SANTA CRUZ BIOTECHNOLOGY, INC.

AdoMetDC (H-9): sc-390073

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Polyamines are compounds that have two or more primary amino groups and are important to cellular processes, such as cellular growth, proliferation and tumor promotion. AdoMetDC (adenosylmethionine decarboxylase 1), also known as S-adenosylmethionine decarboxylase proenzyme (SAMDC) or AMD1, is a 334 amino acid protein which is an important intermediate enzyme in polyamine biosynthesis pathways. Using a pyruvoyl group as a cofactor, AdoMetDC catalyzes the conversion of S-adenosyl-L-methionine to (5-deoxy-5-adenosyl)(3-aminopropyl)-methylsulfonium salt and carbon dioxide. AdoMetDC is synthesized as an inactive proenzyme that undergoes self-maturation to form two non-identical subunits designated α and β. Active AdoMetDC forms a heterotetramer of two α chains and two β chains. Both AdoMetDC proenzyme processing and mature AdoMetDC catalytic activity are stimulated by putrescine, while catalytic activity is inhibited by iodoacetic acid.

REFERENCES

1. Ekstrom, J.L., et al. 2001. Structure of a human S-adenosylmethionine decarboxylase self-processing ester intermediate and mechanism of putrescine stimulation of processing as revealed by the H243A mutant. Biochemistry 40: 9495-9504.
2. Tolbert, W.D., et al. 2003. Mechanism of human S-adenosylmethionine decarboxylase proenzyme processing as revealed by the structure of the S68A mutant. Biochemistry 42: 2386-2395.
3. Yerlikaya, A. and Stanley, B.A. 2004. S-adenosylmethionine decarboxylase degradation by the 26S Proteasome is accelerated by substrate-mediated transamination. J. Biol. Chem. 279: 12469-12478.
4. Lam, K., et al. 2005. HSG cells differentiated by culture on extracellular matrix involves induction of S-adenosylmethione decarboxylase and ornithine decarboxylase. J. Cell. Physiol. 203: 353-361.
5. Kim, J.S., et al. 2006. S-Adenosylmethionine decarboxylase partially regulates cell growth of HL-60 cells by controlling the intracellular ROS level: early senescence and sensitization to gamma-radiation. Arch. Biochem. Biophys. 456: 58-70.

CHROMOSOMAL LOCATION

Genetic locus: AMD1 (human) mapping to 6q21; Amd1 (mouse) mapping to 10 B1.

SOURCE

AdoMetDC (H-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1-21 at the N-terminus of AdoMetDC of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-390073 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

AdoMetDC (H-9) is recommended for detection of AdoMetDC of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AdoMetDC (H-9) is also recommended for detection of AdoMetDC in additional species, including canine, bovine and porcine.

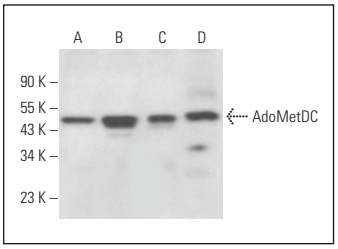
Suitable for use as control antibody for AdoMetDC siRNA (h): sc-95296, AdoMetDC siRNA (m): sc-140886, AdoMetDC shRNA Plasmid (h): sc-95296-SH, AdoMetDC shRNA Plasmid (m): sc-140886-SH, AdoMetDC shRNA (h) Lentiviral Particles: sc-95296-V and AdoMetDC shRNA (m) Lentiviral Particles: sc-140886-V.

Molecular Weight of AdoMetDC proenzyme: 42 kDa.

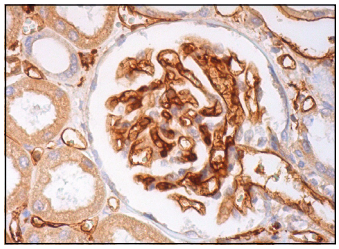
Molecular Weight of AdoMetDC α/β: 32/10 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, c4 whole cell lysate: sc-364186 or rat brain extract: sc-2392.

DATA



AdoMetDC (H-9): sc-390073. Western blot analysis of AdoMetDC expression in NIH/3T3 (**A**), c4 (**B**) and U-87 MG (**C**) whole cell lysates and rat brain tissue extract (**D**).



AdoMetDC (H-9): sc-390073. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and membrane staining of cells in glomeruli and interstitial cells and cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Lim, H.K., et al. 2018. Polyamine regulator AMD1 promotes cell migration in epidermal wound healing. J. Invest. Dermatol. 138: 2653-2665.

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 for detailed protocols and support products.