

Serum Ferri Ion Content Assay Kit

Note: Take two or three different samples for prediction before test.

Operation Equipment: Spectrophotometer/microplate reader

Cat Number: BC1735

Size: 100T/96S

Components:

Reagent I: Powder×2, storage at 2-8°C. Add 7.5 mL distilled water before use. Once the reagent turns black, it cannot be used. Add 10 mL distilled water before use. The unused reagent can be stored at 2-8°C for 1 week.

Reagent II: Powder ×2, storage at 2-8°C. Add 235 μL glacial acetic acid and 7.5 mL distilled water before use. The unused reagent can be stored at 2-8°C for 1 week.

Standard Solution: Liquid 2 mL×1, 1000 μmol/L Fe³⁺ standard solution, storage at 2-8°C. Add distilled water dilute 8 times to form a standard solution of 125 μmol/L before use.

Product Description:

Serum iron is the iron bound with transferrin in blood, which is often used to distinguish non-iron deficiency anemia and iron-deficiency anemia

Fe³⁺ is reduced by sodium sulfite to Fe²⁺, which reacts with 2,2-dipyridine-bipyridine, have an absorption peak at 520 nm. According measure absorbance at 520 nm can reflect serum iron concentration.

Reagents and Equipment Required but Not Provided.

Spectrophotometer/Microplate Reader, Centrifuge, Micro Glass Cuvette/96 Well Flat-bottom Plate, Glacial Acetic Acid, Adjusted Transferpettor, Chloroform and Distilled Water.

Procedure:

1. Preheat the spectrophotometer or microplate reader for 30 min, adjust wavelength to 520 nm, set zero with distilled water.
2. Dilute Standard Solution to 125 μmol/L with distilled water.
3. Add reagents with the following list:

Reagent Name (μL)	Blank tube (A _B)	Test tube (A _T)	Standard tube (A _S)
Distilled water	125	-	-
Standard solution (125 μmol/L)	-	-	125
Serum (plasma)	-	125	-
Reagent I	125	125	125
Reagent II	125	125	125

Mix thoroughly, incubate in boiling water bath for 5 min, cooling liquid. Add 60 μL chloroform (required but not provided). Mix thoroughly, room temperature, 10000 rpm centrifuge for 10 min. Take 200 μL supernatant to micro glass cuvette/96 well flat-bottom plate. Measure absorbance at 520 nm. Recorded as A_B , A_T , A_S . The standard tube and blank tube only need to be measured 1-2 times.

Calculations

Serum iron($\mu\text{mol/L}$) = $[C_S \times (A_T - A_B) \div (A_S - A_B)] = 125 \times (A_T - A_B) \div (A_S - A_B)$

C_S : Fe^{3+} Standard solution, 125 $\mu\text{mol/L}$.

Note:

There is less iron in the serum, so the vessels (EP tubes) should be noted to avoid iron contamination.

Technical Specifications:

Minimum Detection Limit: 0.99 $\mu\text{mol/mL}$

Linear Range: 3.9-250 $\mu\text{mol/mL}$

Recent Product citations:

Shanshan Rao, Yin Hu, Pingli Xie, et al. Omentin-1 prevents inflammation-induced osteoporosis by downregulating the pro-inflammatory cytokines. Bone Research. March 2018.

Related products:

BC2860/BC2865 Serum Total Iron Binding Capacity(TIBC) Assay Kit

BC0720/BC0725 Blood Calcium Content Assay Kit