Test Definition: TRSF

Transferrin, S

Overview

Useful For

Screening for chronic iron overload diseases, particularly hereditary hemochromatosis

Method Name

Immunoturbidimetric Assay

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 0.6 mL

Collection Instructions:

1. Serum gel tubes should be centrifuged within 2 hours of collection.

2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Forms

If not ordering electronically, complete, print, and send a Benign Hematology Test Request Form (T755) with the specimen.

Specimen Minimum Volume

0.25 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	7 days	

Specimen Type	Temperature	Time	Special Container
	Frozen	180 days	
	Ambient	7 days	

Clinical and Interpretive

Clinical Information

Transferrin is a glycoprotein with a molecular weight of 79570 daltons. It consists of a polypeptide strand with 2 N-glycosidically linked oligosaccharide chains and exists in numerous isoforms. The rate of synthesis in the liver can be altered in accordance with the bodyÃ¢â‚¬â„¢s iron requirements and iron reserves. Transferrin is the iron transport protein in serum. In cases of iron deficiency, the degree of transferrin saturation appears to be an extremely sensitive indicator of functional iron depletion. The ferritin levels are depressed when there is a deficiency of storage iron. In sideropenia, an iron deficiency can be excluded if the serum transferrin concentration is low, as in inflammation or less commonly, in cases of ascorbic acid deficiency. In screening for hereditary hemochromatosis, transferrin saturation provides a better indication of the homozygous genotype than does ferritin. The treatment of anemia with erythropoietin in patients with renal failure is only effective when sufficient depot iron is present. The best monitoring procedure is to determine transferrin saturation during therapy. Transferrin saturation in conjunction with ferritin gives a conclusive prediction of the exclusion of iron overloading in patients with chronic liver disease.

Reference Values

200-360 mg/dL

Interpretation

Serum iron, total iron-binding capacity (TIBC), and percent saturation are useful only in screening for chronic iron overload diseases, particularly hereditary hemochromatosis. Although serum iron, TIBC, and percent saturation are widely used for the diagnosis of iron deficiency, serum ferritin is a much more sensitive and reliable means of demonstrating iron deficiency.

In hereditary hemochromatosis, serum iron is usually above 150 mcg/dL and percent saturation exceeds 60%.

In advanced iron overload states, the percent saturation often exceeds 90%.

Cautions

Measurement of serum iron, iron-binding capacity, and percent saturation should not be used as the primary test for iron deficiency. It may be helpful when used in conjunction with ferritin and soluble transferrin receptor testing, especially in patients with inflammation.

Clinical Reference

1. Silverman LM, Christenson RH, Grant GH: Amino acids and proteins. In Textbook of Clinical Chemistry. Edited by NW Tietz. Philadelphia, WB Saunders Company, 1986, pp 519-618

2. Ramsay WN: The determination of the total iron binding capacity of serum. Clin Chim Acta 1997 Mar 18;259(1-2):25-30

3. Tsung SH, Rosenthal WA, Milewski KA: Immunological measurement of transferrin compared with chemical measurement of total iron binding capacity. Clin Chem 1975;21:1063-1066

4. Buffone GJ, Lewis SA, Losefsohn M, Hicks JM: Chemical and immunochemical measurements of total iron

binding capacity compared. Clin Chem 1978;24:1788-1791

5. Markowitz H, Fairbanks VF: Transferrin assay and total iron binding capacity. Mayo Clin Proc 1983;58:827-828

6. Szoke D, Panteghini M: Diagnostic value of transferrin. Clin Chim Acta 2012 Aug 16;413(15-16):1184-1189

Performance

Method Description

Antitransferrin antibodies react with the antigen in the sample to form an antigen/antibody complex. Following agglutination, this is measured turbidimetrically. Addition of polyethylene glycol allows the reaction to progress rapidly to the end point and increases sensitivity.(Package insert: Roche TRSF2 reagent. Indianapolis, IN, 2005)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Saturday; Continuously

Analytic Time

Same day/1 day

Maximum Laboratory Time

2 days

Specimen Retention Time

7 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 has been cleared or approved by the U.S. Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information

84466

LOINC® Information

Test Definition: TRSF

Transferrin, S

Test ID	Test Order Name	Order LOINC Value
TRSF	Transferrin, S	3034-6

Result ID	Test Result Name	Result LOINC Value
TRSF	Transferrin, S	3034-6