

Overview

Useful For

Screening for disorders with increased excretion of fructose, glucose, galactose, disaccharides, oligosaccharides, and succinylpurines

This test is **not recommended** as a follow up test for abnormal newborn screening for galactosemia.

Genetics Test Information

Screening for disorders with increased excretion of fructose, glucose, galactose, disaccharides, oligosaccharides, and succinylpurines. If qualitative result is suggestive of an elevation of galactose or glucose, quantitative testing will be performed at an additional charge.

Reflex Tests

Test ID	Reporting Name	Available Separately	Always Performed
GALU	Galactose, QN, U	Yes	No
RGLUR	Glucose, Random, U	Yes	No

Testing Algorithm

Testing begins with carbohydrate analysis. If qualitative results are normal or abnormal but not indicative of galactose or glucose, testing is complete.

If qualitative results indicate the presence of galactose, then quantitative testing for galactose will be performed at an additional charge.

If qualitative results indicate the presence of glucose, then random glucose testing will be performed at an additional charge.

Special Instructions

- [Biochemical Genetics Patient Information](#)

Method Name

Thin-Layer Chromatography (TLC), Qualitative

NY State Available

Yes

Specimen

Specimen Type

Urine

Advisory Information

This test is not appropriate for evaluation of an abnormal newborn screen for galactosemia. For those cases, order GATOL / Galactitol, Quantitative, Urine.

Specimen Required

Supplies: Urine Tubes, 10 mL (T068)

Container/Tube: Plastic, 10-mL urine tube

Specimen Volume: 5 mL

Collection Instructions: Collect an early-morning (preferred) random urine specimen.

Forms

1. [Biochemical Genetics Patient Information](#) (T602) in Special Instructions.
2. If not ordering electronically, complete, print, and send an [Inborn Errors of Metabolism Test Request](#) (T798) with the specimen.

Specimen Minimum Volume

1 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)	21 days	
	Refrigerated	21 days	

Clinical and Interpretive

Clinical Information

Saccharides (also called carbohydrates) are a group of mono-, di-, and oligosaccharides of endogenous and exogenous sources. Their presence frequently reflects dietary consumption but can indicate specific pathology if either a particular saccharide or a particular excretory pattern is present. Most saccharides (except glucose) have low renal thresholds and are readily excreted in the urine.

The presence of saccharides in urine is seen in some inborn errors of metabolism. Urine tests for reducing substances (eg, copper reduction test) are often used to screen for those disorders. However, in addition to sugars, a number of other substances present in biological fluids (eg, salicylates, uric acid, hippuric acid, ascorbic acid) have reducing properties. Conversely, some saccharides such as sucrose and trehalose do not have reducing properties. Other saccharides present at low concentrations may not be identified by reducing tests. Substances in urine may inhibit glucose oxidase-based tests and, also, other saccharides of diagnostic importance may be present along with glucose in urine. Chromatography of urinary saccharides is therefore required in many instances to identify the particular species of saccharide present. Any specimen tested for urinary carbohydrates is concurrently tested for the presence of succinyl nucleosides to screen for inborn errors of purine synthesis.

Reference Values

Negative

If positive, carbohydrate is identified.

Interpretation

An interpretive comment is provided that includes the name of the identified saccharide and the probable source.

Cautions

A number of compounds (identifiable by the technique used) interfere with the assay and microbial contamination can lead to uninterpretable patterns of urinary saccharides. Retesting will be recommended in these cases.

Clinical Reference

1. Steinmann B, Gitzelmann R, Van den Berghe G et al: Disorders of Fructose Metabolism. In *The Online Metabolic and Molecular Bases of Inherited Disease*. Edited by D Valle, S Antonarakis, A Ballabio, et al. , McGraw-Hill. Accessed 1/9/2020. Available at <http://ommbid.mhmedical.com/content.aspx?bookid=2709§ionid=225080452>
2. Race V, Marie S, Vincent M, Van den Berghe G: Clinical, biochemical and molecular genetic correlations in adenylosuccinate lyase deficiency. *Hum Mol Genet* 2000 Sep 1;9(14):2159-2165
3. Baker P II, Ayres L, Gaughan S, et al: Hereditary Fructose Intolerance. In GeneReviews. Edited by MP Adam, HH Ardinger, RA Pagon, et al. University of Washington, Seattle,1993-2020. 2015 Dec 17 Accessed 03/2020.Available at <https://www.ncbi.nlm.nih.gov/books/NBK333439>

Performance

Method Description

The urine is chromatographed on a silica gel thin-layer plate. The sugars are located with naphthoresorcinol spray reagent and are identified by visual comparison with a sugar standard chromatographed on the same plate. If galactose is found, it is quantitated by an enzymatic method.(Prinz W, Meldrum W, Wilkinson L: A simple and rapid thin-layer chromatographic method for the identification of urinary carbohydrates. *Clin Chim Acta* 1978;82:229-232; Cowan T, Pasquali M: Laboratory Investigations of Inborn Errors of Metabolism. In *Pediatric Endocrinology and Inborn Errors of Metabolism*. Second Edition. Edited by K Sarafoglou, GF Hoffman, KS Roth. 2017. pp 1139-1158)

PDF Report

No

Day(s) and Time(s) Test Performed

Tuesday; 11 a.m.

Analytic Time

8 days

Maximum Laboratory Time

15 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

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 U.S. Food and Drug Administration.

CPT Code Information

84377-Carbohydrate

82760-Galactose (if appropriate)

82945-Glucose (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
CHOU	Carbohydrate, U	16550-6

Result ID	Test Result Name	Result LOINC Value
9255	Carbohydrate, U	16550-6