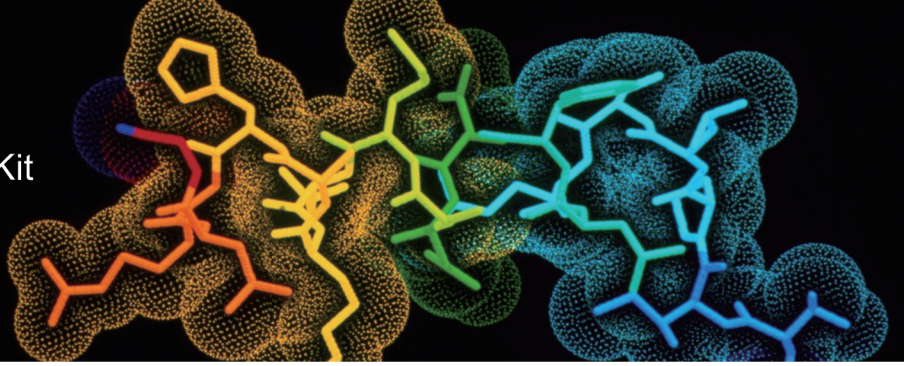
Elabscience®

Elabscience Quantitative Protein Test Kit

Make experiment results more accurate



Background

Protein is an extremely complex polymer compound formed by the combination of a-amino acids with amide bonds (peptide bonds). It is the main nitrogen-containing substance in organisms; it is related to cell structure, enzymes, hormones, viruses, immunity, material transport and genetics. The common areas of content determination are shown in Figure 1.

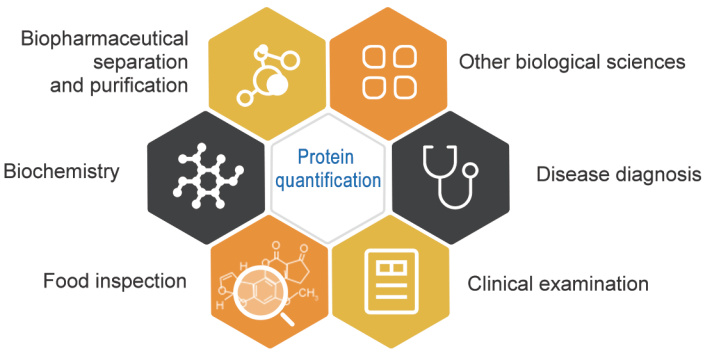


Figure 1: Fields involving quantitative detection of proteins

Protein detection method

The methods of detecting protein content can be roughly summarized into two: a general nitrogen determination method, which calculates the protein content based on the nitrogen content; the other is based on the physical and chemical properties of the protein, using corresponding equipment for testing, and establishing a standard curve and then calculate the protein content. Common protein detection methods are shown in Figure 2.

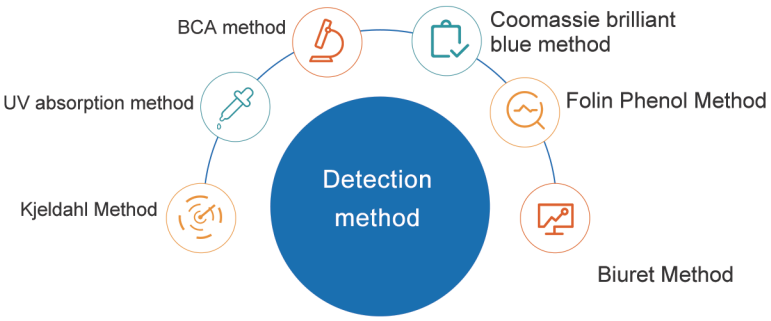


Figure 2: Protein detection methods

Common methods of protein quantification

Protein quantification exists in many fields, and its common methods are shown in the table below

Use	Common protein detection method	Note
Measure total protein to calculate target substance concentration in biological sample	BCA method	Used in conjunction with other substance detection kits, such as detecting the content of enzymes, ions and cytokines in tissue and cell samples
Detect the total protein content of sample in Western Blot	BCA method	Use with Western Blot reagent
Determination of serum (plasma) total protein content	Biuret Method	As the evaluation basis for disease diagnosis
Determine the content of target protein in protein purification	Coomassie brilliant blue method, BCA method	Such as enzyme extraction

Advantages and disadvantages of different methods

Method	Advantage	Disadvantage
BCA method	1. Simple operation and high sensitivity 2. There are many types of samples that can be tested 3. Not affected by chemical substances such as detergents 4. High accuracy and good linearity	Affected by chelating agent and slightly higher concentration of reducing agent.
Coomassie brilliant blue method	1.High sensitivity 2.The measurement is fast and simple, with good color stability 3.Relatively few interfering substances, not affected by reducing agents such as mercaptoethanol, complexing agents such as EDTA, sugars, etc.	1.Due to the different contents of arginine and aromatic amino acids in various proteins, the Coomassie Brilliant Blue method has large deviations when used in the determination of different proteins 2.There are still some interferences, such as glycerol, acetic acid, detergents, and 0.1M NaOH alkaline buffer solvents
Biuret Method	1.It is not affected by temperature and produces similar colors to different proteins 2.Good repeatability 3.High accuracy, not affected by the type of protein	1.Poor sensitivity 2.There are many interfering substances, and both chelating agents and reducing agents will interfere with the reaction
UV absorption method	1.Simple, sensitive and fast 2.Do not consume samples 3.Low-concentration salts do not interfere with the determination	1. Low sensitivity; 2. Strong nucleic acid interference.
Kjeldahl Method	The results are accurate and reproducible	1.Complex operation 2.Time-consuming and large reagent consumption
Folin Phenol Method	High Sensitivity	1.Poor anti-interference ability 2.Low reaction rate and long time-consuming 3.Poor stability

Elabscience protein test kit

Quantitative protein detection has a great effect on the detection of various substances and the diagnosis of diseases. In order to meet the needs of customers scientific research, based on the advantages and disadvantages of each detection method, Elabscience has developed three protein content test kits with different principles. It contains a complete set of reagents and standards required for protein detection, and is accompanied by detailed operating instructions, which can help you quickly obtain accurate and reproducible results, and it can measure the protein content in various samples. The measured requirements are as follows:

Cat Number	Product name	Detection range	Sample type
E-BC-K318-M	BCA Protein Colorimetric Assay Kit	0.0165-1 mg/mL	Application are wide, suitable for a variety of samples
E-BC-K165-M	Biuret Protein Colorimetric Assay Kit	0.58-100 g/L	Suitable for high concentration samples such as serum (plasma)
E-BC-K165-S	Biuret Protein Colorimetric Assay Kit	0.373-80 g/L	
E-BC-K168-M	Bradford Protein Colorimetric Assay Kit	0.046-0.6 mg/mL	Suitable for serum, plasma, animal tissue
E-BC-K168-S	Bradford Protein Colorimetric Assay Kit	0.026-1.2 mg/mL	

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