

PROTEIN QUANTITATION

RC DC™ Protein Assay

- Novel chemistry — allows protein quantitation with reducing agents and detergents
- Excellent linearity — accuracy across a wide range
- Time savings — no extra sample preparation or buffer exchange required

Standard Curve Linearity With Mixtures of Reducing Agents and Detergents

Introduction

The *RC DC* protein assay is a colorimetric assay for determining protein concentration in the presence of both reducing agents and detergents. The *RC DC* protein assay has all the unique capabilities of the original *DC*™ protein assay, in addition to covering a broader range of reagents. This assay is based on a modification of the Lowry protocol (Lowry OH et al., J Biol Chem 193, 265–275, 1951).

Is This Assay for You?

- Yes, whenever you want protein quantitation in the presence of both reducing agents and detergents
- Yes, if you want to determine protein quantitation in sample loading buffer prior to performing gel electrophoresis either in 1-D or 2-D formats
- Yes, if you want to quantitate protein recovery in cell lysis buffer after harvest

Compatibility

The *RC DC* protein assay is both reducing agent compatible (RC) and detergent compatible (DC). Protein quantitation can be performed directly in complex mixtures, including Laemmli buffer and Bio-Rad's line of ReadyPrep™ sample prep kits and reagents.

Linearity

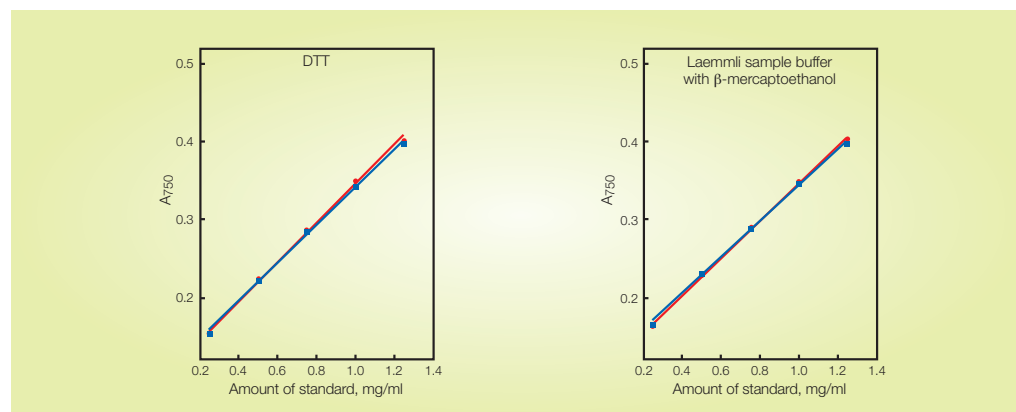
Linear response is achievable over a wide range of protein concentration, 0.2–1.5 mg/ml.

Time Savings

Without cumbersome sample preparation or buffer exchange steps, protein concentration can be determined using one simple protocol.

Convenience

The *RC DC* protein assay kit provides all necessary reagents for 500 standard assays or 2,000 microtube assays.



Standard curves generated with carbonic anhydrase in water vs. in presence of reducing agents. Left, 350 mM DTT; right, Laemmli sample buffer with 5% β -mercaptoethanol. Red, water; blue, reducing agents. (Data points are averages for triplicates; error bars showing standard deviations are smaller than symbols.)

BIO-RAD

The **RC DC** protein assay is compatible with Bio-Rad's line of ReadyPrep sample prep kits as well as the following reagents:

- Laemmli buffer (with 5% β -mercaptoethanol)
- Dithiothreitol (DTT), 350 mM
- β -mercaptoethanol, 10%
- Tributylphosphine (TBP), 2 mM
- CHAPS, 2%
- Tween 20, 2%
- Triton X-100, 2%
- EDTA, 100 mM
- Imidazole, 500 mM
- Tris, pH 8.4, 500 mM
- NaOH, 2.5 mM



The **RC DC** protein assay kit consists of three components. Each component and reagent can be purchased separately.

Component 1: **RC** reagents package

- RC reagent I, 250 ml
- RC reagent II, 250 ml

Component 2: **DC** protein assay reagents package

- DC reagent A, 250 ml
- DC reagent B, 2 L
- DC reagent S, 5 ml

Component 3: protein standard I or protein standard II

RC reagents are designed to work with **DC** reagents in the presence of reducing agents and detergents. If only detergents are present in sample solution, perform the **DC** protein assay.

Disposable Cuvettes

Disposable cuvettes are ideal for protein assays. Optically clear on two sides, disposable cuvettes can be used as mixing vessels and then used directly in the spectrophotometer.



SmartSpec™ Plus Spectrophotometer

For protein quantitation, use the SmartSpec Plus spectrophotometer, a scanning wavelength UV/visible spectrophotometer that measures absorbance from 200 to 800 nm. Ideal for protein assays, it features built-in functions for Lowry and Bradford protein assays. To learn more about the space-saving, budget-conscious SmartSpec Plus, request bulletin 2826.



Ordering Information

Catalog #	Description
500-0121	RC DC Protein Assay Kit I, includes RC reagents package, DC protein assay reagents package, bovine γ -globulin standard; 500 standard assays
500-0122	RC DC Protein Assay Kit II, includes RC reagents package, DC protein assay reagents package, bovine serum albumin standard; 500 standard assays
500-0120	RC DC Protein Assay Reagents Package, includes RC reagents package and DC protein assay reagents package; 500 standard assays
500-0119	RC Reagents Package, includes RC reagent I (250 ml) and RC reagent II (250 ml); 500 standard assays
500-0117	RC Reagent I, 250 ml
500-0118	RC Reagent II, 250 ml
500-0111	DC Protein Assay Kit I, includes DC protein assay reagents package and bovine γ -globulin standard
500-0112	DC Protein Assay Kit II, includes DC protein assay reagents package and bovine serum albumin standard
500-0116	DC Protein Assay Reagents Package, contains DC reagent A (250 ml), DC reagent B (2 L) and DC reagent S (5 ml)
500-0005	Protein Standard I, bovine γ -globulin
500-0007	Protein Standard II, bovine serum albumin
223-9950	Standard Disposable Polystyrene Cuvettes, 3.5 ml, 100
223-9955	Semimicrovolume Disposable Polystyrene Cuvettes, 1.5 ml, 100
170-2525	SmartSpec Plus Spectrophotometer

For more information on the Bio-Rad **DC** protein assay and the standard Bio-Rad protein assay (Bradford), request bulletin 1069. Contact your local Bio-Rad representative, or in the US, call 1-800-4BIORAD (1-800-424-6723). Visit us on the Web at discover.bio-rad.com

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