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Anti-ADAM10 Antibody

Catalog # AP61040

Product Information

Application	WB, IHC, IF/IC
Primary Accession	O14672
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	84142

Additional Information

Gene ID	102
Other Names	KUZ; MADM; Disintegrin and metalloproteinase domain-containing protein 10; ADAM 10; CDw156; Kuzbanian protein homolog; Mammalian disintegrin-metalloprotease; CD156c
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human ADAM10. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IHC~~1:100~500 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

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:11786905, PubMed:12475894, PubMed:20592283, PubMed:24990881, PubMed:26686862, PubMed:28600292, PubMed:31792032, PubMed:31792032). Associates with six members of the tetraspanin superfamily TspanC8 which regulate its exit from the endoplasmic reticulum and its substrate selectivity (PubMed:26686862, PubMed:28600292, PubMed:31792032, PubMed:34739841, PubMed:37516108). Cleaves the membrane-bound precursor of TNF at '76-Ala-|-Val-77' to its mature soluble form. Responsible for the proteolytical release of soluble JAM3 from endothelial cells surface (PubMed:20592283). 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:11786905, PubMed:26686862, PubMed:29224781, PubMed:34739841, PubMed:33731436). Contributes to the normal cleavage of the cellular prion protein (PubMed:11477090). 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:12475894). 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:17557115). Also cleaves the ectodomain of the integral membrane proteins CORIN and ITM2B (PubMed:19114711, PubMed:21288900). 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:26876177). Enhances the cleavage of CHL1 by BACE1 (By similarity). Cleaves NRCAM (By similarity). Cleaves TREM2, resulting in shedding of the TREM2 ectodomain (PubMed:24990881). 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:16239146). Regulates leukocyte transmigration as a sheddase for the adherens junction protein VE-cadherin/CDH5 in endothelial cells (PubMed:28600292).

Cellular Location

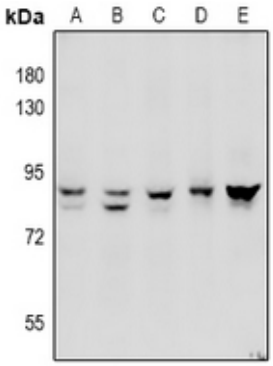
Cell membrane; Single-pass type I membrane protein. Golgi apparatus membrane; Single-pass type I membrane protein. Cytoplasmic vesicle, clathrin-coated vesicle. Cell projection, axon {ECO:0000250|UniProtKB:O35598}. Cell projection, dendrite {ECO:0000250|UniProtKB:O35598}. Cell junction, adherens junction.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

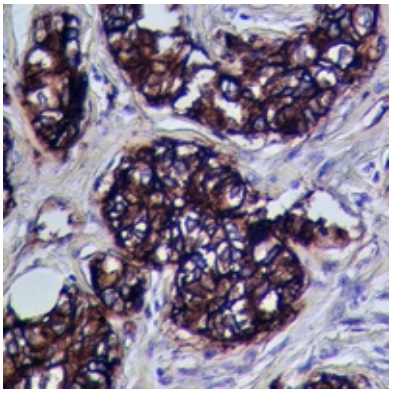
Tissue Location

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).

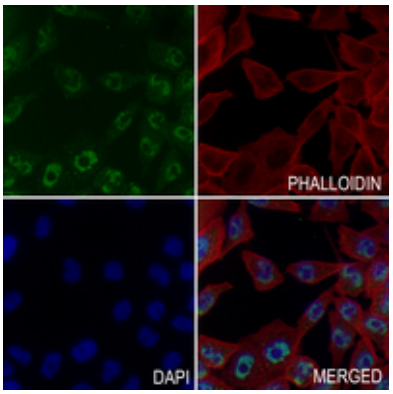
Images

Western blot analysis of ADAM10 expression in HepG2 (A), U87MG (B), A549 (C), SP20 (D), PC12 (E) whole cell lysates. (Predicted band size: 84 kD; Observed band size: 85 kD)





Immunohistochemical analysis of ADAM10 staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of ADAM10 staining in MCF7 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

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