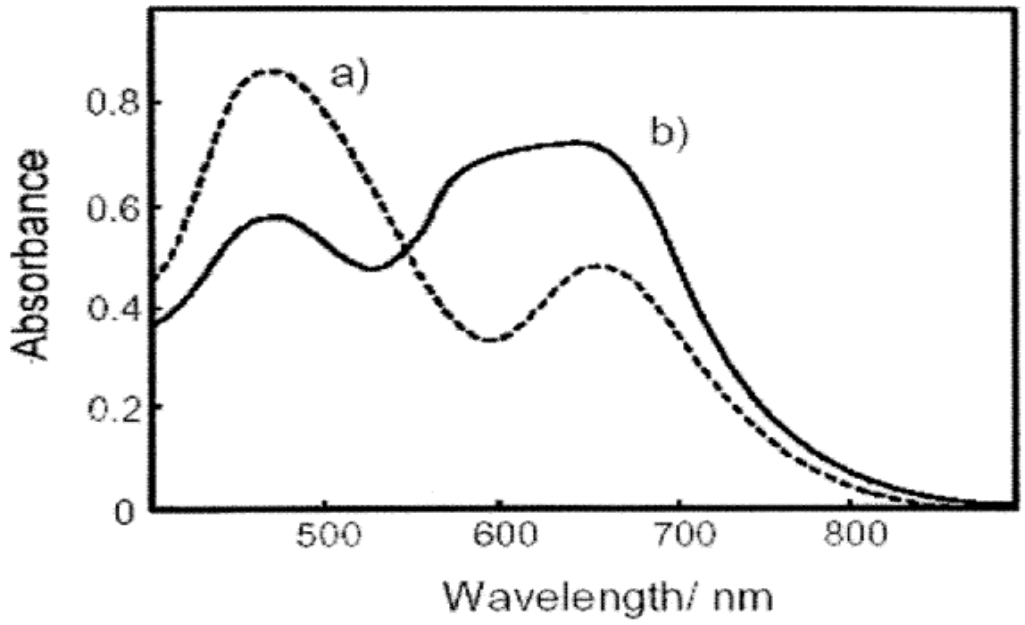
51254 PROTEIN QUANTIFICATION KIT-Rapid

Application

Protein Quantification Kit-Rapid is based on Coomassie Brilliant Blue G, which interacts with protein and stains blue under acidic conditions. The maximum change in the absorbance by interaction with protein is at 595 nm. The staining reaction is completed within 1 min and color is stable for 30 min. Therefore, protein concentration can easily be determined within a few minutes by colorimetric detection. This kit is suitable for microplate assay. The protein detection range is from 10 µg/ml to 5000 µg/ml by standard method, and is from 0.1 µg/ml to 50 µg/ml by micro method. Since the sensitivity of CBB-based protein assay depends on the type of proteins, please note the protein-to-protein variation in quantification.

Figure 1. Absorption spectrum of CBB with (10 µg BSA/ml) and without protein



Content

CBB Solution ..... 100 ml x 2 bottles
BSA Standard Solution (4000 µg/ml) ... 1.5 ml x 1 vial
Sufficient for 500 tests

Required Equipments and Materials

Microplate reader (600 nm filter)
96 well microplates
10 µl, 100-200 µl pipettes
multi channel pipette
1.5 ml tubes

Substance	Concentration
Sodium chloride	2 M
Potassium chloride	2 M
Sodium acetate	0.4 M
Sodium bicarbonate	0.1 M
Buffer	
Citrate pH 5.0	0.125 M
MES pH 6.1	0.125 M
Tris pH 7.4	0.0625 M
PBS	no interference
HEPES pH 7.5	0.125 M
CHES pH 9.0	0.125 M
Glucose	2 M
Glutatione	0.04 M
Ascorbic acid	0.4 M
Dithiothreitol	1 M
2-Mercaptoethanol	1.3 M

Protein-to-Protein Variation

This kit determines the protein concentration of sample solution using BSA as a standard solution. Therefore, the concentration determined is not an absolute protein concentration.

Table 2: Protein-to-protein variation in quantification

Protein	Protein vs. BSA
BSA	1.00
Chymotrypsinogen A	0.67
Transferrin	1.02
Human IgG	0.96

Notes

1) Since the sensitivity of CBB-based protein assays depends on the type of proteins, please note the protein-to-protein variation in quantification (Table 2). For more accurate quantification, use the same protein, which you want to measure, as the standard.
2) Since CBB Solution is highly acidic, please handle with care.
3) If a protein concentration of a sample is too high, some protein may precipitate from the mixed solution with CBB Solution. Dilution of the sample solution is required prior to mixing with CBB Solution if the protein concentration is too high.
4) Please determine the amounts of interfering materials contained in the sample solution (see Table 1). If the amount of interfering materials is too high, dilute it to reduce the concentration of interfering materials prior to use.

Storage

Store the kit at 0-5°C. CBB Solution is stable for 12 months at 0-5°C and 6 months at room temperature. Though the plastic surface of the CBB Solution bottle may gradually be stained, the background OD of CBB Solution does not increase during the storage at 0-5°C.

References

1) Bradford, M. M., Anal. Biochem., **72**, 248 (1976).
2) Splittgerber, A. G. and Sohl, J., Anal. Biochem., **179**, 198 (1989).
3) Pande, S. V. and Murthy, S. R., Anal. Biochem., **220**, 424 (1994).

8) Transfer the mixed solution to a cell, and measure the absorbance of the solution at 600 nm using a spectrophotometer.
9) Determine the protein concentration of the sample solution using the calibration curve.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.