SANTA CRUZ BIOTECHNOLOGY, INC.

ASS1 (C-4): sc-514726

BACKGROUND

ASS1, also known as argininosuccinate synthase or citrulline-aspartate ligase, belongs to the argininosuccinate synthase family. ASS1 is an urea cycle enzyme with a tetrameric structure composed of identical subunits. It is important to the urea cycle as it catalyzes the important second last step in the arginine biosynthetic pathway. A deficiency of ASS1 causes citrullinemia (CTLN1), an autosomal recessive disease which is characterized by severe vomiting spells and mental retardation.

REFERENCES

1. Bock, H.G., et al. 1983. Sequence for human argininosuccinate synthetase cDNA. Nucleic Acids Res. 11: 6505-6512.
2. Freytag, S.O., et al. 1984. Molecular structures of human argininosuccinate synthetase pseudogenes. Evolutionary and mechanistic implications. J. Biol. Chem. 259: 3160-3166.
3. Isashiki, Y., et al. 1989. Identification of essential arginine residue(s) for Mg-ATP binding of human argininosuccinate synthetase. Protein Seq. Data Anal. 2: 283-287.
4. Haberle, J., et al. 2002. Structure of the human argininosuccinate synthetase gene and an improved system for molecular diagnostics in patients with classical and mild citrullinemia. Hum. Genet. 110: 327-333.
5. Bansal, V., et al. 2004. Citrulline can preserve proliferation and prevent the loss of CD3-ζ chain under conditions of low arginine. JPEN J. Parenter. Enteral Nutr. 28: 423-430.
6. Hao, G., et al. 2004. Argininosuccinate synthetase is reversibly inactivated by S-nitrosylation *in vitro* and *in vivo*. J. Biol. Chem. 279: 36192-36200.
7. Ito, S., et al. 2004. A pregnant patient with fulminant hepatic failure was found to carry a novel missense mutation in the argininosuccinate synthetase gene. J. Gastroenterol. 39: 1115-1117.
8. Lighthall, G.K., et al. 2004. Identification of salt-sensitive genes in the kidneys of Dahl rats. J. Hypertens. 22: 1487-1494.
9. Potter, M.A., et al. 2004. Pregnancy in a healthy woman with untreated citrullinemia. Am. J. Med. Genet. A 129A: 77-82.

CHROMOSOMAL LOCATION

Genetic locus: ASS1 (human) mapping to 9q34.11; Ass1 (mouse) mapping to 2 B.

SOURCE

ASS1 (C-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 373-400 at the C-terminus of ASS1 of human origin.

PRODUCT

Each vial contains 200 µg IgM 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-514726 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ASS1 (C-4) is recommended for detection of ASS1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ASS1 siRNA (h): sc-45810, ASS1 siRNA (m): sc-45811, ASS1 shRNA Plasmid (h): sc-45810-SH, ASS1 shRNA Plasmid (m): sc-45811-SH, ASS1 shRNA (h) Lentiviral Particles: sc-45810-V and ASS1 shRNA (m) Lentiviral Particles: sc-45811-V.

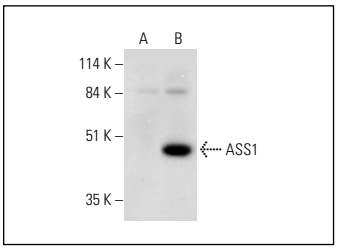
Molecular Weight of ASS1: 47 kDa.

Positive Controls: ASS1 (m): 293T Lysate: sc-126455 or IB4 whole cell lysate: sc-364780.

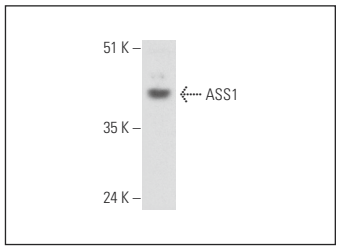
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ASS1 (C-4): sc-514726. Western blot analysis of ASS1 expression in non-transfected: sc-117752 (**A**) and mouse ASS1 transfected: sc-126455 (**B**) 293T whole cell lysates.



ASS1 (C-4): sc-514726. Western blot analysis of ASS1 expression in IB4 whole cell lysate.

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.