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-1-\(\alpha\) 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 LDH 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 LDH expression is associated with several forms of cancer (5).

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.

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.

Recommended Antibody Dilutions:
- Western blotting: 1:1000
- Immunohistochemistry (Paraffin): 1:400

Unmasking buffer: Citrate
Antibody diluent: SignalStain® Antibody Diluent #8112

For application specific protocols please see the web page for this product at www.cellsignal.com. Please visit www.cellsignal.com for a complete listing of recommended companion products.