Phosphorous (BR-120/BR-160)

Direct UV Test / Molybdate Method

IVD

PRODUCT
CODE CE003

INTENDED USE

For the quantitative determination of Phosphorous in serum

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 vomiting.
Clinical diagnosis should not be made on a single test result; it should integrate clinical and other laboratory data.

PRINCIPLE

Inorganic phosphate reacts with molybdate in strong acid medium to form an unreduced phosphomolybdate complex (UPC). This complex is maintained in solution and its UV absorbance enhanced by the addition of a surfactant. In older but unstable method, the UPC was reduced by ferrous ammonium sulphate to form a blue color. the reduction step has been omitted and the UV absorbance is read directly at 340 nm.

Inorganic phosphorous + H_2SO_4 + ammonium molybdate ----->-Unreduced phosphomolybdate complex (UPC).

REAGENT COMPOSITION

PHOSPHOROUS

REAGENT Ammonium heptamolybdate Sulphuric Acid (pH 1.0) Detergent	0.3 mmol/l 200 mmol/l 1.0 %

PREPARATION

The reagent is ready to use

STORAGE AND STABILITY

The reagent is stable up to the stated expiry date when stored at 15 - 25°C.

SPECIMEN

Serum, do not use plasma. Clear, non-haemolysed, preferably fasting serum, separated from clot as soon as possible. Erythrocytes contain organic phosphates which can hydrolyze on standing. Inorganic phosphates can then leak from the cell and elevate serum levels. Serum phosphates are stable for 7 days at 4 °C, or 2 days at 25° C.

PRECAUTION

To avoid contamination, use clean laboratory wares.
Serum specimen should be considered infectious and handled appropriately.

PROCEDURE
APPLICATION ON AUTO BIOCHEMISTRY ANALYSERS

BR-160 AUTO BIO CHEMISTRY ANALYSER

TEST NAME	PHO			SAMPLE VOLUME	3	
FULL NAME	PHOSPHOROUS					
					R1	R2
	PRI.	SEC.		REAGENT VOLUME	300	NONE
WAVE LENGTH	340	NONE				
		START	END			
ASSAY /POINT	1 POINT END	1	25			
DECIMAL PLACE	2					
UNIT	mg/dl					
	LOW	HIGH				
LINEARITY RANGE	0	20				

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BR-120 AUTO BIO CHEMISTRY ANALYSER

TEST NAME	PHO			SAMPLE VOLUME	3	
FULL NAME	PHOSPHOROUS					
	PRI.	SEC.		REAGENT VOLUME	R1	R2
WAVE LENGTH	340	NONE			300	NONE
		START	END			
ASSAY /POINT	1 POINT END	6	39			
DECIMAL PLACE	2					
UNIT	mg/dl					
	LOW	HIGH				
LINEARITY RANGE	0	20				

LINEARITY

The test is linear up to a serum phosphorous concentration of 20 mg/dL or 6.4 mmol/L, If Sample exceeding this value should be diluted 1+1 with distilled water and reassayed.

NORMAL RANGE

Adults	2.5 - 4.8 mg/dL	0.81 - 1.55 mmol/L
Children	4.0 - 7.0 mg/dL	1.29 – 2.26 mmol/L

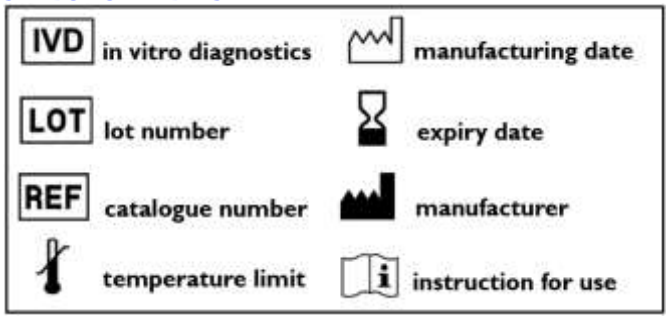
QUALITY CONTROL

All control sera with Phosphorous values determined by this method can be used.

NOTES

1- It is recommended to use disposable plasticware. Phosphorous contamination from glassware is a major source of error in this test. If glassware is used it should be soaked in dilute HCI and thoroughly rinsed in distilled water before use.
2- The reagent contains sulphuric acid to handle with care and wash thoroughly with water if it comes in contact with the
3- skin. Lipaemic, icteric or grossly haemolytic sera may require a sample blank.
4- Bilirubin levels up to 5 mg/dl have no effect on this procedure.

SYMBOL ON LABELS



BIBILOGRAPHY

1- Daly, J. A. and Eritingshausen, G.; Clin. 18, 263, 1972
2- Wang, J. Chen, C.C. Osaki, S. Clin. Chem. 29, 1255, 1983.
3- Henry, J.R., Clinical Chemistry, Harper and Row, New Yark, 415,