

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

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.
3. Kanno, T., et al. 1995. Lactate dehydrogenase M-subunit deficiencies: clinical features, metabolic background, and genetic heterogeneities. *Muscle Nerve Suppl.* 3: S54-S60.

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 IgG₁ 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).

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.

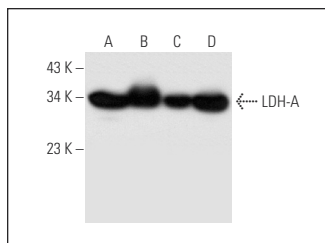
Molecular Weight of LDH-A: 35 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Y79 cell lysate: sc-2240 or A-431 whole cell lysate: sc-2201.

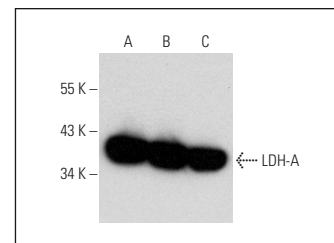
RECOMMENDED SUPPORT REAGENTS

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), A-431 (B) and Hs 181 Tes (C) whole cell lysates.

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.

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.



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