

## Magnesium (Mg) Test Kit (Colorimetric)

### 【NAME】

Magnesium (Mg) Test Kit (Colorimetric)

### 【INTEND USE】

This reagent is intended for the in vitro quantitative determination of Magnesium (Mg) in human serum or plasma. Decrease of Mg was mainly related to gastrointestinal loss magnesium, urinary loss and uptake of magnesium deficiency, and then led to convulsions, rigidity, hyperreflexia and other symptoms. Decrease of Mg of cerebrospinal fluid is common in viral encephalitis and local iron deficiency encephalopathy. Increase of Mg was common in acute or chronic renal failure, hypothyroidism, multiple myeloma, etc. Decrease of Mg was common in chronic diarrhea, chronic nephritis, hyperthyroidism, acidosis, cirrhosis, pancreatitis, magnesium ion, etc.

### 【METHODOLOGY】

In alkaline condition, the magnesium ions ( $Mg^{2+}$ ) of blood sample and Dimethyl aniline blue become the coloured complex, this product have maximum absorbance at 510 nm, the absorbance is proportional to the magnesium concentration in serum. By compared with the same processing of magnesium standard liquid, and calculate the magnesium concentration in serum.

### 【STABILITY AND STORAGE】

Unopened, avoid light preservation in 2 ~ 8 °C, valid for 12 months;  
Opened, avoid contamination preservation in 2 ~ 8 °C, valid for 1 month.  
Reagent is not allowed frozen.

### 【SPECIMEN COLLECTION AND HANDLING】

It is best to fresh Serum, heparin anticoagulant blood plasma.  
Don't use the blood sample collection bottle containing EDTA.

### 【APPLICABLE INSTRUMENT】

Fully automatic biochemistry analyzer.

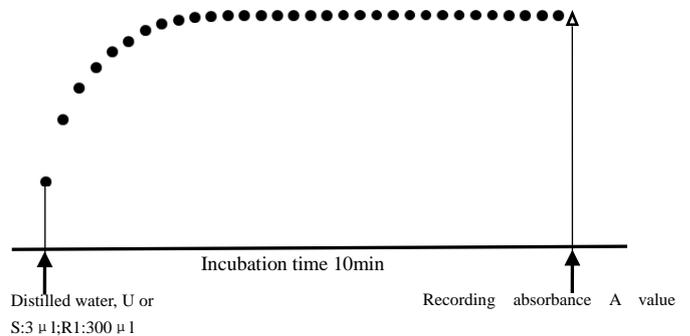
### 【SYSTEM PARAMETERS】

The following system parameters are recommended. Individual instrument applications are available upon request from the Technical Support Group

Temperature	37° C
Cuvette light path	1.0cm
Primary Wavelength	510 nm
Secondary Wavelength	800nm
Assay Type	One Point End
Direction	Increase
Sample : Reagent Ratio	1:100
eg : Sample Vol.	3 μL
Reagent Vol.	300 μL
Linearity	0.2~2.0mmol/L
Testing	Deducting the reagent blank

### 【OPERATION STEPS】

R:Reagent S:Calibrator U:Sample



### 【CALCULATION】

Use The Calibrator

$$\text{Sample Mg concentration} = \frac{\text{Sample } \Delta A}{\text{Calibrator } \Delta A} \times \text{Calibrator concentration}$$

### 【REFERENCE RANGE】

Serum/Plasma: 0.7 ~ 1.1 mmol/L  
By clinical trials, choose no less than 100 newborn or adults blood specimens, tested by automatic biochemical analyzer, and then processing the testing value with statistical method, calculating out the reference range.

### 【THE LIMITATION OF TEST RESULTS】

Mg testing is just one of the standard that clinician diagnose the patient. Clinical physicians should according to patients' bodies, history and other diagnostic program, to get comprehensive judgment.

### 【THE INTERPRETATION OF TEST RESULTS】

Human error, the processing of specimen, analysis instrument deviation, etc. all can affect the measurement result; When one sample deviates from the expected value too far, need to be tested again.

### 【PERFORMANCE INDEX】

1. Reagent blank absorbance  $\leq 0.6$ , (510nm, 1 cm optical path).
2. Precision: repeatability  $CV \leq 5\%$ ; batch variations  $R \leq 5\%$ .
3. Accuracy: relative deviation  $\leq 10\%$ .
4. Linearity range: 0.2 ~ 2.0 mmol/L,  $r \geq 0.990$ .

### 【ATTENTION】

1. Reagent contains sodium azide (toxic) preservatives, avoid contact with skin and mucous membrane. If necessary preventive measures should be taken use of reagents, reagent contact with skin and mucous membrane, please rinse with water, please go to a doctor if necessary.
2. The maximum linearity is 2.0 mmol/L. If testing results is upper limit, dilute with 0.9% sodium chloride solution before test, results multiplied by the dilution ratio.