ACCUCARE

PHOSPHORUS UV

UV MOLYBDATE METHOD

Quantitative Determination of Phosphorus In Serum/Plasma
Only for *In vitro Diagnostic* Use

ORDER INFORMATION

REF	Cont.
PHOS 25	25 X 1 ML
PHOS 100	2 X 50 ML

CLINICAL SIGNIFICANCE

Phosphorus is an essential mineral for tissue bone formation and is required by every cell in the body for normal function. Approximately 85% of the body phosphorus is found in bone and in teeth. Low levels of phosphorus can be caused by hypervitaminosis D, primary hyperparathyroidism, renal tubular disorders, antacids or malabsortion. High levels of phosphorus can be caused by diet, bone metastases, liver disease, alcohol ingestion, diarrhea and vomiting1,5,6. Clinical diagnosis should not be made on a single test result; it should integrate clinical and other laboratory data.

PRINCIPLE

Inorganic phosphate reacts in acid environment with molybdic acid to form an unreduced phosphomolybdic acid complex, which absorbs light at 340 nm. The absorbance is directly proportional to the phosphorus concentration in the sample.

REAGENT COMPOSITION

Reagent I : Molybdate reagent
Phosphorus standard : 5.0 mg/dl

SAMPLE COLLECTION AND PRESERVATION

Serum Plasma, 24hr. Urine diluted 1:20 with distilled water.
Stability: 7 days at 2-8ºC.

REAGENT PREPARATION

All reagents are ready to use.

REAGENT STORAGE AND STABILITY

Reagents are stable till expiry date when stored at 2 - 8°C.

AUTOMATED PARAMETERS	
Wavelength	340 nm
Cuvette	1 cm light path
Temperature	37 ^{O}C
Measurement	Against Reagent Blank
Sample Volume	20 µl
Reagent Volume	1000 µl
Reaction Type	End Point
Incubation	5 mins.
Low Normal	2.5 mg/dl
High Normal	4.5 mg/dl
Linearity	12.0 mg/dl

MANUAL ASSAY PROCEDURE

PIPETTE INTO TEST TUBES

	BLANK	STD	SAMPLE
SAMPLE	-	-	20µl
STANDARD	-	20µl	-
REAGENT	1000µl	1000µl	1000µl

Mix well incubates at 37 ^{O}C for 5 mins. Measure final absorbance of the sample (Ac) and standard (As) against the reagent blank.

CALCULATION

Ac / As x Conc. Std. = mg / dl Serum
Ac / As x Conc. Std. x 20 = mg / dl Urine

LINEARITY

The method is linear to a concentration of 12.0 mg/dl

REFERENCE INTERVAL

Adults: 2.5 – 4.5 mg/dl = 0.81-1.45 mmol/L
Children: 4.0 – 7.0 mg/dl = 1.29-2.26 mmol/L
Urine: 0.4 – 1.3 g/24 Hr. Urine = 12.9 – 42 mmol/24 Hr.

QUALITY CONTROL

It is recommended to run a normal and a pathological control serum which is commercially available to verify the performance of the measured procedure. The value of controls should fall within the established limit.

BIBLIOGRAPHY

Teitz, N.W., Fundamentals of Clinical Chemistry, 2nd edition. W.B. Saunders, Philadelphia, 1976.

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