

ADAM23 (I-19): sc-67410

BACKGROUND

ADAMs (a disintegrin and metalloproteinase domain), also known as MDCs (metalloproteinase, disintegrin and cysteine-rich domain) or cellular disintegrins, are a family of proteins that are expressed in numerous different tissues. They catalyze proteolysis, adhesion, fusion and intracellular signaling. ADAMs are membrane-anchored proteins and there are over 30 different members in the family with many diverse functions. ADAM23 is exclusively expressed in fetal and adult brains and may function as an integrin ligand in cells of neural origin. Adhesion of neuroblastoma and astrocytoma cells is promoted by the disintegrin-like domain of ADAM23 and is mediated by an interaction of this protein with $\alpha V/\beta 3$. A short amino acid sequence in the disintegrin loop of ADAM23 interacts with $\alpha V/\beta 3$ to mediate cell interactions that take place during both normal and pathological processes. The three characteristic histidine residues and the glutamic acid residue typical of metalloproteinases are lacking in the metalloproteinase-like domain of ADAM23. This suggests that ADAM23 may not be involved in protease-mediated events, but could exclusively serve in cell adhesion processes. In addition, evidence suggests that ADAM23 may be a tumor suppressor gene.

REFERENCES

1. Sagane, K., et al. 1998. Metalloproteinase-like, disintegrin-like, cysteine-rich proteins MDC2 and MDC3: novel human cellular disintegrins highly expressed in the brain. *Biochem. J.* 334: 93-98.
2. Sagane, K., et al. 1999. Cloning and chromosomal mapping of mouse ADAM11, ADAM22 and ADAM23. *Gene* 236: 79-86.
3. Cal, S., et al. 2000. ADAM 23/MDC3, a human disintegrin that promotes cell adhesion via interaction with the $\alpha V/\beta 3$ Integrin through an RGD-independent mechanism. *Mol. Biol. Cell* 11: 1457-1469.
4. Goldsmith, A.P., et al. 2004. ADAM23 is a cell-surface glycoprotein expressed by central nervous system neurons. *J. Neurosci. Res.* 78: 647-658.
5. Costa, F.F., et al. 2005. ADAM23 methylation and expression analysis in brain tumors. *Neurosci. Lett.* 380: 260-264.
6. Takada, H., et al. 2005. ADAM23, a possible tumor suppressor gene, is frequently silenced in gastric cancers by homozygous deletion or aberrant promoter hypermethylation. *Oncogene* 24: 8051-8060.
7. Calmon, M.F., et al. 2007. Methylation profile of genes CDKN2A (p14 and p16), DAPK1, CDH1 and ADAM23 in head and neck cancer. *Cancer Genet. Cytogenet.* 173: 31-37.
8. Sun, Y., et al. 2007. ADAM23 plays multiple roles in neuronal differentiation of P19 embryonal carcinoma cells. *Neurochem. Res.* 32: 1217-1223.

CHROMOSOMAL LOCATION

Genetic locus: ADAM23 (human) mapping to 2q33.3; Adam23 (mouse) mapping to 1 C2.

SOURCE

ADAM23 (I-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ADAM23 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-67410 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ADAM23 (I-19) is recommended for detection of ADAM23 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ADAM23 (I-19) is also recommended for detection of ADAM23 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ADAM23 siRNA (h): sc-61938, ADAM23 siRNA (m): sc-61939, ADAM23 shRNA Plasmid (h): sc-61938-SH, ADAM23 shRNA Plasmid (m): sc-61939-SH, ADAM23 shRNA (h) Lentiviral Particles: sc-61938-V and ADAM23 shRNA (m) Lentiviral Particles: sc-61939-V.

Molecular Weight of ADAM23: 92 kDa.

Positive Controls: Mouse brain extract: sc-2253 or rat brain extract: sc-2392.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.