

Overview

Useful For

Detecting toxic thallium exposure in random urine specimens

Profile Information

Test ID	Reporting Name	Available Separately	Always Performed
TLCR	Thallium/Creat Ratio, U	No	Yes
CDCR	Creatinine Conc	No	Yes

Special Instructions

- [Trace Metals Analysis Specimen Collection and Transport](#)

Method Name

TLCR: Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

CDCR: Enzymatic Colorimetric Assay

NY State Available

Yes

Specimen

Specimen Type

Urine

Specimen Required

Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

Supplies: Urine Tubes, 10 mL (T068)

Collection Container/Tube: Clean, plastic urine collection container with no metal cap or glued insert

Submission Container/Tube: Plastic, 10-mL urine tube (T068) or a clean, plastic aliquot container with no metal cap or glued insert

Specimen Volume: 2 mL

Collection Instructions:

1. Collect a random urine specimen.
2. See [Trace Metals Analysis Specimen Collection and Transport](#) in Special Instructions for complete instructions.

Specimen Minimum Volume

1.3 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	Refrigerated (preferred)	28 days	
	Ambient	28 days	
	Frozen	28 days	

Clinical and Interpretive**Clinical Information**

Thallium is found in some depilatories and rodenticides. Accidental ingestion may lead to vomiting, diarrhea, and leg pains followed by a severe and sometimes fatal sensorimotor polyneuropathy. Alopecia (hair loss) may occur 3 weeks after poisoning. The fatal dose is approximately 1 gram.

Reference Values

0-17 years: not established

> or =18 years: <2 mcg/g creatinine

Interpretation

Patients exposed to high doses of thallium (>1 g) present with alopecia, peripheral neuropathy and seizures, and renal failure.

Normal daily output is less than 1 mcg/day.

Exposed patients can have urine output greater than 10 mcg/day. The long-term consequences of such an exposure are poor.

Cautions

No significant cautionary statements

Clinical Reference

1. Bank WJ, Pleasure DE, Suzuki K, et al: Thallium poisoning. Arch Neurol 1972;26:456-464
2. Pelclova D, Urban P, Ridson P, et al: Two-year follow-up of two patients after severe thallium intoxication. Hum Exp Toxicol 2009 May;28(5):263-272
3. Zhao G, Ding M, Zhang B, et al: Clinical manifestations and management of acute thallium poisoning. Eur Neurol 2008;60(6):292-297

Performance**Method Description**

Thallium in blood and urine is analyzed by inductively coupled plasma-mass spectrometry (ICP-MS) in standard mode using rhodium (Rh) as an internal standard and a salt matrix calibration. (Unpublished Mayo method)

PDF Report

No

Day(s) and Time(s) Test Performed

Tuesday, Friday; 8 a.m.

Analytic Time

1 day

Maximum Laboratory Time

5 days

Specimen Retention Time

14 days

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

See Individual Test IDs

CPT Code Information

83018 Thallium concentration

82570 Creatinine concentration

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
TLCRU	Thallium/Creat Ratio, Random, U	13469-2

Result ID	Test Result Name	Result LOINC Value
CDCR	Creatinine Conc	2161-8
32870	Thallium/Creat Ratio, U	13469-2

