

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

**ORDER INFORMATION**

REF	Cont.
ALPM 50	50 X 1 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, osteomalacia (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**

Reagent : ALP Substrate Reagent in MONO vials

**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 2-8°C.

**REAGENT PREPARATION**

The reagent supplied is ready to use.

**REAGENT STORAGE AND STABILITY**

The reagent is stable till the expiry when stored properly at 2 - 8°C and protected from direct sunlight.

AUTOMATED PARAMETERS	
Wavelength	405 nm
Cuvette	1 cm light path
Reaction Temperature	37°C
Measurement	Against D/W
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°C	25 U/l
High Normal at 37°C	147 U/l
Linearity at 37°C	2000 U/l

**MANUAL ASSAY PROCEDURE**

**PIPETTE INTO TEST TUBES**

Sample	20 µl
Reagent	1000 µl

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

**CALCULATION**

$A/min. \times 2720 = U/l \text{ Alkaline Phosphatase}$
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**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 0.417 derived from method comparison.  
The reference values are to be considered as indicative only.  
Every Laboratory should establish its own normal ranges.

**BIBLIOGRAPHY**

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