Zinc Content Assay Kit (5-Br-PADAP, Micro Method)

Z1509014

Storage 2-8°C. Protect from light.

Shipping Shipped with ice packs. Please store under the specified storage conditions immediately upon receipt.

Introduction

Zinc is one of the essential trace elements and plays an important role in insulin and porphyrin metabolism. This kit is suitable for detecting zinc levels in serum, plasma, urine, and milk.

The detection principle of this kit is as follows: under specific pH conditions, zinc ions form a stable, colorimetric complex with 5-Br-PADAP, the intensity of which is directly proportional to the concentration of zinc ions.

Kit Contents

Z1509014	Components	Appearance	100T	Storage	Quantity Per Test
Z1509014A	Protein Precipitator	Liquid	10 mL	2-8℃. Store in the dark.	As needed
Z1509014B	Chromogenic Agent	Liquid	100 μL	2-8℃. Store in the dark.	1 μL
Z1509014C	Buffer Solution	Liquid	20 mL	2-8℃	200μL
Z1509014D	Standard Solution (1.54 mmol/L)	Liquid	1 mL	2-8℃. Store in the dark.	As needed

Instructions for Use

1. Preparation of Sample Supernatant

Mix the sample with protein precipitation reagent in a 1:1 ratio, centrifuge at 4°C and 13,780 × g for 10 minutes, then collect the supernatant for testing.

Note: The supernatant after centrifugation must be clear. If turbidity is present, transfer the turbid supernatant to a new centrifuge tube and centrifuge again.

2. Preparation of standards

Using deionized water, dilute the standard solution (1.54 mmol/L) to 0, 1.54, 7.7, 15.4, 23.1, 30.8, 38.5, and 46.2 μmol/L according to the table below.

Serial Number	1	2	3	4	5	6	7	8
Concentration (μmol/L)	0	1.54	7.7	15.4	23.1	30.8	38.5	46.2
Standard solution (μL)	0	1	5	10	15	20	25	30
Deionized water (μL)	1000	999	995	990	985	980	975	970

3. Preparation of Chromogenic Working Solution

Mix Chromogenic Agent and Buffer Solution at a volume ratio of 1:200. Prepare immediately before use.

4. Sample Measurement

Carry out the sample measurement according to the table below (with the reaction taking place in a 96-well plate).

Reagent name	Standard well	Sample well
Sample (μL)	-	50
Standard solutions of different concentrations (μL)	50	-
Chromogenic Working Solution (μL)	200	200

Mix well, incubate for 5 min, then measure the OD value at 560 nm using a microplate reader.

5. Result calculation

Standard curve equation: y = ax + b

Zinc Content Calculation: Zinc content (μmol/L) = (ΔA - b) / a × 2* × f

y: measured OD value minus blank OD value (OD at zero standard concentration);

x: standard concentration;

a: slope of the standard curve;

b: intercept of the standard curve;

ΔA: Sample OD value - blank OD value (OD value at standard concentration = 0);

2*: Dilution factor during sample pretreatment;

f: dilution factor applied to the sample prior to addition into the assay system.

Precautions

1. The sample must not cause hemolysis; metal chelating agents such as EDTA and citrate cannot be used as anticoagulants.
2. The used containers and reagents should be free from zinc ion contamination.
3. Before the formal test, it is recommended to select 2-3 samples with significant expected differences for a preliminary experiment.
4. For your safety and health, please wear a lab coat and latex gloves during the operation.