SANTA CRUZ BIOTECHNOLOGY, INC.

LDH-A (E-9): sc-137243

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The lactate dehydrogenase family (LDH) catalyzes the final step of anaerobic glycolysis, the conversion of L-lactate and NAD to pyruvate and NADH. The LDH family consists of three members, LDH-A, LDH-B and LDH-C, all of which form tetramers consisting of four subunits. However, each family member displays a specific tissue distribution pattern with LDH-A and LDH-B predominant in several tissues, specifically LDH-A in muscle and LDH-B in heart, while LDH-C expression is confined to the testis and sperm. LDHs function as powerful markers for germ cell tumors. The genes encoding human LDH-A and LDH-C map to chromosome 11p15.1, while the human LDH-B gene maps to chromosome 12p12.1. Deficiency in the LDH-A gene is linked to exertional myoglobinuria.

CHROMOSOMAL LOCATION

Genetic locus: LDHA (human) mapping to 11p15.1.

SOURCE

LDH-A (E-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 6-42 at the N-terminus of LDH-A 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.

LDH-A (E-9) is available conjugated to agarose (sc-137243 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-137243 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137243 PE), fluorescein (sc-137243 FITC), Alexa Fluor® 488 (sc-137243 AF488), Alexa Fluor® 546 (sc-137243 AF546), Alexa Fluor® 594 (sc-137243 AF594) or Alexa Fluor® 647 (sc-137243 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137243 AF680) or Alexa Fluor® 790 (sc-137243 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-137243 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

LDH-A (E-9) is recommended for detection of LDH-A of 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 LDH-A siRNA (h): sc-43893, LDH-A shRNA Plasmid (h): sc-43893-SH and LDH-A shRNA (h) Lentiviral Particles: sc-43893-V.

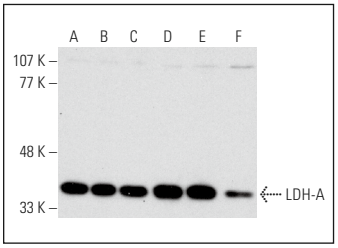
Molecular Weight of LDH-A: 35 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Y79 cell lysate: sc-2240 or SK-N-SH cell lysate: sc-2410.

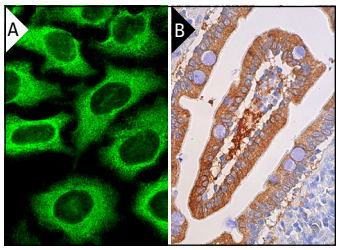
STORAGE

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

DATA



LDH-A (E-9) HRP: sc-137243 HRP. Direct western blot analysis of LDH-A expression in HeLa (**A**), Y79 (**B**), SJRH30 (**C**), SK-N-SH (**D**), A-431 (**E**) and Hs 181 Tes (**F**) whole cell lysates.



LDH-A (E-9): sc-137243. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Yang, W., et al. 2012. ERK1/2-dependent phosphorylation and nuclear translocation of PKM2 promotes the Warburg effect. Nat. Cell Biol. 14: 1295-1304.
2. Zou, Z.W., et al. 2016. LncRNA ANRIL is up-regulated in nasopharyngeal carcinoma and promotes the cancer progression via increasing proliferation, reprograming cell glucose metabolism and inducing side-population stem-like cancer cells. Oncotarget 7: 61741-61754.
3. Miranda-Gonçalves, V., et al. 2017. Monocarboxylate transporter 1 is a key player in glioma-endothelial cell crosstalk. Mol. Carcinog. 56: 2630-2642.
4. Zhang, H., et al. 2018. PGC1β regulates multiple myeloma tumor growth through LDHA-mediated glycolytic metabolism. Mol. Oncol. 12: 1579-1595.
5. Chung, T.W., et al. 2019. Machilin A inhibits tumor growth and macrophage M2 polarization through the reduction of lactic acid. Cancers 11: 963.
6. Wang, C., et al. 2020. Interactome analysis reveals that lncRNA HULC promotes aerobic glycolysis through LDHA and PKM2. Nat. Commun. 11: 3162.
7. Guddeti, R.K., et al. 2021. The chromatin modifier MORC2 affects glucose metabolism by regulating the expression of lactate dehydrogenase A through a feed forward loop with c-Myc. FEBS Lett. 595: 1289-1302.
8. Lim, J.S., et al. 2022. Mutual regulation between phosphofructokinase 1 platelet isoform and VEGF promotes glioblastoma tumor growth. Cell Death Dis. 13: 1002.
9. Liu, Z., et al. 2023. Iron promotes glycolysis to drive colon tumorigenesis. Biochim. Biophys. Acta Mol. Basis Dis. 1869: 166846.

RESEARCH USE

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