L-Lactate Assay Kit (Colorimetric) ab65331

Overview

Product name: L-Lactate Assay Kit (Colorimetric)
Detection method: Colorimetric
Sample type: Cell culture supernatant, Urine, Serum, Plasma, Other biological fluids, Cell Lysate, Tissue Lysate
Assay type: Quantitative
Sensitivity: 0.02 mM
Range: 0.02 mM - 10 mM
Assay time: 0h 30m

Product overview

L-Lactate Assay Kit (Colorimetric) (ab65331) uses an assay protocol where lactate is oxidized by lactate dehydrogenase to generate a product which interacts with a probe to produce a color (Amax = 450 nm).

The kit detects L(+)-Lactate in biological samples such as serum or plasma, cells, tissues, cell culture and fermentation media.

Lactate assay protocol summary:
- add samples and standards to wells
- add reaction mix and incubate for 30 min at room temp
- analyze with microplate reader

Notes

This product is manufactured by BioVision, an Abcam company and was previously called K627 Lactate Colorimetric Assay Kit II. K627-100 is the same size as the 100 test size of ab65331.

L(+)-Lactate is the major stereo-isomer of lactate formed in human intermediary metabolism and is present in blood. D(-)-Lactate is also present (see D-Lactate assay kits) but only at about 1-5% of the concentration of L(+)-Lactate.

L-Lactate assay kit ab65331 is our most popular L-Lactate assay kit (colorimetric 450nm, range 0.02 mM - 10 mM). Alternative L-Lactate assay kits offer different readout modes/wavelengths and sensitivity/range:
- L-Lactate assay ab65330: colorimetric 570 nm, fluorometric Ex/Em 535/587 nm, range 0.001 mM - 10 mM
- L-Lactate assay ab169557: fluorometric Ex/Em 535/587 nm, range 0.2 µM - 50 µM

Review our Metabolism Assay Guide to learn about assays for metabolites, metabolic enzymes, mitochondrial function, and oxidative stress, and also about how to assay metabolic function in...
live cells using your plate reader.

**How other researchers have used L-Lactate Assay Kit ab65331**

This Lactate assay kit has been used in publications in a variety of sample types, including:
- Human: THP-1 cell lysates\(^1\), MDA-MB-231 and HepG2 cell culture lysates\(^2\), cell culture supernatant (HepG2, A549, Huh7, PC3, LN229, HeLa)\(^3\), brain tissue\(^4\)
- Mouse: brown adipose tissue lysate\(^5\), thymic lymphoma tissue\(^6\), cell culture supernatant\(^7\), T cell primary cell culture supernatants\(^8\), serum\(^9\), serum and muscle\(^10\)
- Bovine: cumulus cell culture supernatant\(^11\)


Abcam has not and does not intend to apply for the REACH Authorisation of customers’ uses of products that contain European Authorisation list (Annex XIV) substances. It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

**Platform**

Microplate reader

**Properties**

**Storage instructions**

Store at -20°C. Please refer to protocols.

<table>
<thead>
<tr>
<th>Components</th>
<th>100 tests</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>L(+)-Lactate Standard</td>
<td>1 x 100µl</td>
<td></td>
</tr>
<tr>
<td>Assay Buffer XII</td>
<td>1 x 25ml</td>
<td></td>
</tr>
<tr>
<td>Enzyme Mix XV</td>
<td>1 vial</td>
<td></td>
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<tr>
<td>Developer Solution III</td>
<td>1 vial</td>
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</tbody>
</table>

**Relevance**

Lactate (CH\(_3\)CH(OH)COO-) plays important roles in many biological processes. Abnormal high concentration of lactate has been related to disease states such as diabetes and lactate acidosis, etc. L(+)-Lactate is the major stereoisomer of lactate formed in human intermediary metabolism and is present in blood. The lactate to pyruvate ratio reflects the redox state of the cell and describes the balance between NAD\(^+\) and NADH, which is dependent on the interconversion of lactate and pyruvate via lactate dehydrogenase (LDH).

**Images**
Plasma lactate concentrations were determined using L-Lactate assay kit (ab65331) in Ark2C+/+ and Ark2C−/− (Arkadia-like gene) mice.

Linearity of dilution: concentration of L-Lactate in differently diluted (X-axis) biological samples, demonstrating a linearity of 89%-111% (concentrations corrected for by factor of dilution; duplicates; +/- SD).
Relative signal (RFU) in unfiltered human plasma (dilution 1:8), comparing L-lactate signals with background reading (no enzyme) after 10 minutes of incubation (duplicates +/- SD).

Standard curve with background signal subtracted (duplicates; +/- SD).

Lactate Standard Curve. The assay is performed following the kit (ab65331) protocol.

Please note: All products are “FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES”

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