SANTA CRUZ BIOTECHNOLOGY, INC.

ASS1 (E-12): sc-365475

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

ASS1 (E-12) is a mouse monoclonal antibody raised against amino acids 1-231 mapping at the N-terminus of ASS1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ASS1 (E-12) is available conjugated to agarose (sc-365475 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365475 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365475 PE), fluorescein (sc-365475 FITC), Alexa Fluor® 488 (sc-365475 AF488), Alexa Fluor® 546 (sc-365475 AF546), Alexa Fluor® 594 (sc-365475 AF594) or Alexa Fluor® 647 (sc-365475 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365475 AF680) or Alexa Fluor® 790 (sc-365475 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ASS1 (E-12) 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, HeLa whole cell lysate: sc-2200 or ME-180 whole cell lysate.

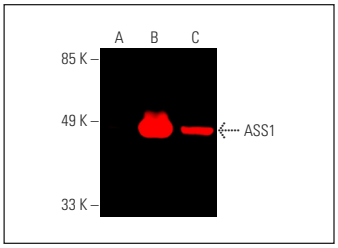
STORAGE

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

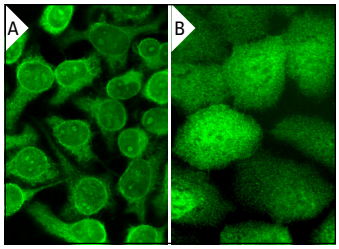
RESEARCH USE

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

DATA



ASS1 (E-12): sc-365475. Near-Infrared western blot analysis of ASS1 expression in non-transfected 293T: sc-117752 (**A**), mouse ASS1 transfected 293T: sc-126455 (**B**) and ME-180 (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.



ASS1 (E-12): sc-365475. Immunofluorescence staining of methanol-fixed HeLa (**A**) and A-431 (**B**) cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Amara, S., et al. 2017. Critical role of SIK3 in mediating high salt and IL-17 synergy leading to breast cancer cell proliferation. PLoS ONE 12: e0180097.
2. Kim, S.S., et al. 2020. Histone deacetylase inhibition is synthetically lethal with arginine deprivation in pancreatic cancers with low argininosuccinate synthetase 1 expression. Theranostics 10: 829-840.
3. Wang, S., et al. 2020. Single cell transcriptomics of human epidermis identifies basal stem cell transition states. Nat. Commun. 11: 4239.
4. Hayashi, D., et al. 2021. Valproic acid up-regulates the whole NO-citrulline cycle for potent iNOS-NO signaling to promote neuronal differentiation of adipose tissue-derived stem cells. Nitric Oxide 106: 35-44.
5. Li, L., et al. 2021. PGC1α is required for the renoprotective effect of lncRNA Tug1 *in vivo* and links Tug1 with urea cycle metabolites. Cell Rep. 36: 109510.
6. Tian, J., et al. 2022. Pregnane X receptor promotes liver enlargement in mice through the spatial induction of hepatocyte hypertrophy and proliferation. Chem. Biol. Interact. 367: 110133.
7. Karkoutly, S., et al. 2024. FoxO transcription factors regulate urea cycle through ASS1. Biochem. Biophys. Res. Commun. 739: 150594.
8. Wang, Z., et al. 2024. Molecular subtypes of neuroendocrine carcinomas: a cross-tissue classification framework based on five transcriptional regulators. Cancer Cell 42: 1106-1125.e8.

PROTOCOLS

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