BRADFORD TEST

Quantitative test for protein

Background

The Bradford assay is a very good, and simple, method of detecting microgram quantities of protein.
However the test is specific for certain amino acids, principally arginine, so not all proteins give the same reaction. For example albumin, casein and gelatin all give different responses. Gelatin has a very weak response to Bradford reagent since the protein, which is partially hydrolysed collagen, contains very few of the amino acids to which the reagent is sensitive. The standard usually employed is bovine serum albumin, (BSA). This is relatively expensive. We have used powdered egg white from the home-baking section of our local supermarket as the standard with results comparable to BSA.
The reagent contains Coomassie Blue dye which is light brown in the reagent but blue when bound to protein.

SAFETY

The stock solution contains phosphoric acid (50%).

Diluted for use the reagent is irritant.
The dye will stain skin and clothes.

Stock solution

- Dissolve 50mg Coomassie Blue in 20cm^3 methanol
- Add this to 60cm^3 phosphoric acid
- Make up to 100cm^3 with water
- Label the stock solution 'CORROSIVE'

Method

Add 2.5cm^3 of the reagent, (stock solution diluted 1+4 with water), to 0.25cm^3 of the sample solution. Allow the mixture to stand for ten minutes then read the absorbance using red light. Ten minutes allows full development of the colour, longer intervals will not affect the result.
Microassay: The sensitivity can be increased by adding 0.5cm^3 of undiluted stock solution to 2cm^3 of the solution to be tested. The method will detect concentrations down to about 5µg per cm^3.

More details and sample results can be viewed on the *Mystrica* website, www.mystrica.com