PATHOZYME DIAGNOSTICS

# LIQVIPATH CHOLINESTERASE

## (Butyrylthiocholine / DGKC Method)

**CAT NO.: COL**

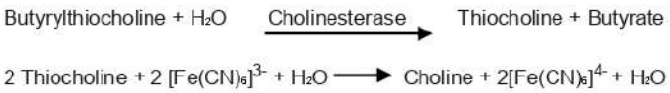
**Reagent Kit for quantitative estimation of Cholinesterase (ChE) in Serum or Plasma.**

## DIAGNOSTIC SIGNIFICANCE:

Cholinesterases (ChE) are a group of enzymes preferably splitting choline and thiocholine esters. The names serum Cholinesterase and Pseudocholinesterase are also commonly used. The ChE measured in serum and plasma is synthesized in the liver and is determined in diagnosis of liver diseases, nephrotic syndrome and intestinal diseases with loss of protein (exudative enteropathy). Strongly decreased values can indicate intoxication by pesticides. Measurement of ChE is also a part of Pre-operative diagnostics as ChE is needed for the inactivation of muscle relaxants often used in surgeries.

## PRINCIPLE:

Cholinesterase hydrolyses butyrylthiocholine under release of butyric acid and thiocholine. Thiocholine reduces yellow potassium hexacyanoferrate (III) to colorless potassium hexacyanoferrate (II). The decrease of absorbance is measured at 405 nm.




## SPECIMEN COLLECTION:

Serum or heparinised or EDTA plasma is suitable. Serum or plasma samples remain stable for 14 days at 2-8$^0$C.

## KIT PRESENTATION:

| PACK SIZE | 1 X 20 ml | 1 X 40 ml | 2 X 50 ml |
|---|---|---|---|
| R1- Cholinesterase (Buffer) | 1 X 16 ml | 1 X 32 ml | 2 X 40 ml |
| R2- Cholinesterase (Substrate) | 1 X 04 ml | 1 X 08 ml | 2 X 10 ml |

## WORKING REAGENT PREPARATION

Mixing 4 volumes of R1-Cholinesterase (Buffer) with 1 volume of R2- Cholinesterase (Substrate). i.e. 800 µl R1 + 200 µl R2.

## REAGENT STORAGE AND STABILITY

All reagents are stable at 2-8$^0$C until the expiry date stated on the label. Do not freeze the reagents and **protect form light.**

## NORMAL VALUES:

- Female : 3930 – 10800 IU/L
- Male : 4620 – 11500 IU/L

Each laboratory should establish its own reference range.

## SENSITIVITY / LIMIT OF DETECTION:

The lower limit of detection is 55 U/L

## ASSAY PARAMETERS:

| | | | |
|---|---|---|---|
| Reaction | : Kinetic | Sample Volume | : 20 µl |
| Wavelength | : 405 nm | R1 + R2 Volume | : 800 µl + 200 µl |
| Flow Cell Temp. | : 37$^0$C | Factor | : 55000 |
| Initial Delay | : 120 Sec | Reaction Slop | : Decreasing |
| Interval Time | : 60 Sec | Zero Setting | : Dist. Water |
| Read Time | : 180 Sec | Linearity | : 20,000 |
| No. of Reading | : 03 | Unit | : IU/L |

## PROCEDURE:

| Addition Sequence | Test |
|---|---|
| R1- Cholinesterase (Buffer Reagent) | 800 µl |
| R2- Cholinesterase (Substrate Reagent) | 200 µl |
| Sample (Test) | 20 µl |

Mix & aspirate immediately and read **first** absorbance of test exactly at 120 seconds and then, **second, third** and **fourth** at an interval of 60 seconds at 405 nm. Determine the mean change in absorbance per minute. (ΔA/min) and calculate the test results.

## CALCULATION:

Cholinesterase Activity (IU/L) = ΔA/min X 55000

## LINEARITY:

This method is linear up to **20,000 IU/L**. For values above 20,000 IU/L, dilute the sample suitably with 0.9 % saline, and repeat the assay. Apply correction due to dilution to arrive at a final result.

## REFERENCES:


**1.** Recommendation of the German Society for Clinical Chemistry. Standardization of methods for the estimation of enzyme activities In biological fluids: Standard method for the determination of Cholinesterase activity. J Clin Chem Clin Biochem 1992;30:163-70.

**2.** Thomas L, Clinical laboratory diagnostics, 1st ed frankfurt: TH-Books Verlagsgesellschaft; 1998. P.65-71.

**3.** Hallbach J, Klinische Chemie fur den Einstieg. 1st ed Stuttgart: Thieme;2001. p.143-4.



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Expiry Date | IVD In-Vitro Diagnostics Use | Storage | Mfg. Date | LOT Batch Number | REF Catalogue Number | See Package Insert


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