# Zinc Ion Test Kit

**(Cat/No.:BC023 Size:R1:40ml,R2:5ml)**

## 1. Package Specification

Reagent 1: 40mL×1 bottle, store at 4°C.

Reagent 2: 5mL×1 bottle, store at 4°C.

Calibrator×1 bottle (concentration see label), store at 4°C.

## 2. Test principle (Zn, PAPS colorimetric method)

Zinc ions in the sample react with nitro-PAPS in an alkaline solution, and the resulting complex exhibits a maximum absorption peak at 570 nm. Cu and iron ions in the sample can be eliminated by adjusting the Phhe concentration and adding a chelating agent daily.

## 3. Storage conditions and expiration date

Reagent 2~ 8℃ Stable for 12 months when stored away from light.

## 4. Applicable instruments

Various types of spectrophotometers or ELISA readers.

## 5. Sample Request

The sample must be clear and transparent to avoid hemolysis.

## 6. Test Method

1. Microplate reader operation method:

| | blank well | Standard well | Measure well |
|---|---|---|---|
| Deionized water (μL) | 12 | | |
| Calibrator (μL) | | 12 | |
| sample (μL) | | | 12 |
| Reagent 1 (μL) | 200 | 200 | 200 |
| Mix well and incubate at 37°C for 5 minutes. | | | |
| Reagent 2 (μL) | 50 | 50 | 50 |
| Mix well and incubate at 37°C for 5-10 minutes. Read the absorbance value A of each well at 570nm using an ELISA reader. Calculate ΔA = A sample well (or A calibration well) - A blank well. | | | |

Note: When operating the microplate reader, after adding reagent 2, you need to use a pipette to repeatedly blow and mix the reaction solution in each well, or repeatedly shake the plate, but be careful not to generate air bubbles.

2 . Spectrophotometer operation method:

| | Blank tube | Standard tube | Sample tube |
|---|---|---|---|
| Deionized water (μL) | 48 | | |
| Calibrator (μL) | | 48 | |
| sample (μL) | | | 48 |
| Reagent 1 (μL) | 800 | 800 | 800 |
| Mix well and incubate at 37°C for 5 minutes. | | | |
| Reagent 2 (μL) | 200 | 200 | 200 |
| | | | |
| Vortex mix, incubate in a 37℃ water bath for 5-10 minutes, zero with deionized water, use a 1cm optical path, and read the absorbance value A of each tube at 570nm using a spectrophotometer. Calculate ΔA = A sample tube (or A calibration tube) - A blank tube. | | | |

**3. Calculation formula:**

$$\text{Zinc ion concentration (μmol/L)} = \frac{A_{Measured}}{A_{Standard}} \times C_{Standard}$$

## 7. Product Performance Indicators

Reagent blank absorbance: A630nm(1 .0cm) ≤ 0. 2;

Linear range: 0~76.8μmol/ L (basis of determination: r2 ≧ 0.995);

Accuracy: Relative deviation ≤15.0%;

Precision: intra-batch CV ≤ 4.0%; inter-batch relative extreme ≦ 6.0%

Sensitivity: When measuring analyte at 13.9 μmol/L, the absorbance difference is ≥0.02 (1 cm optical path).

## 8. Notes

1. Color or turbidity in the sample can interfere with the results. You can try to make a sample control (i.e., follow the

procedure for the measurement well (tube), replace reagents one and two with an equal amount of physiological saline, mix with the sample, allow the reaction to proceed normally, and finally take the reading. When calculating, the

absorbance value of the sample control well (tube) needs to be subtracted from ΔA of the sample, and then substituted into the formula to calculate) to eliminate interference (this method cannot eliminate interference 100%, but it can

make the results closer to the true value when the sample interference is severe).

2. The ratio of reagents and samples can be adjusted proportionally according to the dosage of the instrument.

3. If the result exceeds the linear range, please dilute the specimen with deionized water and multiply the result by the dilution factor.

4. If the wavelength required by this kit is not available in the instrument, choose a close wavelength.

5. This method does not require sample deproteinization and sample blank.

6 . If the reagent is accidentally splashed on human surface such as skin, eyes, etc., it must be rinsed with water, and if it is accidentally ingested, it is necessary to go to the hospital for treatment.

7. The products are free of toxic and biohazardous substance