



Transferrin Receptor, soluble, Human, BioAssay™ ELISA Kit (TfR1, TFRC, CD71, TR, Tfr, TfnrR, sTfR)

Catalog number

T8199-38

Supplier

United States Biological

Human sTfR ELISA is a sandwich enzyme immunoassay for the quantitative measurement of soluble human transferrin receptor in serum, plasma and tissue culture medium.

Elevation of the soluble transferrin receptor may be also caused by haemolytic anaemia, polycythaemia and thalassemia while aplastic anaemia and chronic renal failure may result in decrease. The most important clinical use of the sTfR determination is in the differential diagnosis between iron deficiency anaemia and the anaemia of chronic disease.

Principle

Standards, quality controls and samples of sera are incubated in microtitration wells coated with monoclonal anti-human sTfR antibody. After a thorough wash, monoclonal anti-human sTfR antibody labeled with horseradish peroxidase (HRP) is added to the wells and incubated with the immobilized antibody'sTfR complex. Following another washing step, the remaining HRP-conjugated antibody is allowed to react with the substrate H₂O₂ and tetramethylbenzidine. The reaction is stopped by addition of acidic solution, and absorbance of the resulting yellow color product is measured spectrophotometrically at 450nm. The absorbance is proportional to the concentration of sTfR. A standard curve is constructed by plotting absorbance values versus recombinant sTfR concentrations of standards, and concentrations of unknown samples are determined using this standard curve.

Specificity

Human soluble transferrin receptor

Sample Volume

100ul/well

Range

0.05-2ug sTfR /1ml of sample

Sensitivity

2ng/ml

Assay Time

The total assay time is less than 3 hours (incubation at the temperature of 30°C is necessary).

Kit Components

T8199-38A: Microtiter Strips, 1x 96 wells, coated with anti-Hu sTfR Mab

T8199-38B: Mab (HRP), 1x13ml

T8199-38C: Standard, 2ug/ml, 1x100ul



T8199-38D: Standard, 1ug/ml, 1x100ul
T8199-38E: Standard, 0.5ug/ml, 1x.100ul
T8199-38F: Standard, 0.2ug/ml, 1x100ul
T8199-38G: Standard, 0.1ug/ml, 1x100ul
T8199-38H: Standard, 0.05ug/ml, 1x100ul
T8199-38J: Quality Control, High, 50X, (5.5-8.3ug /ml), 1x50ul
T8199-38K: Quality Control, Low, 50X, (1.3-2.0ug/ml), 1x50ul
T8199-38L: Dilution Buffer, 2x13ml
T8199-38M: Wash Solution, 10X, 1x100ml
T8199-38N: Substrate Solution (TMB), 1x13ml
T8199-38P: Stop Solution (0.2M H2SO4), 1x13ml

Storage and Stability

Store kit at 4°C. Unopened kit components are stable for 6 months after receipt. Opened reagents are stable for 3 months when stored at 4°C. For maximum recovery of product, centrifuge the original vial prior to removing the cap.

Applications

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Storage

4°C

Tests

2ng/ml

Sensitivity

10ul/well

Sample Volume

serum, plasma, tissue culture

Sample Matrix

0.05-2ug sTfR /1ml of sample

Detection Range

Colorimetric

Antigen Modification

Human

Antigen Source

96

Reference

1. Cotton F. et al.: Measurement of soluble transferrin receptor by immunoturbidimetry and immunonefelometry. *Clinical Biochemistry*, 33, 263-267 (2000). 2. Cook J. D.: The measurement of serum transferrin receptor. *The American Journal of the Medical Sciences* 318, 269-276 (1999). 3. Olivares M. et al.: Usefulness of serum transferrin receptor and serum ferritin in diagnosis of iron deficiency in infancy. *American Journal of Clinical Nutrition* 72, 1191-1195 (2000) Suominen P. et al.:



Single values of serum transferrin receptor and transferrin receptor ferritin index can be used to detect true and functional iron deficiency in rheumatoid arthritis patients with anemia. *Arthritis & Rheumatism* 43, 1016–1020 (2000). 4. De Block C. E. M. et al.: Soluble transferrin receptor level. A new marker for iron deficiency anemia, a common manifestation of gastric autoimmunity in type 1 diabetes. *Diabetes Care* 23, 1384–1388 (2000). 5. Hikawa A. et al.: Soluble transferrin receptor-transferrin complex in serum: measurement by latex agglutination nephelometric assay. *Clinica Chimica Acta* 254, 159–172 (1996). 6. Flowers C. H. et al.: The clinical measurement of serum transferrin receptor. *Journal of Laboratory and Clinical Medicine* 114, 368–377 (1989)