Magnesium Microplate Assay Kit

User Manual

Catalog # FTA0106

(Version 1.2C)

Detection and Quantification of Magnesium (Mg^{2+}) Content in Serum, Urine, Saliva and Other biological fluids Samples.

For research use only. Not for diagnostic or therapeutic procedures.

I. INTRODUCTION

Magnesium (Mg) is one of the most abundant and essential minerals in mammals. Magnesium is involved in more than 300 biochemical reactions in the body and plays important roles in muscle and nerve functions, heart rhythm, immune system and bone formation. Magnesium deficiency may lead to nausea, fatigue, muscle contractions, hypocalcemia and hypokalemia.

The magnesiums can react with calmagite. The products can be measured at a colorimetric readout at 520 nm.

II. KIT COMPONENTS

Component	Volume	Storage
96-Well Microplate	1 plate	
Dye Reagent I	Powder x 1	4 °C
Dye Reagent II	11 ml x 1	4 °C
Dye Reagent III	Powder x 1	4 °C
Reaction Buffer	5 ml x 1	4 °C
Standard (10 mmol/L)	1 ml x 1	4 °C
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Note:

Dye Reagent I: add 1.5 ml distilled water to dissolve before use.

Dye Reagent III: add 1.5 ml distilled water to dissolve before use.

III. MATERIALS REQUIRED BUT NOT PROVIDED

1. Microplate reader to read absorbance at 520 nm
2. Distilled water
3. Pipettor, multi-channel pipettor
4. Pipette tips
5. Mortar
6. Centrifuge
7. Timer

IV. SAMPLE PREPARATION

1. For serum and other biological fluids sample

Detect directly.

V. ASSAY PROCEDURE

Add following reagents into the microplate:

Reagent	Blank	Standard	Sample
Reaction Buffer	50 µl	50 µl	50 µl
Dye Reagent I	15 µl	15 µl	15 µl
Dye Reagent II	110 µl	110 µl	110 µl
Dye Reagent III	15 µl	15 µl	15 µl
Mix well.			
Distilled water	10 µl	--	--
Standard	--	10 µl	--
Sample	--	--	10 µl
Mix, measured at 520 nm and record the absorbance.			

Note:

1) Perform 2-fold serial dilutions of the top standards to make the standard curve.

2) The concentrations can vary over a wide range depending on the different samples. For unknown samples, we recommend doing a pilot experiment & testing several doses to ensure the readings are within the standard curve range.

VI. CALCULATION

1. According to the serum sample

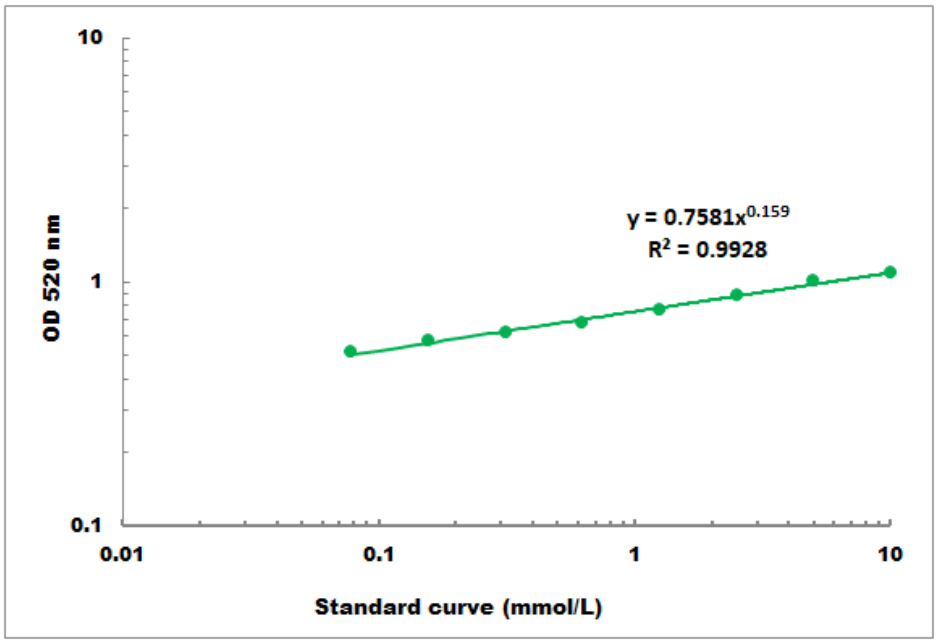
Mg^{2+} (mmol/L) = $C_{Standard}$ × (OD_{Sample} - OD_{Blank}) / ($OD_{Standard}$ - OD_{Blank})

= 10 × (OD_{Sample} - OD_{Blank}) / ($OD_{Standard}$ - OD_{Blank})

$C_{Standard}$: the concentration of Standard, 10 mmol/L.

VII. TYPICAL DATA

The standard curve is for demonstration only. A standard curve must be run with each assay.



Detection Range: 0.1 mmol/L - 10 mmol/L

VIII. TECHNICAL SUPPORT

For troubleshooting, information or assistance, please go online to www.cohesionbio.com or contact us at techsupport@cohesionbio.com

IX. NOTES