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Use a keyword, test name or number

Soluble Transferrin Receptor

TEST: 143305 CPT: 84238

Synonyms	• sTfR • Transferrin Receptor
Expected Turnaround Time	2 - 3 days Turnaround time is defined as the usual number of days from the date of pickup of a specimen for testing to when the result is released to the ordering provider. In some cases, additional time should be allowed for additional confirmatory or additional reflex tests. Testing schedules may vary.
Related Documents	• Sample Report

SPECIMEN REQUIREMENTS

Specimen	Serum **or** plasma
Volume	1 mL
Minimum Volume	0.2 mL (**Note:** This volume does **not** allow for repeat testing.)
Container	Red-top tube, green-top (heparin) tube, **or** lavender-top (EDTA) tube
Collection	Separate serum or plasma from cells and transfer to a plastic transport tube.
Storage	Refrigerate.

Instructions	
Stability Requirements	<table><tr><th>Temperature</th><th>Period</th></tr><tr><td>Room temperature</td><td>14 days</td></tr><tr><td>Refrigerated</td><td>14 days</td></tr><tr><td>Frozen</td><td>14 days</td></tr><tr><td>Freeze/thaw cycles</td><td>Stable x3</td></tr></table>
Causes for Rejection	Gross hemolysis; use of yellow-top tube

TEST DETAILS

Use	Measurement of sTfR is used to diagnose iron deficiency in individuals with chronic disease (inflammatory diseases, infections, malignancies), many of whom are anemic.
Methodology	Immunochemiluminometric assay (ICMA)
Reference Interval	12.2–27.3 nmol/L
Additional Information	Anemia of chronic disease and iron deficiency anemia, the most common forms of anemia, are differentiated primarily by estimates of iron status. Standard measures of iron status, such as ferritin, total iron-binding capacity, and serum iron are directly affected by chronic disease. In contrast, soluble transferrin receptor (sTfR) is elevated in iron deficiency but is not appreciably affected by chronic disease. sTfR is elevated in subjects with hyperplastic erythropoiesis (eg, hemolytic anemia, beta-thalassemia, polycythemia, etc) and depressed in subjects with hypoplastic erythropoiesis (eg, chronic renal failure, aplastic anemia, or post-transplant anemia). Transferrin receptor (TfR) is the major mediator of iron uptake by cells. TfR is a transmembrane, disulfide-linked dimer of two identical subunits that binds and internalizes diferric transferrin, thereby delivering iron to the cell cytosol. When a cell needs iron, TfR expression is increased to facilitate iron uptake. Since the major use of iron is for hemoglobin synthesis, about 80% of total TfR is on erythroid progenitor cells. Soluble transferrin receptor arises from proteolysis of the intact protein on the cell surface, leading to monomers that can be measured in plasma and serum. Thus, the concentration of sTfR in

	plasma or serum is an indirect measure of total TfR. The serum level of sTfR reflects either the cellular need for iron or the rate of erythropoiesis. The concentration of sTfR in plasma or serum is elevated in iron deficiency. The concentration of sTfR in plasma or serum is correlated with erythron transferrin uptake, a ferrokinetic measure of erythropoietic activity.
References	Allen J, Backstrom KR, Cooper JA, et al. Measurement of soluble transferrin receptor in serum of healthy adults. *Clin Chem.* 1998 Jan; 44(1):35-39. PubMed 9550555 Khumalo H, Gomo ZA, Moyo VM, et al. Serum transferrin receptors are decreased in the presence of iron overload. *Clin Chem.* 1998 Jan; 44(1):40-44. PubMed 9550556 Mast AE, Blinder MA, Gronowski AM, Chumley C, Scott MG. Clinical utility of the soluble transferrin receptor and comparison with serum ferritin in several populations. *Clin Chem.* 1998 Jan; 44(1):45-51. PubMed 9550557 Skikne BS. Circulating transferrin receptor assay—coming of age. *Clin Chem.* 1998 Jan; 44(1):7-9. PubMed 9550551