

Serum Ferri Ion Content Assay Kit

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

Operation Equipment: Spectrophotometer

Cat Number: AK0415

Size: 50T/48S

Components:

Reagent I: Powder×2, storage at 4°C . Add 10 mL distilled water before use.

Reagent II : Powder×2, storage at 4°C . Add 313 μL glacial acetic acid and 10 mL distilled water before use.

Standard Solution: Liquid 3 mL×1, 1000 μmol/L Fe³⁺ standard solution, storage at 4°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, centrifuge, glacial acetic acid, adjusted transferpettor, 1 mL glass cuvette, chloroform and distilled water.

Procedure:

1. Preheat the spectrophotometer 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	400		
Standard solution (125 μmol/L)			400
Serum(plasma)		400	
Reagent I	400	400	400
Reagent II	400	400	400

Mix thoroughly, incubate in boiling water bath for 5 min, cooling liquid. Add 200 μL chloroform (required but not provided). Mix thoroughly, room temperature, 10000 rpm centrifuge for 10 min. Take 700 μL supernatant to 1 mL glass cuvette. Measure absorbance at 520 nm. Recorded as A_B, A_T, A_S

Calculations

Serum iron ($\mu\text{mol/L}$)= $[\text{Cs} \times (\text{A}_T - \text{A}_B) \div (\text{A}_S - \text{A}_B)] = 125 \times (\text{A}_T - \text{A}_B) \div (\text{A}_S - \text{A}_B)$

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

Note:

1. There is less iron in the serum, so the vessels (EP tubes) should be noted to avoid iron contamination.
2. Reagent I and Reagent II are unstable. It needs to be prepared when the solution will be used, and the newly prepared reagent can only be used on the same day.
3. When $\text{A}_T - \text{A}_C > 0.5$, please dilute the Serum to appropriate concentration with distilled water.

Technical Specifications:

Minimum Detection Limit : 3.212 $\mu\text{mol/mL}$

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

Recent Product citations:

[1] 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:

AK0374/AK0373 Serum Total Iron Binding Capacity(TIBC) Assay Kit

AK0518/AK0517 Blood Calcium Content Assay Kit