Revision 4

#3558 Store at -20C

LDHA/LDHC (C28H7) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IHC-P	H R Mk	Endogenous	37	Rabbit IgG	#P00338, #P07864	3939, 3948

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunohistochemistry (Paraffin)	1:400

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #31037.

Specificity/Sensitivity

LDHA/LDHC (C28H7) Rabbit mAb detects endogenous levels of total LDHA and LDHC proteins. Species cross-reactivity for IHC-P is human only.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the sequence of human LDHA.

Background

Lactate dehydrogenase (LDH) catalyzes the interconversion of pyruvate and NADH to lactate and NAD^+. When the oxygen supply is too low for mitochondrial ATP production, this reaction recycles NADH generated in glycolysis to NAD^+, which reenters glycolysis. The major form of LDH found in muscle cells is the A (LDHA) isozyme. The LDHA promoter contains HIF-1α binding sites (1). LDHA expression is induced under hypoxic conditions (2). During intensive and prolonged muscle exercise, lactate accumulates in muscle cells when the supply of oxygen does not meet demand. When oxygen levels return to normal, LDH converts lactate to pyruvate to generate ATP in the mitochondrial electron transport chain.
While LDHA is found primarily in muscle and kidney, LDHC is a testis-specific isoform (3). Both proteins are associated with human disease. Mutations in the corresponding LDHA gene are associated with LDHA deficiency, which is characterized by muscle stiffness following exercise and uterine stiffness during pregnancy (4). Abnormal LDHC expression is associated with several forms of cancer (5).

Background References

1. Semenza, G.L. et al. (1996) *J Biol Chem* 271, 32529-37.
2. Semenza, G.L. (2007) *Biochem J* 405, 1-9.
3. Takano, T. and Li, S.S. (1989) *Biochem Biophys Res Commun* 159, 579-83.
4. Miyajima, H. et al. (1993) *Neurology* 43, 1414-9.
5. Koslowski, M. et al. (2002) *Cancer Res* 62, 6750-5.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IHC-P:** Immunohistochemistry (Paraffin)

Cross-Reactivity Key

H: Human **R:** Rat **Mk:** Monkey

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Limited Uses

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