SANTA CRUZ BIOTECHNOLOGY, INC.

LDH-A (F-3): sc-137244

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.

REFERENCES

1. Edwards, Y.H., et al. 1987. Locus determining the human sperm-specific lactate dehydrogenase, LDHC, is syntenic with LDHA. Dev. Genet. 8: 219-232.
2. LeVan, K.M., et al. 1991. Properties of human testis-specific lactate dehydrogenase expressed from *Escherichia coli*. Biochem. J. 273: 587-592.

CHROMOSOMAL LOCATION

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

SOURCE

LDH-A (F-3) 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.

Blocking peptide available for competition studies, sc-137244 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

LDH-A (F-3) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with LDH-A of mouse or rat origin.

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.

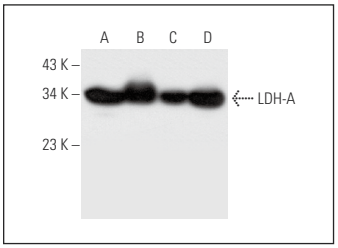
Molecular Weight of LDH-A: 35 kDa.

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

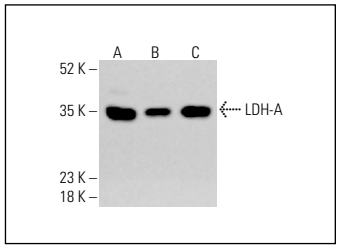
RECOMMENDED SUPPORT REAGENTS

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



LDH-A (F-3): sc-137244. Western blot analysis of LDH-A expression in HeLa (**A**), Y79 (**B**), SJRH30 (**C**) and SK-N-SH (**D**) whole cell lysates.



LDH-A (F-3): sc-137244. Western blot analysis of LDH-A expression in HeLa (**A**), K-562 (**B**) and HCT-116 (**C**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Qian, Y., et al. 2011. Cell culture and gene transcription effects of copper sulfate on chinese hamster ovary cells. Biotechnol. Prog. 27: 1190-1194.
2. Chen, S.F., et al. 2020. Arginine is neuroprotective through suppressing HIF-1α/LDHA-mediated inflammatory response after cerebral ischemia/reperfusion injury. Mol. Brain 13: 63.
3. Singh, S.V., et al. 2021. Metformin induced lactic acidosis impaired response of cancer cells towards paclitaxel and doxorubicin: role of monocarboxylate transporter. Biochim. Biophys. Acta Mol. Basis Dis. 1867: 166011.
4. Chang, L.L., et al. 2022. AKR1C1 promotes non-small cell lung cancer proliferation via crosstalk between HIF-1α and metabolic reprogramming. Transl. Oncol. 20: 101421.
5. Mayengbam, S.S., et al. 2023. Cholesterol reprograms glucose and lipid metabolism to promote proliferation in colon cancer cells. Cancer Metab. 11: 15.

STORAGE

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

CONJUGATES

See **LDH-A (E-9): sc-137243** for PRODUCTNAME antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.