SANTA CRUZ BIOTECHNOLOGY, INC.

ADAM12 (1G3): sc-293225

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The Power to Question

BACKGROUND

ADAM (a disintegrin and metalloprotease) proteins are a family of over 30 membrane-anchored, glycosylated, Zn^{2+} dependent proteases that are involved in cell-cell, cell-matrix interface related processes including fertilization, muscle fusion, secretion of TNFα (tumor necrosis factor α), and modulation of the neurogenic function of Notch and Delta. ADAM proteins possess a signal-domain, a pro-domain, a metalloprotease domain, a disintegrin domain (integrin ligand), a cysteine-rich region, an epidermal growth factor-like domain, a transmembrane domain and a cytoplasmic tail. ADAMs are expressed in brain, testis, epididymis, ovary, breast, placenta, liver, heart, lung, bone, and muscle, and catalyze proteolysis, adhesion, fusion, and intracellular signaling. ADAM12 (Meltrin-α) is produced as two differentially spliced isoforms, a 718 amino acid secreted form (ADAM12S) and a 881 amino acid membrane-bound form (ADAM12L), and is involved in egg-sperm fusion.

REFERENCES

1. Wolfsberg, T.G., et al. 1995. ADAM, a novel family of membrane proteins containing a disintegrin and metalloprotease domain: multipotential functions in cell-cell and cell-matrix interactions. J. Cell Biol. 131: 275-278.
2. Yagami-Hiromasa, T., et al. 1995. A metalloprotease-disintegrin participating in myoblast fusion. Nature 377: 652-656.
3. Gilpin, B.J., et al. 1998. A novel, secreted form of human ADAM12 (Meltrin α) provokes myogenesis *in vivo*. J. Biol. Chem. 273: 157-166.
4. Stone, A.L., et al. 1999. Structure-function analysis of the ADAM family of disintegrin-like and metalloproteinase-containing proteins (review). J. Protein Chem. 18: 447-465.
5. Primakoff, P. and Myles, D.G. 2000. The ADAM gene family: surface proteins with adhesion and protease activity. Trends Genet. 16: 83-87.
6. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 602714. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: ADAM12 (human) mapping to 10q26.2; Adam12 (mouse) mapping to 7 F3.

SOURCE

ADAM12 (1G3) is a mouse monoclonal antibody raised against amino acids 208-304 of ADAM12 of human origin.

PRODUCT

Each vial contains 100 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

ADAM12 (1G3) is recommended for detection of ADAM12 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ADAM12 siRNA (h): sc-41414, ADAM12 siRNA (m): sc-41415, ADAM12 shRNA Plasmid (h): sc-41414-SH, ADAM12 shRNA Plasmid (m): sc-41415-SH, ADAM12 shRNA (h) Lentiviral Particles: sc-41414-V and ADAM12 shRNA (m) Lentiviral Particles: sc-41415-V.

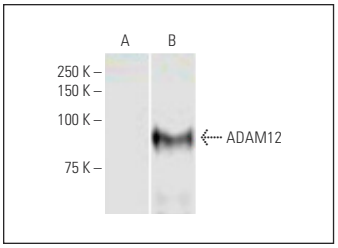
Molecular Weight of ADAM12: 105 kDa.

Positive Controls: ADAM12 transfected 293T whole cell lysate.

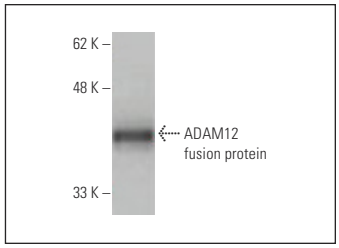
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



ADAM12 (1G3): sc-293225. Western blot analysis of ADAM12 expression in non-transfected (**A**) and ADAM12 transfected (**B**) 293T whole cell lysates.



ADAM12 (1G3): sc-293225. Western blot analysis of human recombinant ADAM12 fusion protein.

SELECT PRODUCT CITATIONS

1. Deng, C.C., et al. 2021. Single-cell RNA-seq reveals fibroblast heterogeneity and increased mesenchymal fibroblasts in human fibrotic skin diseases. Nat. Commun. 12: 3709.
2. Lin, Q., et al. 2021. Multi-organ metastasis as destination for breast cancer cells guided by biomechanical architecture. Am. J. Cancer Res. 11: 2537-2567.
3. Mun, S., et al. 2022. Transcriptome profile of membrane and extracellular matrix components in ligament-fibroblastic progenitors and cementoblasts differentiated from human periodontal ligament cells. Genes 13: 659.

RESEARCH USE

For research use only, not for use in diagnostic procedures.