BioMed-Magnesium

Colorimetric, Endpoint

REF: MG122120 (2×60 ml)
MG12250 (2×25 ml)

INTENDED FOR USE:

For the quantitative determination of magnesium in biological liquids .

PRINCIPLE :

Magnesium and Galmagite react in alkaline medium producing a purple colour water-soluble chelate .
The intensity of the colour is proportional to the magnesium concentration in the sample.
Moreover the blue xilidil generated absorption, decreases proportionally with the chelate formation.
Therefore magnesium can be determined by measuring the chelate optical density increase , or the blue xilidil optical density decrease.

SPECIMEN COLLECTION:

Non hemolyzed serum and plasma, liquor or urine. 24/h Urine diluted1:5 with distilled water acidified with 2/3 drops of HCl 23% .
To obtain plasma utilize heparin, oxalate, citrate, sodium fluoride.
Do not use EDTA as anticogulant in order not to overestimate the values.
Serum should be separated from the clot as soon as possible Magnesium in serum is reported stable up to 1 week if stored in refrigerator and protected against evaporation .
Shake and bring the samples at room temperature (+ 15-25°C) before using .

REAGENT COMPOSITION:

R2 Buffer Reagent	DEA	1.1 MOL/L
R3 DYE Reagent	Buffer Galmagite EGTA	< 1% < 0.1% < 0.1%
R1 Magnesium Standard		2.5 mg/dL 1.028 mmol/L 2.056 mEq/L

PACKAGE : Collection & Storage .

Store at room temperature (+15-25° C). So not expose to light.
Stable until the expiration date reported upon the package.
After the unsealing and the taking of reagent , it is advised to close up the bottle immediately in order to avoid evaporation , direct light exposure and bacterial contamination .

PRECAUTION & WARNING:

Avoid pipetting by mouth .
The preparation , according to current regulation . is classified as not dangerous.
The total concentration of non active components (preservatives, detergents, stabilizers) is below the minimum required for citation .
Anyway handle with care , avoid ingestion , avoid contact with eyes , skin and mucous membranes
The samples must be handle as potentially infected from HIV or Hepatitis .

REAGENT PREPARATION & STABILITY :

Ready to use liquid reagent . Stable until the date reported on the label .
The Reagent is limpid and blue .

REQUIRED MATERIALS NOT PROVIDED :

General Laboratory Equipment and instrumentations.

PROCEDURE :

Wavelength	512 nm (500-520)
Optical path:	1 cm light path
Temperature :	+25/30/37°C
Reading :	Against blank reagent
Assay type :	End Point
Sample/Reagent ratio :	1/150

Pipetting in tubes:

	BLANK	STANDARD	SAMPLE
Reagent(2)	500 µL	500 µL	500 µL
Reagent 3	500 µL	500 µL	500 µL
Distilled Water	10 µL		
R1 (standard)		10 µL	
Sample			10 µL

Mix, incubate for 3 min at 37°C or 6 min at room temperature (+ 15-25°C) ; read sample and standard extinction .
Colour is stable at least 15 min at room temperature .
Volumes can be proportionally modified .
This methodology describes the manual procedure to use the kit .
For automated procedure , ask for specific application .
Calibration with watery standard may cause a systematic error when using automatic instrumentations .

Calculation :

Serum :

$$\text{Magnesium mg/dL} = \frac{\text{(A) Sample}}{\text{(A) Standard}} \times 2.5 \text{ (standard value)}$$

Urine24/h :

$$\text{Mg mg/24h} = \frac{\text{(A) Sample}}{\text{(A) Standard}} \times 2.5 \times 5 \text{ (Dil. Fact.)} \times \text{Vol.Urine 24/h (dL)}$$

to convert mg/dL in mEq/L , divide by 1.21525 .

EXPECTED VALUES :

SERUM:	1.9-2.5 mg/dL	0.78-1.03 mmol/L
LIQUOR (CSF) :	2.4-3.1 mg/dL	0.98-1.27 mmol/L
URINE :	50-150 mg/24h	20.6-61.8 mmol/ 24h

The above mentioned values are to be considered as a reference .
1tis strongly recommended that each laboratory establish its own normal range

WASTE DISPOSAL :

Do not dispose in the environment owing to blue Xilidil color .
The disposal of the product must be in accordance with local regulation concerning waste disposal.

QUALITY CONTROL :

It is recommended to execute the quality control at every kit utilization to verify that values are within the reference range indicated by the methodology.

PERFORMANCE :	
MEASURE INTERVAL / LINEARITY :	0.19-10 mg/dL
DETECTION LIMIT (2DS) :	0.19 mg/dL
SENSITIVITY :	0.1 mg/dL = 0.00796A a 510 nm

INTRA-ASSAY PRECISION : n=20		
LOW LEVEL	M = 1.93 mg/dL	C.V = 3.48%
MEDIUM LEVEL	M = 3.80 mg/dL	C.V = 2.75%
HIGH LEVEL	M = 5.82 mg/dL	C.V = 1.77%

INTER-ASSAY PRECISION : n=20		
LOW LEVEL	M = 1.80 mg/dL	C.V = 2.66%
MEDIUM LEVEL	M = 3.74 mg/dL	C.V = 1.59%
HIGH LEVEL	M = 5.92 mg/dL	C.V = 1.70%
CORRELATION	r = 0.998	n=60
LIN. REGRESSION	y= 1.012 x +0.01	n=60
INTER. ANALYZED	0.9-3.9 mg/dL	

INTERFERENCE:

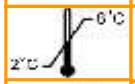
Interferences are negligible up to :			
Ascorbic Acid	50 mg/dL	Hemoglobin	0.5 g/dL
Triglycerides	500 mg/dL	Bilirubin	50 mg/dL

METHOD LIMITATIONS:

For concentration higher than 10 mg/dL repeat the measure on a sample diluted 1:2 with saline solution multiply the results × 2 .
Turbid serums may be used without interference , measuring the extinction decrease at 660 nm .
For through evaluation of the interfering substances ,consult : Young , D. S ,et al , Clin , Chem , 21:1 D (1975) .

REFERENCES:

Bohuon, C ,;Clin , Chem , Acta , 16 , 155 (1957) .
Vassault , A , et al , Ann , Bio , Clin , 44, 686 , (1986) .

	Consult Instructions for Use
	Caution, Consult accompanying Documents
IVD	In Vitro Diagnostic Medical Device
	Temperature Limitation
	Manufacturer
EC REP	Authorized Representative in the European Community
REF	Catalogue Number
LOT	Batch Code
	Use by

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