# ACCUCARE™
# ALKALINE PHOSPHATASE
Kinetic UV test - optimised IFCC method

**Quantitative determination of Alkaline Phosphatase in Serum/plasma**
**Only for *In Vitro* Diagnostic use**

## ORDER INFORMATION

| REF | Cont. |
|---|---|
| ALP 125 | 5 X 25 ML |
| ALP 200 | 4 X 50 ML |
| ALP 25 | 1 X 25 ML |

## CLINICAL SIGNIFICANCE

Alkaline phosphatase is a hydrolytic enzyme found in serum in numerous distinct forms which originate mainly from bone and liver. Physiological increases are found during bone growth in childhood and in pregnancy, while pathological increases are largely associated with hepatobiliary and bone diseases. Elevated activities are also observed in infectious hepatitis, bone disease, osteornalacia (rickets), bone metastases and hyperparathyroidism.

## PRINCIPLE

Alkaline phosphatase (ALP) catalyses the hydrolysis of p-nitrophenyl phosphate at alkaline pH, liberating p-nitrophenol and phosphate, The rate of p-Nitrophenol formation, measured photometrically, is proportional to the catalytic concentration of alkaline phosphatase present in the sample.

## REAGENT COMPOSITION

Reagent I : Buffer reagent
Reagent II : Substrate reagent

## SAMPLE COLLECTION AND PRESERVATION

**Serum:** Use non - haemolysed serum.
**Plasma:** Use heparin. Do not use EDTA, Oxalate or Fluoride.
Alkaline phosphatase in serum or plasma is stable for 7 days at 2-8ºC

## REAGENT PREPARATION

A single working reagent may be prepared by mixing four parts R1 Buffer Reagent with one part R2. Substrate Reagent.

## REAGENT STORAGE AND STABILITY

The working reagent is stable for 7 days at 2-8℃.
Supplied reagent is stable at 2-8℃ until expiry date.

| AUTOMATED PARAMETERS | |
|---|---|
| Wavelength | 405 nm |
| Cuvette | 1 cm light path |
| Reaction Temperature | 37℃ |
| Measurement | Against distilled water |
| Reaction Type | Kinetic test |
| Reaction Direction | Increasing |
| Sample Volume | 20 µl |
| Reagent Volume | 1000 µl |
| Delay/Lag/time | 60 Secs |
| Interval time | 30 Secs |
| No. of Readings | 04 |
| Blank Absorbance limit | < 0.85 |
| Factor | 2720 |
| Low Normal at 37℃ | 25 U/l |
| High Normal at 37℃ | 147 U/l |
| Linearity at 37℃ | 2000 U/l |

## ASSAY PROCEDURE

### PIPETTE INTO TEST TUBES

| | |
|---|---|
| Sample | 20 µl |
| Working Reagent | 1000 µl |

Mix well and Incubate at 37℃ for 60 secs. Measure absorbance increase every 30 secs for 2 minutes and determine the Δ A/min.

## CALCULATION

A/min. x 2720 = U/l Alkaline Phosphatase

## LINEARITY

The method is linear to a concentration of 2000 U/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

| | |
|---|---|
| ADULTS | 25-147 U/l |
| *Children | |
| Aged 1 day | < 250 U/L |
| Aged 2-5 day | < 231 U/L |
| Aged 6 day – 6 Months | < 449 U/L |
| Aged 7Months-1 Year | < 462 U/L |
| Aged 1-3 Year | < 281 U/L |
| Aged 4-6 Year | < 269 U/L |
| Aged 7-12 Year | < 300 U/L |
| Aged 13-17 Year | < 390 U/L |

* Calculated from published reference ranges for ALP opt. method (DGKC) using a factor of 0.417derived from method comparison.
The reference values are to be considered as indicative only.
Every Laboratory should establish is own normal ranges.

## BIBLIOGRAPHY


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LAB-CARE DIAGNOSTICS (INDIA) PVT. LTD.
C1 Type, Shed No. 3225, Chemical Zone, GIDC Sarigam,
SARIGAM - 396 155 (Dist. Valsad). INDIA
Tel : 91-22-2554 2109 / 2554 1558 • Fax : 2554 3541
Email : accucare@labcarediagnostics.com
Website : www.labcarediagnostics.com