MAYO CLINIC LABORATORIES

Test Definition: DLAU

D-Lactate, U

Overview

Useful For

Preferred test for diagnosing D-lactate acidosis, especially in patients with jejunoileal bypass and short-bowel syndrome

Special Instructions

- Biochemical Genetics Patient Information

Method Name

Enzymatic

NY State Available

Yes

Specimen

Specimen Type

Urine

Specimen Required

Container/Tube: Plastic, 10-mL urine tube (T068)

Specimen Volume: 2.5 mL

Collection Instructions:

1. Collect a timed or random urine specimen.

2. No preservative.

3. Immediately freeze specimen.

Forms

Biochemical Genetics Patient Information (T602)

Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Minimum Volume

0.65 mL

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Urine	Frozen (preferred)	365 days	
	Refrigerated	7 days	
	Ambient		

Clinical & 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 experiencemetabolic acidosis, altered mental status (from drowsiness to coma) and a variety of other neurologic symptoms, in particular dysarthria and ataxia. Although a temporal relationship has been described between elevations of plasma and urine D-lactate and the accompanying encephalopathy, the mechanism of neurologic manifestations has not been elucidated.

D-lactic acidosis is typically observed in patients with a malabsorptive disorder, such as short-bowel syndrome, or following jejunoileal bypass. In addition, healthy children presenting with gastroenteritis may also develop the clinical 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, DLAC / D-Lactate, Plasma). However, as D-lactate is readily excreted in urine, this is the preferred specimen for D-lactate determinations.

Reference Values

0.0-0.25 mmol/L

Interpretation

Increased levels are diagnostic.

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. Brandt RB, Siegel SA, Waters MG, Bloch MH: Spectrophotometric assay for D-(-)-lactate in plasma. Anal Biochem.

1980;102(1):39-46

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

3. Kowlgi 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 (NAD+). The reaction proceeds because the pyruvate is continually removed as a pyruvate-hydrazone complex. The quantity of NADH produced is directly proportional to the amount of D-lactate oxidized and is measured spectrophotometrically at 340 nm.(Unpublished Mayo method based on Brandt approach[1])

PDF Report
No

Specimen Retention Time
1 month

Performing Laboratory Location
Rochester

Fees & Codes

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
DLAU	D-Lactate, U	14046-7

Test Definition: DLAU

D-Lactate, U

Result ID	Reporting Name	LOINC®
8873	D-Lactate, U	14046-7