# SANTA CRUZ BIOTECHNOLOGY, INC.

# LDH-A (5): sc-130327



# 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 testes and sperm. LDHs function as powerful markers for germ cell tumors. The genes encoding human LDH-A and LDH-C map to chromosome 11, while the human LDH-B gene maps to chromosome 12. Deficiency in the LDH-A gene is linked to exertional myoglobinuria.

# REFERENCES

- Edwards, Y.H., et al. 1987. Locus determining the human sperm-specific I actate dehydrogenase, LDH-C, is syntenic with LDH-A. Dev. Genet. 8: 219-232.
- LeVan, K.M., et al. 1991. Properties of human testis-specific lactate dehydrogenase expressed from *Escherichia coli*. Biochem. J. 273: 587-592.
- 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 (5) is a mouse monoclonal antibody raised against recombinant LDH-A of human origin.

# PRODUCT

Each vial contains 200  $\mu g$  IgG1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

#### **STORAGE**

Store at 4° C, \*\*D0 NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

# **APPLICATIONS**

LDH-A (5) is recommended for detection of LDH-A of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] 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, MDA-MB-231 cell lysate: sc-2232 or Y79 cell lysate: sc-2240.

#### **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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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).

## DATA



LDH-A (5): sc-130327. Western blot analysis of human recombinant LDH-A.

# SELECT PRODUCT CITATIONS

- 1. Guo, B., et al. 2016. Naringin suppresses the metabolism of A375 cells by inhibiting the phosphorylation of c-Src. Tumour Biol. 37: 3841-3850.
- Amara, S., et al. 2016. Oleanolic acid inhibits high salt-induced exaggeration of warburg-like metabolism in breast cancer cells. Cell Biochem. Biophys. 74: 427-434.
- Fu, J., et al. 2016. Overcoming cetuximab resistance in Ewing's sarcoma by inhibiting lactate dehydrogenase-A. Mol. Med. Rep. 14: 995-1001.
- Pacheco-Velázquez, S.C., et al. 2018. Energy metabolism drugs block triple negative breast metastatic cancer cell phenotype. Mol. Pharm. 15: 2151-2164.
- 5. Miro, C., et al. 2021. Thyroid hormone enhances angiogenesis and the warburg effect in squamous cell carcinomas. Cancers 13: 2743.
- Pacheco-Velázquez, S.C., et al. 2022. 17-β Estradiol up-regulates energy metabolic pathways, cellular proliferation and tumor invasiveness in ER+ breast cancer spheroids. Front. Oncol. 12: 1018137.
- Abbotto, E., et al. 2023. SIRT6 pharmacological inhibition delays skin cancer progression in the squamous cell carcinoma. Biomed. Pharmacother. 166: 115326.

# **RESEARCH USE**

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



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