Lab Dept: Chemistry

Test Name: LDH ISOENZYMES

General Information

Lab Order Codes:	LDHI
Synonyms:	Lactate Dehydrogenase Isoenzymes, Serum
CPT Codes:	83625 – LD; isoenzymes, separation and quantitation 83615 – Lactate dehydrogenase (LD)
Test Includes:	LD, total plus isoenzymes

Logistics

Test Indications:	May be useful in liver disease and conditions causing hemolysis. Differentiating heart from liver and other sources of LDH. Used by many clinicians in the diagnosis of myocardial infarctions in combination with total creatine kinase (CK) and CK-MB.
Lab Testing Sections:	Chemistry - Sendouts
Referred to:	Mayo Medical Laboratories (Test# 8679/LD_I)
Phone Numbers:	MIN Lab: 612-813-6280 STP Lab: 651-220-6550
Test Availability:	Daily, 24 hours
Turnaround Time:	1 - 4 days
Special Instructions:	Patient's age is required with specimen.

Specimen

Specimen Type:	Blood
Container:	SST (Gold, marble or red) tube
Draw Volume:	6 mL (Minimum: 2.5 mL) blood
Processed Volume:	2 mL (Minimum: 0.75 mL) serum
Collection:	Routine venipuncture

Special Processing: Lab Staff: Centrifuge specimen, remove serum aliquot and split into two (each containing 1 mL, preferred) screw-capped round bottom plastic vial. Store and ship at ambient temperatures. Specimen cannot be frozen. Forward promptly.

Patient Preparation: None

Sample Rejection: Hemolysis; thawed specimens; mislabeled or unlabeled specimens

Interpretive

Reference Range:

LD Total	
Age	**Males & Females (U/L)**
1 – 30 days:	135 - 750
31 days – 11 months:	180 - 435
1 – 3 years:	160 - 370
4 – 6 years:	145 - 345
7 – 9 years:	143 - 290
10 – 12 years:	120 - 293
13 – 15 years:	110 - 283
16 – 17 years:	105 - 233
≥18 years:	122 - 222
LD Isoenzymes	
I (fast band):	17.5 - 28.3%
II:	30.4 - 36.4%
III:	19.2 - 24.8%
IV:	9.6 - 15.6%
V (slow band):	5.5 - 12.7%

Critical Values:	N/A
Limitations:	A hemolyzed specimen is not acceptable as red blood cells contain much more LD than serum. Causes can include transportation via pneumatic tube, vigorous mixing or traumatic venipuncture. Tubes should be void of air bubbles to prevent minor hemolysis. LD activity is one of the most sensitive indicators of in vitro hemolysis. Hemolysis causes anomalous elevation of LD (1) such that any ex vivo hemolysis must be strictly avoided. Freezing or prolonged storage at 4 degrees C (>12 hours) causes LD(5) to be lost. Elevations of intermediate forms (LD2 and LD4) are rarely used to define a tissue of origin and such reports are largely anecdotal. While increases in serum LD also are seen following an Myocardial Infarction, the test has been replaced by the determination of troponin.
Methodology:	Electrophoresis with densitometry, photometric rate
References:	Mayo Medical Laboratories Web Page December 2017
Updates:	8/23/2005: Method update, previously listed as Electrophoresis only. 5/9/2008: Specimen storage/transport previously listed as refrigerated. 8/19/2015: Specimen processing update. 12/20/2017: Collection container update