

Overview
Useful For

An adjunct to urine D-lactate (preferred) for the diagnosis of D-lactate acidosis

Special Instructions

- [Biochemical Genetics Patient Information](#)

Method Name

Enzymatic

NY State Available

Yes

Specimen
Specimen Type

Plasma NaFI-KOx

Ordering Guidance

Urine is the preferred specimen for D-lactate determination, order DLAU / D-Lactate, Urine.

For determination of L-lactate (lactic acid), order LACS1 / Lactate, Plasma

Specimen Required

Collection Container/Tube: Sodium Fluoride/Potassium Oxalate Tube, 2 mL (T275)

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

Collection Instructions: Centrifuge, aliquot plasma in plastic vial, and freeze immediately .

Specimen Minimum Volume

0.55 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Plasma NaFI-KOx	Frozen (preferred)	365 days	
	Ambient	7 days	

Specimen Type	Temperature	Time	Special Container
	Refrigerated	7 days	

Clinical and Interpretive

Clinical Information

D-lactate is produced by bacteria residing in the colon when carbohydrates are not completely absorbed in the small intestine. When large amounts of D-lactate are present, individuals can experience metabolic acidosis, altered mental status (from drowsiness to coma), and a variety of other neurologic symptoms, particularly dysarthria and ataxia.

D-lactic acidosis is typically observed in patients with a malabsorptive disorder, such as short-bowel syndrome, or following a jejunioileal bypass. In addition, healthy children presenting with gastroenteritis may also develop the critical presentation of D-lactic acidosis.

Routine lactic acid determinations in blood will not reveal abnormalities because most lactic acid assays measure only L-lactate. Accordingly, D-lactate analysis must be specifically requested (eg, this test). However, as D-lactate is readily excreted in urine, DLAU / D-Lactate, Urine is the preferred specimen for D-lactate determinations.

Reference Values

0.0-0.25 mmol/L

Interpretation

Increased levels are consistent with D-lactic acidosis. However, because D-lactate is readily excreted, urine determinations are preferred.

Cautions

The test performed was D-lactate. This is a product of bacterial overgrowth in the gastrointestinal tract. It should not be confused with L-lactate, which accumulates in some metabolic acidosis.

Clinical Reference

1. Petersen C: D-lactic acidosis. *Nutr Clin Pract.* 2005;20(6):634-645

2. Kowligi NG, Chhabra L: D-Lactic acidosis: An underrecognized complication of short bowel syndrome. *Gastroenterol Res Pract.* 2015;2015:476215. doi: /10.1155/2015/476215

Performance

Method Description

D-lactate is oxidized to pyruvate in the presence of D-lactate dehydrogenase and nicotinamide adenine dinucleotide phosphate (NAD). The reaction proceeds because the pyruvate is continually removed as a pyruvate-hydrazone complex. The quantity of reduced NAD produced is directly proportional to the amount of D-lactate oxidized and is measured spectrophotometrically at 340 nm.(Brandt RB, Siegel SA, Waters MG, Bloch MH: Spectrophotometric assay for D-(-)-lactate in plasma. *Anal Biochem.*1980;102(1):39-46; Cowan T, Pasquali M: Laboratory investigations of inborn errors of metabolism. In: K Sarafoglou, GF Hoffman, KS Roth, eds. *Pediatric Endocrinology and Inborn Errors of Metabolism.* 2nd ed. McGraw-Hill Education; 2017;1139-1158)

PDF Report

No

Day(s) Performed

Varies

Report Available

4 to 8 days

Specimen Retention Time

1 month

Performing Laboratory Location

Rochester

Fees and 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 Regional Manager. For assistance, contact [Customer Service](#).

Test Classification

This test was developed, and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

83605

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
DLAC	D-Lactate, P	14045-9

Result ID	Test Result Name	Result LOINC Value
8878	D-Lactate, P	14045-9