



Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

#8176 Store at -20C

Phospho-LDHA (Tyr10) Antibody

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W	Reactivity: H M R	Sensitivity: Endogenous	MW (kDa): 37	Source/Isotype: Rabbit	UniProt ID: #P00338	Entrez-Gene Id: 3939
---------------------------	-----------------------------	-----------------------------------	------------------------	----------------------------------	-------------------------------	--------------------------------

Product Usage Information

Application

Western Blotting

Dilution

1:1000

Storage

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

Specificity/Sensitivity

Phospho-LDHA (Tyr10) Antibody recognizes endogenous levels of LDHA protein only when phosphorylated at Tyr10.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Tyr10 of human LDHA protein. Antibodies are purified by protein A and peptide affinity chromatography.

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.

Recent studies indicate that LDHA is phosphorylated at Tyr10 and Tyr83 by the receptor tyrosine kinase FGFR1 (3). Phosphorylation at Tyr10 up-regulates the activity of LDHA and is found in a variety of human cancer cells (3). Results further suggest that tyrosine phosphorylation regulates the NADH/NAD⁺ redox homeostasis and thus promotes the Warburg effect and tumor cell growth (3).

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. Fan, J. et al. (2011) *Mol Cell Biol* 31, 4938-50.

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

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in

any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.