Use Agilent Cary 60 to determine protein concentration (BSA) using only 4 µL of solution

Data Sheet

Introduction

Modern labs are increasingly looking for time efficient methods of protein estimation. The Agilent Cary 60 UV-Vis spectrophotometer combined with an ultra-microvolume cuvette provides a convenient and easy to use platform for the direct measurement of microvolume (down to 3 µL) quantities of protein samples without dilution. The method is non-destructive allowing recovery of precious samples and cleaning is easy. The mirrored ultra-microvolume cuvette caps come in two sizes (1.0 mm and 0.2 mm path length) extending the concentration range of this instrument/accessory combination. And, compared to existing methods to measure ultra small volumes, which can be grossly inaccurate or unrepeatable due to limitations in the instrumentation used, the Cary 60 provides the highest quality of data in both accuracy and reproducibility to ensure that you get the right answer every time!

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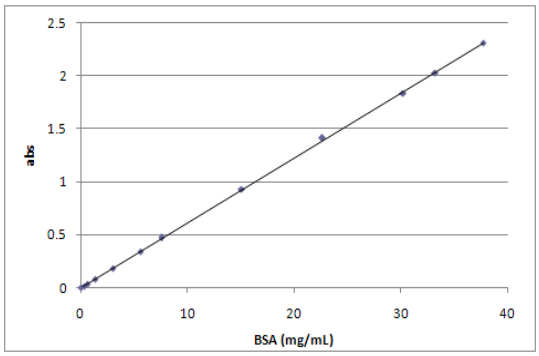
Materials

- BSA protein (Sigma 9048-46-8)
- Ultra-microvolume cuvette with 1.0 mm mirrored cap
- Agilent Cary 50 or Cary 60 UV-Vis

Photometric Linearity

When combined with the Agilent Cary 50 or Cary 60 UV-Vis, the ultra-microvolume cuvette delivers superb photometric linearity to 2.3 Abs, equivalent to 23 Abs (using the 1.0 mm cell cap) and 115 Abs (using the 0.2 mm cap). This allows direct measurement of BSA protein samples from 0 to 190 mg/mL without time-consuming dilutions.



	Standard cuvette	Ultra-microvolume cuvette	
Path length	**10 mm**	**1.0 mm**	**0.2 mm**
Max. measured Abs	3.3 Abs	2.3 Abs	2.3 Abs
Equivalent Abs	3.3 Abs	23 Abs	115 Abs

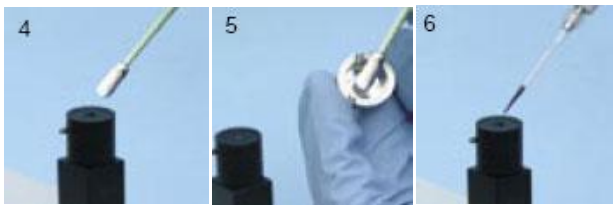
NOTE: Equivalent Abs is the absorbance value calculated for a 10 mm path length. The benefit of being able to measure up to 115 Abs is that highly concentrated DNA or protein solutions can be measured – eliminating dilutions.

Fully Flexible Solution

For measurement of dilute samples using a standard 10 mm path length cuvette is recommended, extending the limit of detection to 0.001 mg/mL, and are available in a range of volumes from 40 µL to 3.0 mL. As most bio-labs perform a wider range of measurements, the Cary 60 can be fitted with automated multicell changers as well as temperature controlled cuvette holders, for performing enzyme kinetics studies. Components are easily interchangeable making the Agilent Cary 60 UV-Vis the preferred choice for routine biological UV-Vis measurements.

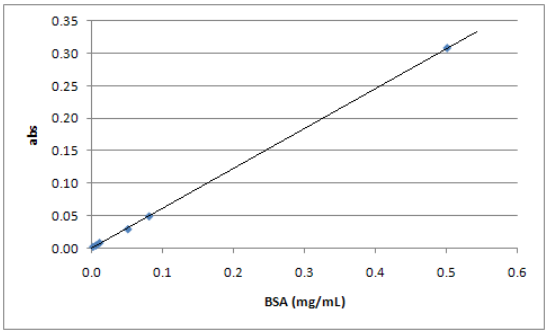
Cleaning

The ultra-microvolume cuvette offers easy sample loading and cleaning with no sample carryover. Simply wipe clean with a lint free swab and load your next sample with a pipette. This eliminates often time consuming cleaning procedures with more conventional cuvettes.



Limit of Detection

Only the Agilent Cary 50 and Cary 60 UV-Vis offers the flexibility to change to a 10 mm path length extending the limit of detection of BSA from as low as 0.001 mg/mL up to 190 mg/mL!



Ordering Information

Product	Part Number
Cary 60 UV-Vis with WinUV software and PC	G6860AA
Ultra-microvolume cuvette	G6871A
Add 0.2mm path length lid	G6871A#100

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