APE131Ra01 100μg
Active Lactate Dehydrogenase C (LDHC)
Organism Species: *Rattus norvegicus (Rat)*
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Prokaryotic expression.
Host: *E. coli*
Residues: Met1~Leu332
Tags: N-terminal His-tag
Purity: >95%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 0.01% SKL, 5%Trehalose .
Original Concentration: 200μg/mL
Applications: Cell culture; Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 8.1
Predicted Molecular Mass: 39.4kDa
Accurate Molecular Mass: 39kDa as determined by SDS-PAGE reducing conditions.

[USAGE]

Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

[STORAGE AND STABILITY]

Storage: Avoid repeated freeze/thaw cycles.
Store at 2-8ºC for one month.
Aliquot and store at -80ºC for 12 months.

Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37ºC for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

[SEQUENCE]

MSTVKEQLIQ NLAPDEKQSR CKITVVGVGN VGMACAISIL LKGLADELAL
VDADENKLKG EALDLLHGSL FLSTPKIVFG KDYSVSANSK LVIITAGARM
VSGESRLALL QRNVTSMKAI VPGVIQNSPD CKIMIVTNPV DILTYVVWKI
SGLPVSSVIG SGCNLDSARF RYLIGEKLGV NPSSCHGWVL GEHGDSSVPI
WSGVNIAGVT LKSLNPAIGS DSDKEQWKTV HKQVVDGGYE VLNLKGYTSW
AIALSVTDIA ASILKNLKRV HAVTTLVKGL YGIKEEIFLS IPCVLGQSGI
TDLVKVNMNT EEEALFKKSC DILWNIQKDL QL

[ACTIVITY]

A hallmark of most cancer cells is an altered metabolism involving a shift to aerobic glycolysis with lactate production coupled with a higher uptake of glucose as the main source of energy. Lactate dehydrogenase (LDH) is key to this shift by catalyzing the formation of lactate by reducing pyruvate with NADH, which also generates NAD(+) that is essential for the continuity of glycolysis. Inhibiting LDH activity has an anti-proliferative effect on cancer cells. It may reverse the resistance of tumor cells to conventional chemo- and radiotherapy. Recent research has renewed interest in LDH as an anticancer drug target. LDH enzymes have three homologous subunits LDHA, LDHB and LDHC. The activity of recombinant rat LDHC was measured by its ability to reduce pyruvate to lactate. The reaction was performed in 25 mM Tris, 100 mM NaCl, pH 7.5 (assay buffer), initiated by addition 50 μL of various concentrations of rrLDHC (diluted by assay buffer) to 50 μL of substrate mixture 1.6 mM beta-NADH and 4 mM sodium pyruvate. The final well serves as a negative control with no rrLDHC, replaced with 50 μl assay buffer. Read at a wavelength of 340 nm in kinetic mode for 5 minutes.

The specific activity of recombinant rat LDHC is > 880 pmol/min/μg.

$$\text{Specific Activity (pmol/min/ug)} = \frac{\text{Adjusted } V_{max}^{*} \text{ (OD/min) x well volume (L) x } 10^{12} \text{ pmol/mol}}{\text{ext. coeff}^{**} \text{ (M}^{-1}\text{cm}^{-1}\text{) x path corr.}^{***} \text{ (cm) x amount of enzyme (ug)}}$$

*Adjusted for Substrate Blank
**Using the extinction coefficient 6220 $M^{-1}cm^{-1}$
***Using the path correction 0.320 cm

[IDENTIFICATION]

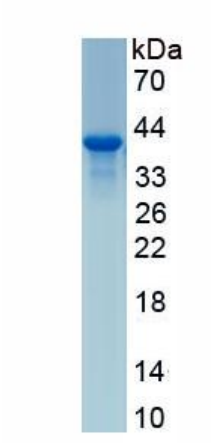

Figure 1. SDS-PAGE

Sample: Active recombinant LDHC, Rat

[IMPORTANT NOTE]

The kit is designed for research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.