Bradford Protein Quantification Kit

Description

The Bradford assay is a classic method for measuring protein concentration. It is widely used for rapid quantification of protein samples, offering advantages such as high sensitivity, simple operation, low cost, and fast speed.
The principle of the Bradford Protein Quantification Kit is based on the absorbance change of Coomassie Brilliant Blue G-250 dye when it binds to proteins. Under acidic conditions, the dye changes from red to blue, and specifically binds to basic amino acid residues in proteins (such as arginine and lysine). Upon forming this complex, the maximum absorption wavelength of the dye shifts from 465 nm to 595 nm. The change in absorbance is proportional to the protein concentration and can therefore be used for protein quantification.

Product Information

Taking 500 T packing as example:

Catalog No.	Product Name	Packing
C0185-1	Bradford Protein Staining Solution	125 mL
C0185-2	Bovine Serum Albumin Standard	5 mg

Features

- **High sensitivity:** minimum detectable protein amount reaches 0.625 μg, suitable for rapid detection of low-concentration samples.
- **Wide linear range:** demonstrates good linearity within 0.125–1.5 mg/mL.
- **Fast detection:** one-step sample addition with the entire detection completed within 10 minutes, suitable for rapid screening and high-throughput assays.
- **Strong compatibility:** not affected by most chemical substances in samples, especially reducing agents; compatible with up to 1 M β-mercaptoethanol and 5 mM DTT.

Note: The kit is affected by slightly higher concentrations of detergents; Please ensure SDS is below 0.01%, Tween-20/60/80 below 0.015%, and Triton X-100 below 0.05%.

Application

Rapid quantification of cell lysates; Tissue extracts; Purified protein samples.

Instructions

Preparation of Protein Standards

1. Add 1 mL of protein diluent to a vial containing 5 mg of BSA protein standard. Mix thoroughly to dissolve and prepare a 5 mg/mL protein standard solution. After preparation, the solution can be stored long-term at −20°C. It is recommended to aliquot to avoid repeated freeze–thaw cycles.

Note: The protein diluent should ideally be the same buffer as the sample solution. Alternatively, 0.9% NaCl or PBS can be used as the protein diluent.

2. Dilute the 5 mg/mL protein standard solution according to the table below to prepare a series of protein standards with the following concentrations: 0, 0.125, 0.25, 0.5, 0.75, 1, and 1.5 mg/mL.

Well No.	Diluent（μL）	Standard Solution（μL）	Standard Concentration（mg/mL）
1	70	5 mg/mL BSA Solution 30 μL	1.5
2	30	Take 60 μL from well 1	1
3	20	Take 60 μL from well 2	0.75
4	30	Take 60 μL from well 3	0.5
5	60	Take 60 μL from well 4	0.25
6	60	Take 60 μL from well 5	0.125
7	60	0	0

Protein Concentration Determination

1. Add 5 μL of protein standards with gradient concentrations into the standard wells of a 96-well plate.
2. Add 5 μL of each sample into sample wells. If the sample volume is less than 5 μL, supplement with protein diluent to a total volume of 5 μL.
3. Add 250 μL of Bradford Protein Staining Solution to each well.
4. Within 2 hours, measure the absorbance at 595 nm using a microplate reader.
5. Plot the standard curve based on the absorbance values of the BSA standards (X-axis: protein concentration, mg/mL; Y-axis: A595). Calculate the protein concentration of the samples according to the standard curve and the dilution factor.

Storage

Store at 4 °C for one year.

Store the product at -20 ℃ for one year after preparing into a solution.

Precautions

1. Before use, it is recommended to bring the Bradford Protein Staining Solution to room temperature to improve detection sensitivity.
2. Mix the Bovine Serum Albumin Standard thoroughly before use.
3. The product is for R&D use only, not for diagnostic procedures, food, drug, household or other uses.
4. Please wear a lab coat and disposable gloves.