domain 10

Target/Specificity ADAM10;

Reconstitution & Storage

ADAM10 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions

ADAM10 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

ADAM10 Antibody - Protein Information

Name ADAM10 (HGNC:188)

Synonyms KUZ, MADM

Function

Transmembrane metalloprotease which mediates the ectodomain shedding of a myriad of transmembrane proteins, including adhesion proteins, growth factor precursors and cytokines

being essential for development and tissue homeostasis (PubMed: <a

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href="http://www.uniprot.org/citations/11786905" target=" blank">11786905</a>, PubMed:<a
href="http://www.uniprot.org/citations/12475894" target=" blank">12475894</a>, PubMed:<a
href="http://www.uniprot.org/citations/20592283" target="_blank">20592283</a>, PubMed:<a
href="http://www.uniprot.org/citations/24990881" target=" blank">24990881</a>, PubMed:<a
href="http://www.uniprot.org/citations/26686862" target=" blank">26686862</a>, PubMed:<a
href="http://www.uniprot.org/citations/28600292" target="_blank">28600292</a>, PubMed:<a
href="http://www.uniprot.org/citations/31792032" target=" blank">31792032</a>). Associates
with six members of the tetraspanin superfamily TspanC8 which regulate its exit from the
endoplasmic reticulum and its substrate selectivity (PubMed:<a
href="http://www.uniprot.org/citations/26686862" target=" blank">26686862</a>, PubMed:<a
href="http://www.uniprot.org/citations/28600292" target=" blank">28600292</a>, PubMed:<a
href="http://www.uniprot.org/citations/31792032" target=" blank">31792032</a>, PubMed:<a
href="http://www.uniprot.org/citations/34739841" target=" blank">34739841</a>, PubMed:<a
href="http://www.uniprot.org/citations/37516108" target="_blank">37516108</a>). Cleaves the
membrane-bound precursor of TNF-alpha at '76-Ala-|-Val-77' to its mature soluble form.
Responsible for the proteolytical release of soluble JAM3 from endothelial cells surface (PubMed:<a
href="http://www.uniprot.org/citations/20592283" target=" blank">20592283</a>). Responsible
for the proteolytic release of several other cell-surface proteins, including heparin-binding
epidermal growth-like factor, ephrin-A2, CD44, CDH2 and for constitutive and regulated alpha-
secretase cleavage of amyloid precursor protein (APP) (PubMed: <a
href="http://www.uniprot.org/citations/11786905" target=" blank">11786905</a>, PubMed:<a
href="http://www.uniprot.org/citations/26686862" target=" blank">26686862</a>, PubMed:<a
href="http://www.uniprot.org/citations/29224781" target=" blank">29224781</a>, PubMed:<a
href="http://www.uniprot.org/citations/34739841" target="_blank">34739841</a>). Contributes
to the normal cleavage of the cellular prion protein (PubMed: <a
href="http://www.uniprot.org/citations/11477090" target=" blank">11477090</a>). Involved in
the cleavage of the adhesion molecule L1 at the cell surface and in released membrane vesicles,
suggesting a vesicle-based protease activity (PubMed:<a
href="http://www.uniprot.org/citations/12475894" target=" blank">12475894</a>). Also controls
the proteolytic processing of Notch and mediates lateral inhibition during neurogenesis (By
similarity). Required for the development of type 1 transitional B cells into marginal zone B cells,
probably by cleaving Notch (By similarity). Responsible for the FasL ectodomain shedding and for
the generation of the remnant ADAM10-processed FasL (FasL APL) transmembrane form
(PubMed:<a href="http://www.uniprot.org/citations/17557115" target=" blank">17557115</a>).
Also cleaves the ectodomain of the integral membrane proteins CORIN and ITM2B (PubMed:<a
href="http://www.uniprot.org/citations/19114711" target=" blank">19114711</a>, PubMed:<a
href="http://www.uniprot.org/citations/21288900" target=" blank">21288900</a>). Mediates the
proteolytic cleavage of LAG3, leading to release the secreted form of LAG3 (By similarity).
Mediates the proteolytic cleavage of IL6R and IL11RA, leading to the release of secreted forms of
IL6R and IL11RA (PubMed: <a href="http://www.uniprot.org/citations/26876177"
target=" blank">26876177</a>). Enhances the cleavage of CHL1 by BACE1 (By similarity).
Cleaves NRCAM (By similarity). Cleaves TREM2, resulting in shedding of the TREM2 ectodomain
(PubMed:<a href="http://www.uniprot.org/citations/24990881" target=" blank">24990881</a>).
Involved in the development and maturation of glomerular and coronary vasculature (By
similarity). During development of the cochlear organ of Corti, promotes pillar cell separation by
forming a ternary complex with CADH1 and EPHA4 and cleaving CADH1 at adherens junctions (By
similarity). May regulate the EFNA5-EPHA3 signaling (PubMed: <a
href="http://www.uniprot.org/citations/16239146" target=" blank">16239146</a>). Regulates
leukocyte transmigration as a sheddase for the adherens junction protein VE- cadherin/CDH5 in
endothelial cells (PubMed:<a href="http://www.uniprot.org/citations/28600292"
target=" blank">28600292</a>).
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Cellular Location

Cell membrane; Single-pass type I membrane protein. Golgi apparatus membrane; Single-pass type I membrane protein. Cytoplasmic vesicle, clathrin-coated vesicle. Cell projection, axon {ECO:0000250|UniProtKB:O35598}. Cell projection, dendrite {ECO:0000250|UniProtKB:O35598}.



Cell junction, adherens junction. Cytoplasm Note=Is localized in the plasma membrane but is also expressed in the Golgi apparatus and in clathrin-coated vesicles derived likely from the Golgi (PubMed:12475894). During long term depression, it is recruited to the cell membrane by DLG1 (PubMed:23676497). The immature form is mainly located near cytoplasmic fibrillar structures, while the mature form is predominantly located at zonula adherens and the cell membrane (PubMed:30463011). The localization and clustering of mature ADAM10 to zonula adherens is regulated by AFDN, TSPAN33, PLEKHA7 and PDZD11 (PubMed:30463011).

Tissue Location

Expressed in the brain (at protein level) (PubMed:23676497). Expressed in spleen, lymph node, thymus, peripheral blood leukocyte, bone marrow, cartilage, chondrocytes and fetal liver (PubMed:11511685, PubMed:9016778).

ADAM10 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

ADAM10 Antibody - Images



Western blot analysis of ADAM10 in Jurkat whole cell lysate with ADAM10 antibody at (A) 1 and (B) 2 μ g/mL.





Immunocytochemistry staining of K562 cells using ADAM10 antibody at 2 μ g/mL.



Immunofluorescence of ADAM10 in K562 cells with ADAM10 antibody at 10 μ g/mL.

ADAM10 Antibody - Background

ADAM10 Antibody: Proinflammatory cytokine tumor necrosis factor-alpha (TNF- α) contributes to a variety of inflammatory responses and programmed cell death. Notch receptor and its ligand participate in cell fate decisions during vertebrate development and are associated with several human disorders, including a T-cell lymphoma. TNF- α , notch and its ligand delta are all membrane-bond molecules, which are cleaved by proteases to release mature proteins or functional receptor. ADAM10, a metalloprotease-disintegrin in the family of mammalian ADAM (for a disintegrin and metalloprotease), was recently identified to cleave TNF- α , notch and its ligand delta. The genes encoding human, mouse, and bovine ADAM10 were recently cloned and designated ADAM 10, kuzbanian (KUZ), and MADM, respectively. ADAM10 mRNA is expressed in a variety of human and bovine tissues.

ADAM10 Antibody - References

Rosendahl MS, Ko SC, Long DL, et al. Identification and characterization of a pro-tumor necrosis factor- α -processing enzyme from the ADAM family of zinc metalloproteases. J Biol Chem 1997;272:24588-93

Pan D, Rubin GM. Kuzbanian controls proteolytic processing of Notch and mediates lateral inhibition during Drosophila and vertebrate neurogenesis. Cell 1997;90:271-80

Qi H, Rand MD, Wu X, Sestan N, Wang W, Rakic P, Xu T, Artavanis-Tsakonas S. Processing of the notch ligand delta by the metalloprotease Kuzbanian. Science 1999;283:91-4

Howard L, Lu X, Mitchell S, Griffiths S, Glynn P. Molecular cloning of MADM: a catalytically active mammalian disintegrin-metalloprotease expressed in various cell types. Biochem J 1996;317:45-50. (RD1299)