SANTA CRUZ BIOTECHNOLOGY, INC.

ALAS-E (D-4): sc-166739

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. 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.
2. Kramer, M.F., et al. 2000. Transcriptional regu-lation of the murine erythroid-specific 5-aminolevulinate synthase gene. Gene 247: 153-166.
3. Furuyama, K. and Sassa, S. 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: ALAS2 (human) mapping to Xp11.21; Alas2 (mouse) mapping to X F3.

SOURCE

ALAS-E (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 55-90 near the N-terminus of ALAS-E 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.

PDZ-RhoGEF (D-9) is available conjugated to agarose (sc-166740 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166740 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166740 PE), fluorescein (sc-166740 FITC), Alexa Fluor® 488 (sc-166740 AF488), Alexa Fluor® 546 (sc-166740 AF546), Alexa Fluor® 594 (sc-166740 AF594) or Alexa Fluor® 647 (sc-166740 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166740 AF680) or Alexa Fluor® 790 (sc-166740 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166739 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

ALAS-E (D-4) is recommended for detection of precursor and mature ALAS-E 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).

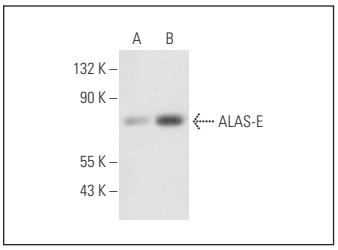
Suitable for use as control antibody for ALAS-E siRNA (h): sc-44726, ALAS-E siRNA (m): sc-44727, ALAS-E shRNA Plasmid (h): sc-44726-SH, ALAS-E shRNA Plasmid (m): sc-44727-SH, ALAS-E shRNA (h) Lentiviral Particles: sc-44726-V and ALAS-E shRNA (m) Lentiviral Particles: sc-44727-V.

Molecular Weight of ALAS-E precursor: 65 kDa.

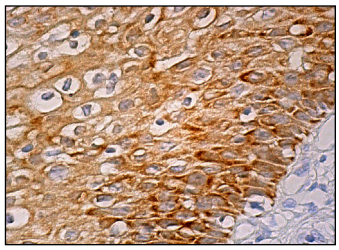
Molecular Weight of mature ALAS-E: 60 kDa.

Positive Controls: mouse heart extract: sc-2254, ALAS-E (h): 293T Lysate: sc-114245 or RAW 264.7 whole cell lysate: sc-2211.

DATA



ALAS-E (D-4): sc-166739. Western blot analysis of ALAS-E expression in non-transfected: sc-117752 (**A**) and human ALAS-E transfected: sc-114245 (**B**) 293T whole cell lysates.



ALAS-E (D-4): sc-166739. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cervix tissue showing cytoplasmic staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

1. Desgardin, A.D., et al. 2012. Regulation of δ-aminolevulinic acid dehydratase by Krüppel-like factor 1. PLoS ONE 7: e46482.
2. Sen, T., et al. 2021. Decreased PGC1β expression results in disrupted human erythroid differentiation, impaired hemoglobinization and cell cycle exit. Sci. Rep. 11: 17129.

STORAGE

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

PROTOCOLS

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