MAGNESIUM

METHOD – XYLIDYL BLUE
PRODUCT CODE – LM01

ANAMOL
THE ORIGINAL MAKERS

INSTRUCTIONS FOR USE

INTENDED USE: Test for estimation of Magnesium in serum / plasma using Xylidyl Blue method.

SUMMARY AND PRINCIPLE

Magnesium is an essential nutrient which is involved in many biochemical functions. Low levels of Magnesium are associated with prolonged diarrhoea and impairment of neuromuscular function. High magnesium levels are found in patients with renal glomerular failure and diabetic coma.
Magnesium is a reagent set for determination of magnesium in human serum / plasma using Xylidyl blue dye.

Mg^{2+} + Xylidyl Blue ⟶ Mg^{2+} xylidyl complex.

PREPARATION, STORAGE & STABILITY

Magnesium is a ready to use single reagent. The reagent kit should be stored at 2-8 ^{0}C and is stable till the expiry date indicated on the label.

TEST PARAMETERS

Name	Magnesium	Reagent Volume	1000 µl
Reaction Type	End Point	Sample Volume	10 µl
Wavelength	546 nm	Temperature	37 °C
Flow Cell Temp.	37 °C	Incubation Time	10 min.
Blank setting	Reagent	Standard Conc.	2 mg/dL
Blank abs. limit	>1.000	Linearity	5 mg/dL

ASSAY PROCEDURE

	Blank	Standard	Test
Reagent	1000 µl	1000 µl	1000 µl
Standard	NA	10 µl	NA
Sample	NA	NA	10 µl
Mix the reagent and sample/standard in the above mentioned ratio.			
Incubate the assay mixture for 10 mins at 37.			
Aspirate reaction mixture into flow cell and measure the absorbance.			

CALCULATION

$$\text{Magnesium (mg/dL)} = \frac{\text{Abs. of sample x 2}}{\text{Abs. of standard}}$$

COMPONENTS OF REAGENT

Component	Concentration
Tris Buffer	200 mmol/L
EGTA	60 mmol/L
Xylidyl Blue	110 mmol/L
Stabilizers, Inactive Ingredients and Surface Active Agents.	-

SPECIMEN COLLECTION & PRESERVATION

Blood should be collected in a clean dry container. Serum is preferred. Heparinized plasma can be used. Do not use EDTA plasma. Haemolysed samples should not be used. Magnesium in serum/plasma is stable for 7 days at 2-8 ^{0}C and for 1 year at -20 ^{0}C.

REFERENCE VALUES FOR NORMAL PEOPLE

Men	1.8 – 2.6 mg/dL.
Women	1.9 – 2.5 mg/dL.
Children	1.5 – 2.3 mg/dL.
Neonates	1.2 – 2.6 mg/dL.

NOTE

1. The reference values should be used as guide only.
2. Glassware is the most common source of contamination in Magnesium assay. It is strongly recommended that glassware required for assay be rinsed with 0.1 N HCl followed by repeated rinsing with demineralized water.
3. There is no interference of bilirubin upto 60 mg/dL. Haemolysis interference is observed since magnesium is released from the erythrocytes.

QUALITY CONTROL

1. Inclusion of a normal value and abnormal value chemistry control serum in each test run ensures optimum quality control.
2. Consistent use of same type and methodology of control serum provides between run precision and accuracy data for Magnesium. We recommend to produce such data on daily basis for greater accuracy in assay system which include reagents, instrument, apparatus and operator.

PRECAUTIONS

If the Magnesium value exceeds 5 mg/dL then dilute the specimen suitably with normal saline and repeat assay. In such case multiply the result obtained with dilution factor to obtain correct Magnesium value.

BIBLIOGRAPHY

1. Endres DB, Rude RK, Mineral and Bone Metabolism In : Burtis CA, Ashwood ER, editors. Tietz Textbook of Clinical Chemistry, 3rd ed. Philadelphia : WB Saunders Company 1999, p.1395 -1457.
2. Mann CK,Yoe JH. Spectrophotometric Determination of Magnesium with 1-Azo-2-hydroxy-3-(2,4-dimethyl-carboxanilido)-naphthalene-1'-(2-hydroxy benzene) Anal. Chem. Acta 1957 ; 16 : 155 - 60.

SYMBOLS: Read Instruction for use | IVD In Vitro Diagnostic Use Only | Manufactured by | Expiry Date | Storage Temperature

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