

Phosphorus Microplate Assay Kit

Cat #: orb390814 (manual)

Detection and Quantification of Phosphorus Content in Serum, Urine, Saliva and Other biological fluids Samples.

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

INTRODUCTION

Phosphorus is an important part of several of your body's processes. It helps with bone growth, energy storage, and nerve and muscle production. Many foods, especially meats and dairy products, contain phosphorus, so it's usually easy to get enough of this mineral in your diet. Most of your body's phosphorus is contained in your bones and teeth. However, some is in your blood. Hyperphosphatemia is when you have too much phosphorus in your blood. Hypophosphatemia is the opposite: having too little phosphorus. Various conditions, including liver disease and vitamin D deficiency, can cause your blood phosphorus level to become too high or too low.

Phosphorus Microplate Assay Kit provides a sensitive colorimetric means to directly measure phosphorus concentration in various samples. Phosphorus concentration is based on the reaction of phosphorus with ammonium molybdate to form a blue colored product. The color intensity at 620 nm is directly proportional to phosphorus concentration in the sample.

KIT COMPONENTS

Component	Volume	Storage
96-Well Microplate	1 plate	
Assay Buffer	30 ml x 4	4 °C
Reaction Buffer	5 ml x 1	4 °C
Dye Reagent	Powder x 1	4 °C
Standard (0.4 mmol/L)	1 ml x 1	4 °C
Technical Manual	1 Manual	

Note:

Dye Reagent: add 5 ml distilled water to dissolve before use.

MATERIALS REQUIRED BUT NOT PROVIDED

1. Microplate reader to read absorbance at 620 nm
2. Distilled water
3. Pipettor
4. Pipette tips
5. Mortar
6. Centrifuge
7. Timer

SAMPLE PREPARATION

1. For serum and other biological fluids sample

Add 100 μ l sample and 900 μ l Assay buffer into the microcentrifuge tube, mix, centrifuged at 8,000g 25 °C for 10 minutes, take the supernatant into a new centrifuge tube for detection.

ASSAY PROCEDURE

Add following reagents into the microplate:

Reagent	Blank	Standard	Sample
Reaction Buffer	50 μ l	50 μ l	50 μ l
Dye Reagent	50 μ l	50 μ l	50 μ l
Distilled water	100 μ l	--	--
Standard	--	100 μ l	--
Sample	--	--	100 μ l

Mix, wait for 10 minutes, measured at 620 nm and record the absorbance.

CALCULATION

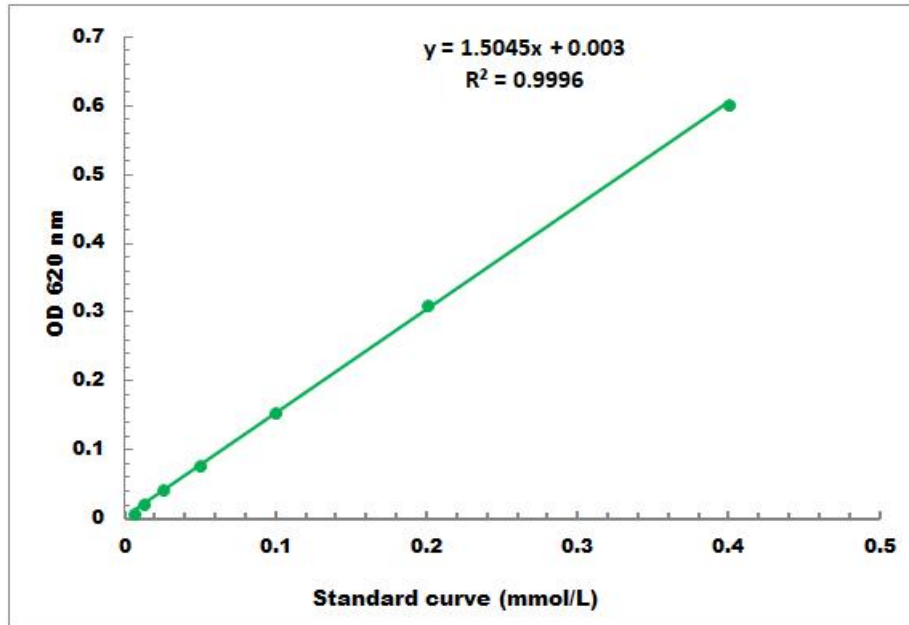
1. According to the serum sample

$$\begin{aligned}\text{Phosphorus (mmol/L)} &= C_{\text{Standard}} \times (\text{OD}_{\text{Sample}} - \text{OD}_{\text{Blank}}) / (\text{OD}_{\text{Standard}} - \text{OD}_{\text{Blank}}) \times 10 \\ &= 4 \times (\text{OD}_{\text{Sample}} - \text{OD}_{\text{Blank}}) / (\text{OD}_{\text{Standard}} - \text{OD}_{\text{Blank}})\end{aligned}$$

C_{Standard} : the concentration of Standard, 0.4 mmol/L.

TYPICAL DATA

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



Detection Range: 0.01 mmol/L - 0.4 mmol/L