ACID PHOSPHATASE LYPHO

(Hillman α- Napthylphosphate Method)

Intended Use

For the quantitative kinetic determination of acid phosphatase activity in human serum using a manual or automated procedure.

Reagent Provided

1. ACP (Substrate Powder)
2. ACP (Buffer Reagent)
3. L-Tartrate Reagent

Clinical significance.

Acid phosphatase is an enzyme present in almost all weaves of the organism, being particularly high in prostate, stomach, liver, muscle, spleen, erythrocytes and platelets.
High levels of acid phosphatase are found in prostatic pathologies as hypertrophy, prostatitis or carcinoma. In hematological disorders, bones or liver diseases as well as in Paget's or Gaucher`s diseases

Method and principle.

Hillmann method: Phosphatase acid activity present in the sample is determined according to the modified method of Hillmann.

α-naftyl-phosphate + H2O---------- ACP ---------- α-naphtol + phosphate
FAST RED TR

α-naphtol + Fast Red TR ----------Azo Dye

α-naphtol reacts with a diazoted compound forming a colour with a maximum of absorbance at 405 nm.
Tartrate is used as specific of the prostatic fraction.

Components & Concentration of Reagents

Reagent	Component	Concentration
Active Ingredients	Sodium citrate	50 mmol/L
	α- Naftyl Phosphate	10 mmol/L
	FAST RED TR	6 mmol/L
	Sodium Tartrate	2mmol/L
	Acetic acid	0.5 mmol/L
	pH5.2±0.1 at 25°C	

Preparation of Working Reagent

Transfer exact volume of buffer mentioned on the label of dry powder vial. Swirl the reagent till the powder gets dissolved completely. Keep it for 5 minutes to stabilize before use.

Reagent Storage & Stability

Prior to use:

When stored between 2-8°C the individual reagents are stable until the expiration date stated on the bottle and kit box label.

Working Reagent:

The working reagent is stable for 7 days when stored capped at 2-8°C or 1 day at room temperature (18-25°C).

Indications of Reagent Deterioration:

• Turbidity;

• Working Reagent absorbance< 0.700 Abs at 405nm

• Failure to recover control values within the assigned range.

Specimen Collection & Preservative

Serum. Use only clear and unhemolyzed serum, separated from the clot as soon as possible. Do not use plasma.
Acid phosphatase is very labile; stabilize by adding 20 µL of acetic acid per mL of the sample. Stability: 7 days at 2-8ºC.

Assay Guidelines for Analyzers

Reaction Type	Kinetic
Wavelength	405 nm
Slope of Reaction	Increasing
Temperature	37°C
Zero Setting With	Distilled Water
Delay Time	300 sec
Interval Time	60 sec
No. of Readings	4
Working Reagent Volume	1.0 ml
Sample Volume	100 µl (0.100 ml)
Factor	1200
Linearity	60 U/L

	ACP Total	ACP Non Prostatic
ACP Working Regent	1.0 ml	1.0 ml
L-Tartrate	--	10 µL
Sample	100 µL	100 µL

Mix and aspirate. After the initial delay of 300 sec., record the absorbance of test at the interval of 60 sec. for the next 3 minutes at 405 nm. Determine the mean change in absorbance per minute and calculate test results.

KEL DIAGNOSTICS

Calculations.

Results are calculated, usually automatically by the instrument, as follows:

Activity in U/L = Δ Abs/min x Factor

PROSTATIC ACIDPHOSPHATASE = ACP TOTAL - ACP NON PROSTATIC

Expected values

Total acid phosphatase: 0-9 U/L

Prostatic acid phosphatase:0-3 U/L

Warnings and precautions.

For *in vitro* diagnostic use.

Do not use the reagents described above for any purpose other than described herein.

Performance cannot be guaranteed if the reagents are used in other procedures or for other purposes.

Clinical diagnosis must be determined with clinical symptoms and other test results by a physician.

Store the reagents under the specified conditions. Do not use reagents past the expiration date stated on each reagent container label.

Interferences

Hemolysis interferes due the high concentration of acid phosphatase in red cells.

A list of drugs and other interfering substances with acid phosphatase determination has been reported by Young et. al.

Limitations:

Up to 60 U/L

Calibration.

Calibration is recommended at any time if one of the following event occurs-

- The lot number of reagent changes.
- Preventative maintenance is performed or a critical components replaced.
- Control values have shifted or are out of range and a new vial of control does not rectify the problem.

Notes.

The reagent and sample volumes may be altered proportionally to accommodate different spectrophotometer requirements.

References

Young DS. Effects of drugs on Clinical Lab. Tests, 4th ed AACC Press, 1995.
Young DS. Effects of disease on Clinical Lab. Tests, 4th ed AACC 2001.
Burtis A et al. Tietz Textbook of Clinical Chemistry, 3rd ed AACC 1999.
Tietz N.W et al. Clinical Guide to Laboratory Tests, 3rd ed AACC 1995.

Symbols

IVD	In Vitro Diagnostics		Caution
LOT	Batch No.		Product Expiry Date
CONT	Content		Manufactured By
	Read Instructions		Date of Manufacture
	Storage Temperature		Keep Dry
REF	Catalogue No.		Fragile
			Keep away from sun light

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