Biomaghreb

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CE

TOTAL PROTEINS

Colorimetric Test (Biuret)

Reagent for the quantitative determination of total protein in human serum

IN VITRO DIAGNOSTIC USE

IVD

REF	**27016**	**3 x 150 ml** (450 T)	**R1:** 3 x 147 ml	**R2:** 1 x 11 ml	**R3:** 1 x 4,5 ml
REF	**27023**	**1 x 150 ml** (150 T)	**R1:** 1 x 147 ml	**R2:** 1 x 4 ml	**R3:** 1 x 2 ml

CLINICAL SIGNIFICANCE

Proteins are macromolecular organic compounds that are widely distributed in the body. They function as structural elements or transport molecules. Determination of their level is necessary to detect hyperproteinemia produced by hemoconcentration, dehydration or an increase in the concentration of specific proteins. Hypo-proteinemia by hemodilution may be due to dysfunction in protein synthesis, excessive losses (hemorrhages) or significant protein catabolism.

PRINCIPLE

Colorimetric method described by Gornall et al (1949). The peptide bonds of proteins react with Cu2+ in alkaline solution to form a blue-violet complex whose absorbance is proportional to the protein concentration. The Biuret reagent contains sodium potassium tartrate which complexes the copper ions and maintains their solubility in the alkaline medium.

REAGENT COMPOSITION

Reagent 1 Alkaline reagent	Potassium-Sodium Tartrate Sodium hydroxide Potassium iodide	31, 9 mmol/l 0,6 mol/l 30 mmol/l
Reagent 2 Staining reagent	Copper Sulphate (Harmful)	0,6 mol/l
Reagent 3 Standard	Bovine Albumin	50 g/l 5 g/dl

SAFETY CAUTIONS

Biomaghreb reagents are intended for use by qualified personnel for in vitro use (do not pipette by mouth).

- Refer to the current SDS available on request or at www.biomaghreb.com;
- Verify the integrity of the reagents before use; and
- Disposal of waste: comply with the legislation in force.

For safety reasons, treat any specimen or reagent of biological origin as potentially infectious.
Respect the legislation in force.

REAGENT PREPARATION

Working Solution :

Add 3 ml of R2 to 1 bottle R1 REF (27016) and REF (27023).

SAMPLE PREPARATION

Heparinized serum or plasma .

PRESERVATION AND STABILITY

- Before opening : The reagents are ready to use, stable up to the expiry date indicated on the label of the box at 2-8°C;
- After opening : (Working Solution) : 6 months at 2-8°C.

ADDITIONAL EQUIPMENT

- Basic equipment of the medical analysis laboratory ;
- Spectrophotometer or Clinical Biochemistry Analyzer.

QUALITY CONTROL

External quality control program.
It is recommended to control in the following cases:

- At least one test per series.
- Change of reagent bottle.
- After maintenance work on the analyzer.

If a control value is outside the confidence limits, repeat the procedure using the same control.
Use normal and pathological control sera.

CALIBRATION

The standard of the kit (Reagent 3) or any calibrator connected to a method or reference material.
The frequency of calibration depends on analyzer performance and reagent storage conditions.
Recalibration is recommended in the following cases:

1. Changing the reagent lot ;
2. After maintenance work on the analyzer; and
3. Control values are outside the confidence limits.

LINEARITY

The method is linear up to 150 g/l.

PROCEDURE

Wavelength: 546 nm ;
Room Temperature ;
Tank: 1 cm thick;
Adjusting the spectrophotometer zero with the reagent blank.

	Blank	Standard	Sample
Standard	- -	20 µl	- -
Sample	- -	- -	20 µl
Working Solution	1 ml	1 ml	1 ml
Mix and read absorbances after 5 minutes incubation at room temperature. Staining stability is 30 minutes.			

CALCULATION

$$\text{Total proteins} = \frac{\text{OD. Sample}}{\text{OD Standard}} \times n$$

With n = Standard Value

n = 50 g/l ;
n = 5 g/dl.

REFERENCE VALUES

Newborns	52 - 91 g/l 5,2 - 9,1 g/dl
Children	54 - 87 g/l 5,4 - 8,7 g/dl
Adults	67 - 87 g/l 6,7 - 8,7 g/dl

REFERENCES

A. Gornall et al- J. Biol-Chem 177,751 (1949) ;
Henry R.J., Annal. Chem. 92, 1491 (1957) ;
Peter T.J. Clin. Chem. 14, 1147 (1968) ;
T.E. Weichselbaum: Am. J. Clin. Pathol. 16 Sect. 10-40 (1946).


Manufacturer


Use by

In Vitro Diagnostic


Temperature Limitation

Catalogue number


See insert


Store away from light

Sufficient for < n > essais

Batch number