Test Definition: LACS1

Lactate, Plasma

Overview

Useful For
Diagnosing and monitoring patients with lactic acidosis

Method Name
Colorimetric

NY State Available
Yes

Specimen

Specimen Type
Plasma NaFl-KOx

Ordering Guidance
This test does not measure D-lactate, an uncommon, often undiagnosed cause of lactic acidosis. If D-lactate testing is needed, order DLAC / D-Lactate, Plasma.

Necessary Information
Patient's age and sex are required.

Specimen Required
Collection Container/Tube: Gray top (potassium oxalate/sodium fluoride)
Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL
Collection Instructions:
1. Collection must be at least 1 mL in a 2-mL collection tube or at least 2 mL in a 4-mL collection tube.
2. Centrifuge and aliquot plasma into plastic vial.

Specimen Minimum Volume
0.25 mL

Reject Due To

Gross hemolysis	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container

Plasma NaFl-KOx	Refrigerated (preferred)	14 days	
	Ambient	8 hours	

Clinical & Interpretive

Clinical Information

Anaerobic glycolysis markedly increases blood lactate and causes some increase in pyruvate levels, especially with prolonged exercise. The common cause for increased blood lactate and pyruvate is anoxia resulting from such conditions as shock, pneumonia, and congestive heart failure. Lactic acidosis may also occur in kidney failure and leukemia. Thiamine deficiency and diabetic ketoacidosis are associated with increased levels of lactate and pyruvate.

Lactate measurements that evaluate the acid-base status are used in the diagnosis and treatment of lactic acidosis (abnormally high acidity in the blood).

Reference Values

0-90 days (<3 months): 0.0-3.3 mmol/L
3-24 months: 0.0-3.1 mmol/L
>24 months-18 years: 0.0-2.2 mmol/L
>18 years: 0.5-2.2 mmol/L

Interpretation

While no definitive concentration of lactate has been established for the diagnosis of lactic acidosis, lactate concentrations exceeding 5 mmol/L and pH below 7.25 are generally considered indicative of significant lactic acidosis.

Cautions

Proper specimen collection and processing techniques are critical for reliable results.

Clinical Reference

1. Mizock BA. The hepatosplanchnic area and hyperlactatemia: A tale of two lactates. Crit Care Med. 2001;29(2):447-449. doi:10.1097/00003246-200102000-00047
2. Duke T: Dysoxia and lactate. Arch Dis Child. Oct;81(4):343-350. doi:10.1136/adc.81.4.343
3. Sacks D: Carbohydrates. In: Rifai N, Horvath AR, Wittwer CT, eds. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics 6th ed. Elsevier; 2018:518-538

Performance

Method Description

Lactate concentration is determined using an enzymatic colorimetric method. L-lactate is oxidized to pyruvate by the specific enzyme lactate oxidase. Peroxidase is used to generate a colored dye using the hydrogen peroxide generated in the first reaction. The intensity of the color formed is directly proportional to the L-lactate concentration. It is determined by measuring the increase in absorbance.(Package insert: Roche Diagnostics, Indianapolis IN, 02/2016)

PDF Report

No

Day(s) Performed
Monday through Sunday

Report Available
Same day/1 to 2 days

Specimen Retention Time
2 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information
83605

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
LACS1	Lactate, P	2524-7

Result ID	Test Result Name	Result LOINC® Value
LACS1	Lactate, P	2524-7