

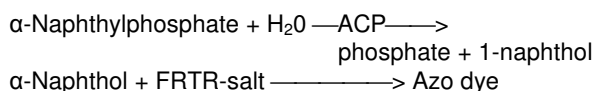
# ACP

## (Colorimetric Test with $\alpha$ -Naphthylphosphate)

Cat.No	Package Size
102 080	5 x 10 ml R1/ 50 ml BufferR2 / 50 ml Buffer-Tartrate R3 / 2 ml Stabilizer R4

### METHOD / REACTION PRINCIPLE:

$\alpha$ -Naphthylphosphate is hydrolysed by ACP to phosphate and  $\alpha$ -naphthol, which is converted with FRTR-salt into an azo dye. The increase of absorbance at 405 nm is proportional to the total ACP activity in the sample. The prostatic acid phosphatase (PACP) can be blocked by tartrate and can be determined indirectly (through the non-prostatic ACP) by calculation of the activity difference.



### REAGENTS: (Concentrations in the test)

R1 : 1-Naphthyl phosphate	10 mmol/l
Fast Red TR-salt (4-chloro-2-methylphenyl diazonium salt)	1.5 mmol/l
R2 : Citrate buffer pH 5.2	100 mmol/l
R3 : Citrate buffer pH 5.2 Tartrate	100 mmol/l 135 mmol/l
R4 : Stabilizer = Acetic acid	0.8 mol/l

*The sealed reagents are stable up to the indicated expiry date if stored at 2° - 8°C.*

### PREPARATION AND STABILITY OF WORKING REAGENTS

#### R2 and R3 are ready for use

**Reagent A** (determination of Total ACP):  
Dissolve the contents of R1 (substrate) in 10 ml of buffer solution R2.  
Mark label with „A“.

**Reagent B** (determination of Prostatic ACP):  
Dissolve the contents of R1 (substrate) in 10 ml of tartrate solution R3. Mark label with „B“.

#### Stability of Working reagents

3 days at 2° - 8°C  
1 day at 18° - 25°C

#### SAMPLES :

Serum, no plasma! Avoid hemolysis!

Use immediately or stabilize :

Add 1 drop of 0.1% acetic acid to 1 ml of serum:

ACP is stable for 3 days at 2-8°C .

### NORMAL RANGES

#### Total Acid Phosphatase

Men  $\leq 4,7$  U/l  
Women  $\leq 3,7$  U/l

#### Prostatic Acid Phosphatase

$\leq 1,6$  U/l

### ASSAY PROCEDURE:

Wavelength : 405 nm Gg  
Light path: 1 cm  
Temperature : 37 °C  
Measurement: against air (increasing absorbance)

Pipette into cuvettes:

	A (TACP)	B (NPACP)
Sample	100 $\mu$ l	100 $\mu$ l
Reagent A	1000 $\mu$ l	-
Reagent B	-	1000 $\mu$ l

Mix, read absorbance A<sub>1</sub> after 5 min and start stopwatch at same time. Read absorbance A<sub>2</sub> exactly after 3 min => Calculate  $\Delta A/\text{min}$ .

### CALCULATION:

Calculate total acid phosphatase activity and prostatic acid phosphatase activity using following factors :

Total acid phosphatase  $TACP$  (U/l) =  $\Delta A/\text{min} \times 743$   
Non-prost. acid phosph.  $NPACP$  (U/l) =  $\Delta A/\text{min} \times 743$

Prost. acid phosph.  $PACP$  (U/l) =  $TACP - NPACP$

### Conversion factor

traditional units (U/l) into SI-units ( $\mu$ kat/l):  
1 U/l =  $16.67 \times 10^{-3}$   $\mu$ kat/l

### CALBRATORS AND CONTROLS

For the calibration of automated analyzers Greiner Multicalibrator is recommended, for quality control use Greiner normal and abnormal control, Unitrol I and Unitrol II.

### LINEARITY:

If absorbance change exceeds 0.3 at 37°C, or if the activity is higher than 74 U/l, dilute 0.1 ml of sample with 0.2 ml phys. saline (0.9 %) and repeat the assay using dilution. Multiply result by 3.

### LITERATURE

1. Thomas L ed. Clinical Laboratory Diagnostics.
2. 1<sup>st</sup> ed. Frankfurt: TH-Books Verlagsgesellschaft, 1988:147
3. Hillmann G. Z.Klin.Chem.Klin.Biochem.9, p.273.