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CheKine™ Micro Serum Zinc Assay Kit

Cat #: KTB2140 Size: 48 T/48 S 96 T/96 S

	Micro Serum Zinc Assay Kit		
REF	**Cat #:** KTB2140	LOT	**Lot #:** Refer to product label
	Detection range: 20-1,000 μmol/L		**Sensitivity:** 20 μmol/L
	Applicable samples: Serum		
	Storage: Stored at 4℃ for 6 months, protected from light		

Assay Principle

Zinc is one of the essential trace elements and also plays an important role in the metabolism of insulin and porphyrin. CheKine™ Micro Serum Zinc Assay Kit provides a simple method for detecting serum sodium concentration in serum sample. In the pH 8.5-9.5 solution, Zn^{2+} and the zinc reagent form a blue coordination compound with a maximum absorption peak at 620 nm.

Materials Supplied and Storage Conditions

Kit components	Size		Storage conditions
	48 T	96 T	
Reagent Ⅰ	14 mL	28 mL	4℃
Reagent Ⅱ	7 mL	14 mL	4℃
Reagent Ⅲ	Powder×1 vial	Powder×1 vial	4℃, protected from light
Standard	1 mL	2 mL	4℃

Note: Before formal testing, it is recommended to select 2-3 samples with large expected differences for pre-experiment.

Materials Required but Not Supplied

- Microplate reader or visible spectrophotometer capable of measuring absorbance at 620 nm
- 96-well plate or Microglass cuvette, precision pipettes, disposable pipette tips
- Centrifuge
- Deionized water, anhydrous ethanol

Reagent Preparation

Reagent Ⅰ: Ready to use as supplied. Equilibrate to room temperature before use. Store at 4℃.

Note: Reagent Ⅰ has a pungent odor, so it is recommended to experiment in a fume hood.

Reagent Ⅱ: Ready to use as supplied. Equilibrate to room temperature before use. Store at 4℃.

Working Reagent Ⅲ: Prepare reagent one day before use, add 7 mL anhydrous ethanol for 48 T and 14 mL anhydrous ethanol for 96 T to fully dissolve. Cover tightly and let stand overnight. The prepared reagent can be stored at 4°C, protected from light for about 1 month. If the color turns yellow, it has expired.

Note: The Reagent Ⅲ should be dissolved in shock for at least 30 min. If a small amount of particles are still insoluble, the test will not be affected.

Setting of Standard curves: Dilute the 1 mmol/L Standard to 1,000、500、200、100、50、20、10 μmol/L standard solution with deionized water, as shown in the following table.

Num.	Volume of 1 mmol/L Standard (μL)	Volume of Deionized Water (μL)	Standard Concentration (μmol/L)
Std.1	200	0	1,000
Std.2	100	100	500
Std.3	40	160	200
Std.4	20	180	100
Std.5	10	190	50
Std.6	4	196	20
Std.7	2	198	10

Notes: Always prepare fresh standards per use; Diluted Standard Solution is unstable and must be used within 4 h.

Sample Preparation

Serum: Tested directly.

Assay Procedure

1. Preheat the microplate reader or visible spectrophotometer for more than 30 min, and adjust the wavelength to 620 nm, visible spectrophotometer was returned to zero with deionized water.

2. Sample measurement (the following operations are operated in the EP tube).

Reagent	Blank Tube (μL)	Standard Tube (μL)	Test Tube (μL)
Serum	0	0	100
Standard	0	100	0
Deionized Water	100	0	0
Reagent Ⅰ	200	200	200
Mix well and centrifuge at 10,000 rpm for 10 min at room temperature.			
Supernatant	100	100	100
Reagent Ⅱ	100	100	100
Working Reagent Ⅲ	100	100	100

3. Mix well and kept at room temperature for 10 min. Add 200 μL into a 96-well plate or microglass cuvette and the absorbance value is measured at 620 nm. The blank well is recorded as A_{Blank}, the standard well is recorded as $A_{Standard}$, and the test well is recorded as A_{Test}. Finally calculate $\Delta A_{Test}=A_{Test}-A_{Blank}$, $\Delta A_{Standard}=A_{Standard}-A_{Blank}$.

Note: Blank well only needs to measure 1 time. In order to guarantee the accuracy of experimental results, need to do a pre-experiment with 2-3 samples. If ΔA_{Test} is less than 0.01, the sample volume can be appropriately increased. If ΔA_{Test} is greater than 2.0, the sample can be further diluted with Extraction Buffer before proceeding with the experiment, and the

final dilution factor should be taken into account in the calculations. After adding Working Reagent III and mix well, complete the measurement of the tube within 30 min.

Data Analysis

1. Drawing of standard curve

With the concentration of the standard solution as the y-axis and the $\Delta A_{Standard}$ as the x-axis, draw the standard curve.

2. Calculation of the concentration of serum zinc

Bring the ΔA_{Test} of the sample into the equation to get the y value (μmol/L).

Note: If the sample is further diluted, it needs to be multiplied by the further dilution factor n.

Typical Data

Typical standard curve:

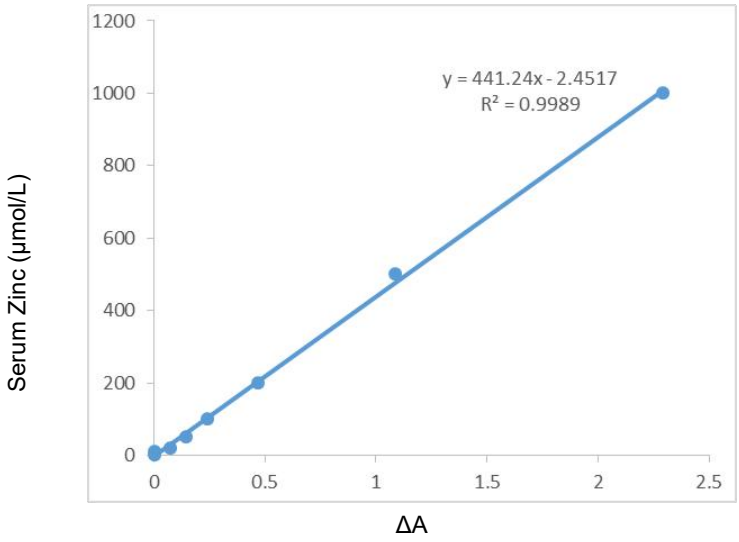

Figure 1. Standard curve for Serum Zinc.

Recommended Products

Catalog No.	Product Name
KTB2130	CheKine™ Micro Serum Sodium Assay Kit

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes. For your safety and health, please wear a lab coat and disposable gloves.