# 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) in Special Instructions

### Specimen Minimum Volume

0.65 mL

### Reject Due To

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

### Specimen Stability Information

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

| Specimen Type | Temperature | Time | Special Container |
|---|---|---|---|
| | Ambient | 72 hours | |

## 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 are absorbed it can cause metabolic 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 short-bowel syndrome and following jejunoileal bypass resulting in carbohydrate malabsorption. 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, 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

## 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.(Unpublished Mayo method based on Brandt approach[1])

### 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 |
|---|---|---|
| DLAU | D-Lactate, U | 14046-7 |

| Result ID | Test Result Name | Result LOINC Value |
|---|---|---|
| 8873 | D-Lactate, U | 14046-7 |