SANTA CRUZ BIOTECHNOLOGY, INC.

ALAS-H (C-6): sc-137094



BACKGROUND

5-aminolevulinate synthase 1 (ALAS-H) and 2 (ALAS-E) are two isoforms of ALAS, an enzyme catalyzing the first step of the heme biosynthetic pathway in mammals. The erythroid-specific isoenzyme, ALAS-E, regulates the first step of hematopoietic cell differentation and iron metabolism in the liver. ALAS-H is a housekeeping protein which mediates synthesis of early heme in the mitochondria of most cells. Succinyl CoA associates with ALAS-E in protein conformation change and translocation of ALAS-E into the mitochondria and does not interact with ALAS-H. The ALAS-E 5'-flanking region contains binding sites for nuclear activators such as GATA-1, NF-E2 and EKLF. Since the ALAS gene maps to the X chromosome, mutation of the gene leads to the pyridoxine-refractory X-linked sideroblastic anemia.

REFERENCES

- Conboy, J.G., et al. 1992. Human erythroid 5-aminolevulinate synthase. Gene structure and species-specific differences in alternative RNA splicing. J. Biol. Chem. 267: 18753-18758.
- Furuyama, K., et al. 2000. Interaction between succinyl CoA synthetase and the heme-biosynthetic enzyme ALAS-E is disrupted in sideroblastic anemia. J. Clin. Invest. 105: 757-764.

CHROMOSOMAL LOCATION

Genetic locus: ALAS1 (human) mapping to 3p21.2; Alas1 (mouse) mapping to 9 F1.

SOURCE

ALAS-H (C-6) is a mouse monoclonal antibody raised against amino acids 57-210 mapping near the N-terminus of ALAS-H of mouse origin.

PRODUCT

Each vial contains 200 $\mu g\, lg G_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ALAS-H (C-6) is recommended for detection of precursor and mature ALAS-H 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).

Suitable for use as control antibody for ALAS-H siRNA (h): sc-44728, ALAS-H siRNA (m): sc-44729, ALAS-H shRNA Plasmid (h): sc-44728-SH, ALAS-H shRNA Plasmid (m): sc-44729-SH, ALAS-H shRNA (h) Lentiviral Particles: sc-44728-V and ALAS-H shRNA (m) Lentiviral Particles: sc-44729-V.

Molecular Weight of ALAS-H precursor: 71 kDa.

Molecular Weight of mature ALAS-H: 65 kDa.

Positive Controls: JAR cell lysate: sc-2276, K-562 whole cell lysate: sc-2203 or ALAS-H (m): 293T Lysate: sc-118326.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM 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). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA





of formalin-fixed Hep G2 cells showing cytoplasmic

localization (A). Immunoperoxidase staining of formalin fixed. paraffin-embedded human small intestine tissue

showing cytoplasmic staining of glandular cells (B).

ALAS-H (C-6): sc-137094. Western blot analysis of ALAS-H expression in non-transfected: sc-117752 (A) and mouse ALAS-H transfected: sc-118326 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

 Bakthavatsalam, D., et al. 2014. Chaperonin-containing TCP-1 complex directly binds to the cytoplasmic domain of the LOX-1 receptor. FEBS Lett. 588: 2133-2140.

STORAGE

Store at 4° C, **D0 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.