BCA Protein Assay Kit

Cat# A1035 – 500mL | Storage at 4˚C

Description

The Dilution-Free Rapid Enhanced BCA Protein Assay Kit is meticulously developed based on the widely recognized BCA protein detection method, providing advantages such as ease of operation, high stability, sensitivity, and broad compatibility. Compared to traditional BCA protein assay kits, this enhanced kit enables faster colorimetric reactions, completing the detection within just 10 minutes at room temperature. Sensitivity is significantly improved, achieving a detection limit as low as 10 μg/mL, with a minimum detectable protein amount of 0.2 μg per assay, and requiring only 1–20 μL of sample. Additionally, the kit includes eight ready-to-use protein standards of varying concentrations, eliminating the need for additional dilution, effectively reducing experimental errors, and enhancing assay efficiency and reliability.

Features

- **Dilution-free:** Pre-diluted protein standards simplify operation and reduce errors.
- **Rapid:** Colorimetric reaction completed in 10 minutes at room temperature.
- **High sensitivity:** Detection limit of 10 μg/mL, minimum detectable protein amount of 0.2 μg.
- **Wide linear range:** 20~2,000 μg/mL.
- **Multi-wavelength compatible:** Detection possible at 560, 595, and 600 nm; suitable for microplate readers and spectrophotometers.
- **Stable:** Stored at room temperature with a shelf life of 2 years.

Kit Components

Product code	A1035-0500	A1035-2500
Assay number	500T	2500T
BCA Reagent A	100mL	500mL
BCA Reagent B	2×2mL	15mL
Pre-diluted BSA Protein Standard Set	1 set	5 Set
BSA Standard Dilution Buffer	10mL	5×10mL

*Pre-diluted BSA standards at concentrations: 0, 125, 250, 500, 750, 1,000, 1,500, and 2,000 μg/mL.

Preparation Instructions

- **Protein Standard Solution Preparation and Storage**
  Dissolve lyophilized standards in 1 mL dilution buffer per tube. After reconstitution, store sealed at 2-8°C for up to 1 year or aliquot and store at -20°C for up to 2 years.

- **Working Solution Preparation**
  Mix Reagent A with Reagent B at a 50:1 volume ratio, prepare fresh as needed (e.g., 40 μL Reagent B into 2 mL Reagent A). Store working solution at room temperature for up to one week, protected from direct light.

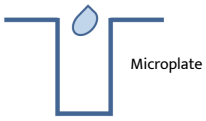
- **Sample and Working Solution Ratio**
  Recommended ratios of sample to working solution are 1:10 or 1:20. For 96-well microplates, use 20 μL sample with 200 μL working solution per well (1:10). For cuvette assays, use 50 μL sample with 1 mL working solution (1:20).

Microplate (200 µL) Assay Procedure

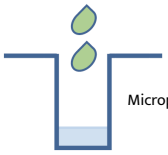
1. Add 20 µL standard or sample per well.
2. Add 200 µL working solution and mix thoroughly.
3. Incubate at room temperature (20-25°C) for 10 minutes.
4. Measure optical density (OD) at 560 nm (or within the range of 500-600 nm).

Microplate Operation Illustration

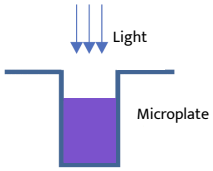
(1) Add 20 µL of standard or sample solution to each microplate well.



(2) Add 200 µL of working solution to each well, then mix thoroughly.



(3) Incubate at room temperature for 10 minutes, and measure absorbance at 560 nm.

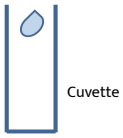


Cuvette (1 mL) Assay Procedure

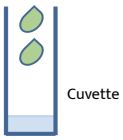
1. Add 50 µL standard or sample into labeled tubes.
2. Add 1 mL working solution and mix thoroughly.
3. Incubate at room temperature (20-25°C) for 10 minutes, or at 37°C for 30 minutes, then cool to room temperature.
4. Transfer solutions into cuvettes and measure OD at 560 nm (or within 500-600 nm).

Cuvette (1 mL) Operation Illustration.

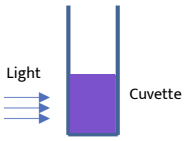
(1) Add 50 µL of standard or sample solution into the cuvette.



(2) Add 1 mL of working solution into the cuvette and mix thoroughly.

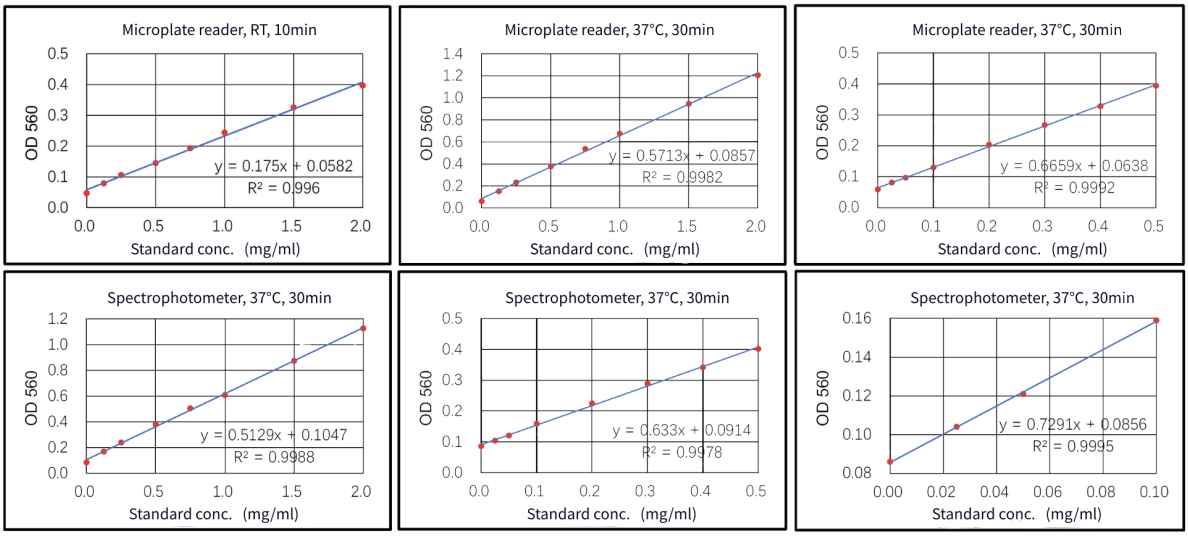


(3) Incubate at 37°C for 30 minutes, then measure absorbance at 560 nm.



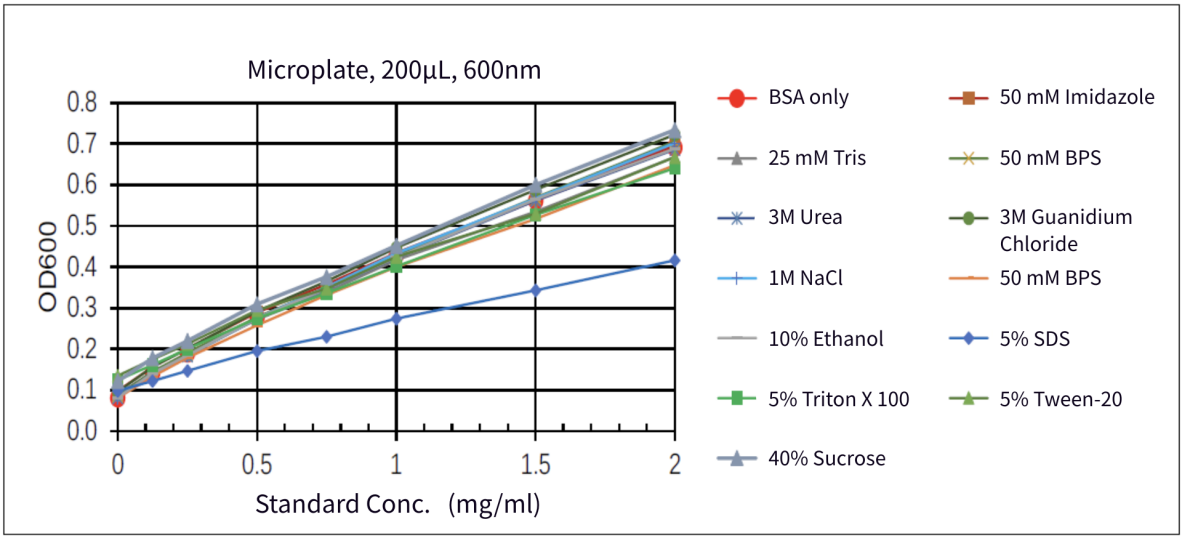
Calculation of Results

Construct a standard curve using the measured OD values of the standards to derive the equation: y = ax + b (y = OD value, x = concentration). Calculate sample protein concentration using: x' = (y' – b)/a, adjusting the final concentration by the dilution factor.



Important Notes

- Always prepare fresh standard curves simultaneously with samples.
- Ensure coefficients a and b have sufficient significant figures (3-4 significant figures).
- Avoid interference from reducing agents (e.g., cysteine, DTT, 2-mercaptoethanol, glutathione, ascorbic acid) and chelators like EGTA.
- Tolerated substances : imidazole (50 mM), Tris (25 mM), PBS (50 mM), urea (3 M), guanidine hydrochloride (3 M), NaCl (1 M), EDTA (10 mM), ethanol (10%), sucrose (40%), Triton X-100 (5%), Tween-20 (5%). (All except 5% SDS show negligible interference).
- Optimal detection at 560 nm, though other wavelengths (e.g., 595 nm or 600 nm) may also provide reliable results if standards and samples are measured under identical conditions.



Incubate at 37ºC for 30 minutes, then measure absorbance at 560 nm.