ACCUCARE

ACID PHOSPHATASE

Kinetic color method.

Quantitative determination of Acid phosphatase in serum.
Only for *In Vitro* Diagnostic use

ORDER INFORMATION

REF	Cont.
ACP 10	10 X 1.1 ML

CLINICAL SIGNIFICANCE

High ACP activity is observed in cases of prostatic cancer, slight or moderate ACP activity is found in Paget's disease, in hyperparathyroidism and in the presence of malignant invasion of the bones by cancer, such as breast cancer in women.

PRINCIPLE

In acid environment α naphthyl phosphate is hydrolysed by acid phosphatase to produce alpha-napthol and phosphate. Alpha-napthol reacts with diazo-2-chloro-5-toluene (FAST RED TR) forming an azo dye compound which absorbs maximally at 405 nm and is directly proportional to total acid phosphatase activity. When the activity is measured in the presence of tartrate the prostatic activity is inhibited. The difference between Total and Nonprostatic acid phosphatase corresponds to prostatic fraction.

REAGENTS

Reagent I : Buffer reagent
Reagent II : Substrate reagent
Reagent III : Tartrate reagent
Reagent IV : Acetate buffer

SAMPLE COLLECTION AND PRESERVATION

Serum: Use non-haemolysed serum only.
Storage: ACP, especially the prostatic fraction, is unstable in a collected sample hence the serum should be separated from the clot, as soon as possible, and assayed. In case of a delay in testing the serum should be acidified to a pH of 5.0 with 0.02 ml Acetate Buffer (5M) provided for each ml of serum. The enzyme activity will be stable for three days at 2-8℃.

REAGENT PREPARATION

TOTAL ACID PHOSPHATASE

Dissolve the contents of one vial of substrate with the volume of buffer as specified on the vial & label it as A.

NON PROSTATIC ACID PHOSPHATASE

Dissolve the contents of one vial of substrate with the volume of buffer as specified on the vial and label it as B then add 10 µl of sodium tartrate in 1 ml of reconstituted reagent.

REAGENT STORANGE AND STABILITY

1. All reagents should be stored refrigerated (2-8℃) and can be used until the expiration date indicated on the label.
2. Reconstituted Reagent A & B is stable for 5 days refrigerated (2-8℃), when stored in an amber vial protected from direct light.

AUTOMATED PARAMETERS	
Wavelength	405 nm
Cuvette	1 cm light path
Reaction Temperature	37℃
Measurement	Against Distilled water
Reaction	Kinetic
Reaction Direction	Increasing
Sample Volume	100 µl
Reagent Volume	1000 µl
Delay	300 sec
Interval	60 sec
No of readings	4
Blank Absorbance Limit	< 0.800
Linearity	75 IU/L

MANUAL ASSAY PROCEDURE

PIPETTE INTO TEST TUBES

Sample	100 µl
Working Reagent	1000 µl

Mix well, and after 5 mins at 37℃ Measure the increase in absorbance of the Sample every minute for 3 minutes. Calculate the mean absorbance change per minute (ΔA/Min)

CALCULATION

Total ACP	= ΔA / min x 743
Non Prostatic ACP	= ΔA / min x 743

Prostatic ACP concentration = Total ACP - Non Prostatic ACP

LINEARITY

The method is linear to a concentration of 75 IU/L.
If the concentration exceeds this value, the sample should be diluted 1:1 with 0.9% saline solution and reassayed. Multiply the result by 2.

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.

REFERENCE VALUES

Total Acid Phosphatase: 2.5-11.7U/L
Prostatic Acid Phosphatase: 0.2-3.5 U/L
It is strongly recommended laboratory establish its own normal range.

BIBLIOGRAPHY

1. Kaplan, L.A., Pesce, A.J., Clinical Chemistry Theory Analysis and Correlation, C.V. Mosby Company, St. Louis, 1984 pp. 1087.
2. Hillman, G.Z., Klin Chem., Klin. Biochem, 3, 273, 1971.
3. Doe, R.P., Mellinger, G.T., and Seal U.S. Clin. Chem. 11, 943, 1965.
4. Young DS. Effects of Drugs on Clinical Laboratory Tests Third Edition 1990; 3: 4-5.
5. Tietz, N.W., Fundamentals of Clinical Chemistry, Saunders, Philadelphia, 1986.

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