台塑生醫科技股份有限公司
FORMOSA BIOMEDICAL TECHNOLOGY CORP.

# ALKALINE PHOSPHATASE(ALP)– Kinetic Method ALP

**FOR BECKMAN CX AND LX SYSTEMS**

**INTENDED USE**

For the quantitative determination of alkaline phosphatase activity in serum.

**CLINICAL SIGNIFICANCE**

Alkaline phosphatases(ALP) present in serum is derived primarily from the liver and intestine with little amount from bone. Increase of ALP activities are, therefore, indicators of heptobiliary or bone disorder. In hepatobiliary disease, billary cirrhosis produces exceptionally high levels of serum ALP. Infiltrative disease and cholangiolitic hepatitis are accompanied by significant elevations of ALP. Widely elevated ALP level may also occur in infectious mononucleosis.

Among the bone diseases, the highest levels of serum ALP activity are encountered in Paget's disease and bone cancer. Moderate rises are observed in osteomalacia, rickets, faconi syndrome, primary hyperparathyroidism and secondary hyperparathyroidism. An increase of alkaline phosphatase of up to 2 to 3 times normal is observed in women in the third trimester of pregnancy, this enzyme is placental origin.

Moderate elevations of ALP may be seen in several disorders that do not involve the liver or bone. Among these are Hodykin's disease, congestive heart failure, ulcesative colitis, regional enteritis, and intraabdominal bacterial infections.

**PRINCIPLE**

$$\text{p-nitrophenylphosphate} + H_2O \xrightarrow[Mg^{2+}]{\text{ALP}} \text{p-nitrophenol} + \text{phosphate}$$

(yellow)

**SPECIMEN COLLECTION AND PREPARATION**

Freshly drawn serum is the specimen of choice. Avoid stasis or hemolysis. Heparinized plasma may also be used. Fluoride and anticoagulants such as citrate, oxalate or EDTA should be avoided in the collection of specimens due to their ability to be chelated with $Mg^{2+}$. Alkaline phsphatase in serum is stable for at least 7 days at 4℃ and longer when frozen.

**REAGENT**

- Each kit contains 2 cartridges of ALP reagent (2×200 tests).
- Ready to use
- Components: p-nitrophenyl phosphate 15mM
  2-amino-2-methyl-1-propanol 350 mM

**STORAGE:** 2~8℃

**PRECAUTIONS:**

1. For in vitro diagnostic use only.
2. Since all specimens are potentially infectious, they should be handled with appropriate precautions and practices in accordance with Biosafety level 2 as recommended by USA NIH manual Biosafety in Microbiological and Biomedical Laboratories, and in accordance with National or local regulations related to the safety precautions of such materials.
3. Each laboratory has to perform the quality control test to assure the results being reliable before running the specimen tests.

**PROCEDURES:** Use bar code reading to follow the Beckman CX4 parameters and procedures.

**EXPECTED VALUE:**

25~90 u/l(30℃); 35~130u/l(37℃)

**NOTE:** It is generally recommended that each laboratory establish its own range of normal values for commonly performed tests.

**REFERENCES:**

1. Bowers GN, McComb RB and Kelley ML 1977. Measurement of total alkaline phosphatase activity in human serum. (in : selected Methods of clinical chemistry, G.R. Coopors, ED. Am. Asso. clinical Chem., Wahington, Vol.8.)
2. Tietz NW, Weinstock A, Rodgerson Do 1976. Selection of reaction conditions for the measurement of alkaline phosphatase activity. (in: Proc 2 nd int. Symp Cli. Enzymol AACC, Washington D.C.)
3. Tietz, NM. 1979 Alkaline phosphatase: General comments (in: clinical Enzymology. Griffiths JC ed. Chap.8).
4. Gochman N.1979. The preferred method for total alkaline phosphatase. (in: Clinical Enzymology. Griffiths C.ed.chap.9).