INORGANIC PHOSPHORUS SYSTEM PACK

(MOLYBDATE UV METHOD)

B Auto 200, Unicorn 230, Unicorn 120 & Bonavera Chem 200 , Beaconic chem 200, Beaconic B200, Beaconic analyzer 120, Bonavera chem 100 (Fully Auto Biochemistry Analyzer)

Code	Product Name	Pack Size
BA223	Inorganic Phosphorus System Pack	4x20 ml

INTENDED USE

Diagnostic reagent for quantitative *in vitro* determination of Phosphorus in human serum, plasma and urine.

CLINICAL SIGNIFICANCE

More than 80% of the body's phosphate is present in bones as calcium phosphate. The reminder is found intracellularly as organic phosphates such as phospholi- pids, nucleic acids and ATP or extracellularly as inorganic phosphorus. There is generally a reciprocal relationship between serum calcium and inorganic phosphorus levels. Increased levels of serum phosphorus is seen in renal dise- ases, hypoparathyroidism and excessive vitamin D intake. Decreased levels of phosphorus is seen in rickets, osteomalacia (adult rickets), hyperparathyroidism and in diabetic coma.

PRINCIPLE

Inorganic phosphorus combines with ammonium molybdate in the presence of strong acids to form phosphomolybdate. The formation of reduced phosphomolybdate is measured at 340 nm and is directly proportional to the concentration of inorganic phosphorus present in the sample.

REACTION

Phosphorus + Ammonium Molybdate ⟶ Phosphomolybdate Complex

REAGENT COMPOSITION

Reagent 1: Molybdate Reagent

Ammonium Molybdate >1 mmol/L

REAGENT PREPARATION

Reagents are liquid, ready to use.

STABILITY AND STORAGE

The unopened reagents are stable till the expiry date stated on the bottle and Kit label when stored at +2-+8°C.

On board stability: Min. 30 days if refrigerated (+8-+14°C) and not contaminated.

SPECIMEN COLLECTION AND HANDLING

Use unhemolyse serum or plasma (heparin) or urine.
It is recommended to follow NCCLS procedures (or similar standardized conditions).

Stability in serum / plasma:

7 days at +4-+25°C
3 months at -20°C

Stability in urine:

2 days at 20-25°C at pH < 5

Acidify the urine with few drops of conc. Hydrochloric acid. Dilute 1+19 beforethe assay (result x 20).

CALIBRATION

Calibration with the Beacon Multicalibrator is recommended.

QUALITY CONTROL

Its recommended to run normal and abnormal control sera to validate reagent performance.

UNIT CONVERSION

mg/dl x 0.32 = mmol/l

EXPECTED VALUES

Serum

Adult 3 - 4.5 mg/dl
Children 4.0 - 5.5 mg/dl

Urine, 24 h

Adult 0.4 - 1.3 g / 24 h

It is recommended that each laboratory verify this range or derives reference interval for the population it serves.

PERFORMANCE DATA

Data contained within this section is representative of performance on Beacon Data obtained in your laboratory may differ from these values.

Limit of quantification: 0.2 mg/dl
Linearity: 15 mg/dl
Measuring range: 0.2 - 15 mg/dl

PRECISION

Intra-assay precision Within run (n=20)	Mean (mg/dl)	SD (mg/dl)	CV (%)
Sample 1	5.00	0.04	0.77
Sample 2	7.00	0.04	0.56

Inter-assay precision Run to run (n=20)	Mean (mg/dl)	SD (mg/dl)	CV (%)
Sample 1	9.51	0.187	1.97

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COMPARISON

A comparison between Inorganic Phosphorous System Pack (y) and commercially available test (x) using 20 samples gave following results:

y = 0.992x + 0.089 mg/dl
r = 0.998

INTERFERENCES

Following substances do not interfere:
haemoglobin up to 1.25 g/l, bilirubin up to 20 mg/dl, triglycerides up to 500 mg/dl.

WARNING AND PRECAUTIONS

For *in vitro* diagnostic use. To be handles by entitled and professionally educated person.
Reagents of the kit are not classified like dangerous but R2 standard contains less than 0.1% sodium azide - classified as very toxic and dangerous substance for the environment. MSDS will be provided on request.

WASTE MANAGEMENT

Please refer to local legal requirements.

B Auto 200, Unicorn 230, Unicorn 120 & Bonavera Chem 200, Beaconic chem 200, Beaconic B200, Beaconic analyzer 120, Bonavera chem 100 (Fully Auto Biochemistry Analyzer)

Test Name	PHOSPHORUS
Full Name	PHOSPHORUS
Pri Wave	340 nm
Sec Wave	630 nm
Assay/point	1 Point End
Start	-
End	17
Decimal	2
Unit	mg/dl
Linearity Range Low	0.2
Linearity Range High	15
Sample Volume	2 µl
Reagent 1 R1) Volume	200 µl
Reagent 2 (R2) Volume	-
Subsatrate Depleted	-
Linearity	15 mg/dl
Out Of Linearity Range	-
Calibration Type	2 Point linear
Points	2
Blank Type	Reagent
Concentration Blank	0.00
Concentration Std	Refer calibrator value sheet

NOTE

The program is made as per the in house testing, it can be modified as per requirements.
Clinical diagnosis should not be made on findings of a single test results, but both clinical and laboratory data.

REFERENCES

1. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. Burtis, C. A., Ashwood, ER. Bruns, D. th edition, WB Saunders Company, 2012.
2. Daly J. A. and Erthingshausen G., Clinical Chem. (1972) 18,263.
3. Wang J. Chem C. C. Osaki, . Clin. Chem. (1983) 29, 1255.
4. Young D. S. etal Clin. Chem. (1975) 21, 342 D.

Symbols Used On Labels

REF	Catalogue Number		Manufacturer
	See Instruction for Use	LOT	Lot Number
CONT	Content		Storage Temperature
	Expiry Date	IVD	In Vitro Diagnostics

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