

ALAS-H (F-5): sc-137093

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 differentiation 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.

CHROMOSOMAL LOCATION

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

SOURCE

ALAS-H (F-5) 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 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ALAS-H (F-5) is available conjugated to agarose (sc-137093 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137093 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137093 PE), fluorescein (sc-137093 FITC), Alexa Fluor® 488 (sc-137093 AF488), Alexa Fluor® 546 (sc-137093 AF546), Alexa Fluor® 594 (sc-137093 AF594) or Alexa Fluor® 647 (sc-137093 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137093 AF680) or Alexa Fluor® 790 (sc-137093 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

ALAS-H (F-5) 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) 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.

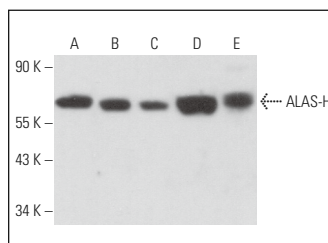
Molecular Weight of mature ALAS-H: 65 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, NIH/3T3 whole cell lysate: sc-2210 or K-562 whole cell lysate: sc-2203.

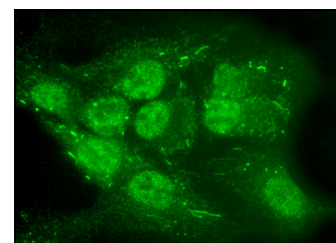
RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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



ALAS-H (F-5): sc-137093. Western blot analysis of ALAS-H expression in HEL 92.1.7 (A), K-562 (B), JAR (C), Raji (D) and NIH/3T3 (E) whole cell lysates.



ALAS-H (F-5): sc-137093. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Fiorito, V., et al. 2021. The heme synthesis-export system regulates the tricarboxylic acid cycle flux and oxidative phosphorylation. *Cell Rep.* 35: 109252.
2. Allocco, A.L., et al. 2022. Inhibition of heme export and/or heme synthesis potentiates metformin anti-proliferative effect on cancer cell lines. *Cancers* 14: 1230.
3. Novakova, Z., et al. 2022. Generation and characterization of human U-2 OS cell lines with the CRISPR/Cas9-edited protoporphyrinogen oxidase IX gene. *Sci. Rep.* 12: 17081.

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.