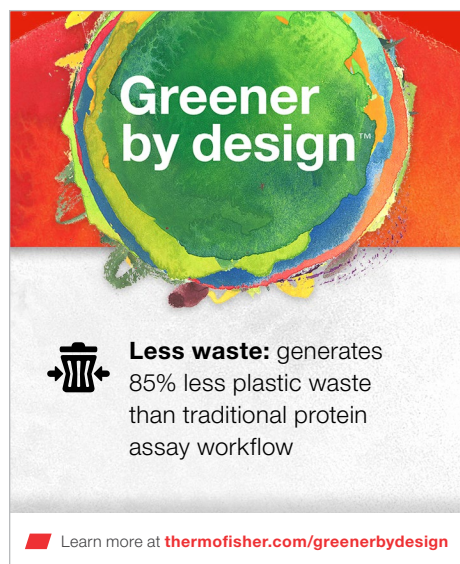


Qubit Protein BR Assay Kit



Introduction

We are committed to designing our products with the environment in mind. This fact sheet provides the rationale behind the environmental claim that the Invitrogen™ Qubit™ Protein BR Assay Kit (Figure 1) generates 85% less plastic waste relative to traditional protein quantitation assay methods such as the Bradford assay.

Product description

Protein quantitation is an integral part of many protein biology workflows and a necessary step before commonly used techniques such as protein electrophoresis, western blotting, mass spectrometry, and immunoassays. The Qubit Protein BR Assay is a fluorometric assay that combines accuracy, compatibility, and ease of use, enabling easier and faster determination of protein concentration. It is optimized for the Invitrogen™ Qubit™ 4 Fluorometer—a small, economical, user-friendly instrument capable of running highly sensitive fluorescence-based assays.

The Qubit Protein BR Assay is designed to work with a wide range of sample concentrations. It is compatible with samples that contain up to 5% detergent and with commonly used reducing agents. It can also be performed with many regularly used buffers and tolerates contaminants found in typical protein analysis buffers. The assay is easy to perform and only requires a 10-minute incubation at room temperature, eliminating the need to wait for long incubation periods or expose samples to elevated temperatures.

Green feature

Less waste

A traditional protein quantitation assay, such as the Bradford assay, typically requires a 5- to 7-point standard curve for quantitation. This adds to the time and plastic materials (tips, tubes, and cuvettes) needed to perform the assay. The Qubit Protein BR Assay only requires setup of two standards. The assay protocol (Figure 2) shows the simple workflow with the reduced number of standards. A comparison of the Qubit Protein BR Assay against a traditional Bradford protein quantitation assay showed that the Bradford assay generated ~70.3 g of plastic waste, compared to ~10.8 g with the Qubit Protein BR Assay (Table 1).



Figure 1. Qubit Protein BR Assay Kit.

This represents an 85% reduction in plastic waste. Performing the assay every week over the course of one year would translate to a total of 3 kg of plastic waste avoided annually by choosing the Qubit assay over the Bradford assay.

Designing the Qubit Protein BR Assay Kit to generate significantly less plastic waste is a win for our customers, our company, and the planet.

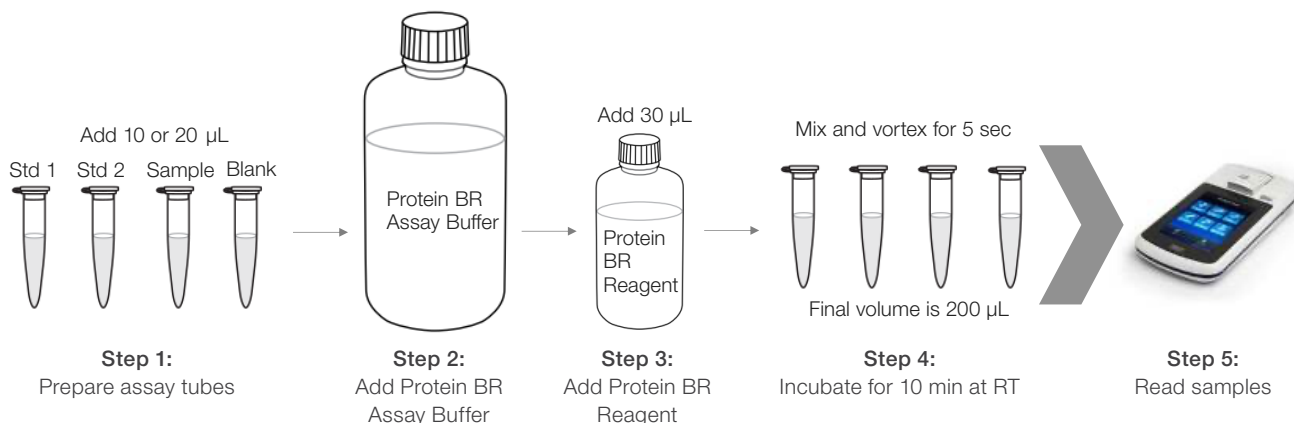


Figure 2. Qubit Protein BR Assay protocol.

Table 1. Comparison of waste generated using a traditional Bradford protein quantitation assay and the Qubit Protein BR Assay.*

Traditional Bradford assay		
Step in procedure	Plastics used	Total weight (g)
1. Reconstitute standard	One 5,000 µL tip	4.3
2. Prepare dye dilution	One 15 mL conical tube	6.7
	Two 1,000 µL tips	1.7
3. Prepare standards	Five microtubes	4.5
	Ten 1,000 µL tips	8.6
4. Prepare standards and unknowns (duplicates)	Eight 1,000 µL tips	6.9
	Sixteen disposable cuvettes	35.2
5. Add dye and measure	Eight 200 µL tips	2.4
Total plastic waste generated		70.3
Qubit Protein BR Assay		
Step in procedure	Plastics used	Total weight (g)
1. Prepare standards	Three 200 µL tips	0.9
	Three microtubes	2.7
2. Prepare unknowns	Three 200 µL tips**	0.9
	Three microtubes	2.7
3. Prepare buffer and reagent	Twelve 200 µL tips	3.6
Total plastic waste generated		10.8
Reduction in waste generated compared to traditional Bradford assay		85%

* Estimate based on analyzing three unknown samples.

** A smaller-volume tip may be used with the Qubit Protein BR Assay, depending on the sample volume used.

Find out more at thermofisher.com/qubitprotein

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