ACCUCARE
CHOLINESTERASE
Butyrylthiocoline potassium hexacyanoferrate (III) method

Quantitative determination of Cholinesterase in serum/plasma
Only for *In Vitro* Diagnostic use

ORDER INFORMATION

REF	Cont.
CHOLEN 25	1 x 25 ml

CLINICAL SIGNIFICANCE

There are two forms of cholinesterase; acetyl cholinesterase and cholinesterase is also commonly referred to as psuedocholinesterase. Acetylcholinesterase is found predominantly in erythrocytes. Cholinesterase is synthesised in the liver and is present in plasma and is the form of the enzyme routinely measured. Cholinesterase is most commonly measured as an indicator of exposure to anticholinesterases (organophosphates, including many insecticides), or inherited abnormal variants of the enzyme, which cause a decreased level of plasma cholinesterase.
Increased levels of activity may be present in nephrotic syndrome or in the recovery from liver damage.
Clinical diagnosis should not be made on a single test result; it should integrate clinical and other laboratory data.

PRINCIPLE

Butyrylthiocholine iodide is hydrolyzed by cholinesterase to produce thiocoline in the presence of potassium hexacyanoferrate (III), the absorbance decrease at 405nm is directly proportional to the cholinesterase activity in the sample.

REAGENT COMPOSITION

Reagent I : Buffer Reagent
Reagent II : Butyrylthiocholine iodide Reagent

SAMPLE COLLECTION AND PRESERVATION

Serum : Use non-haemolysed serum
Plasma : Heparin or EDTA plasma.
Storage: Cholinesterase in serum/plasma is stable for 17 days when stored between 2-8℃ or for 3 months when stored below -20℃.

REAGENT PREPARATION

Mix 4 parts (4.0 ml) of Reagent I and 1 part (1.0 ml) of Reagent II.

REAGENT STORAGE AND STABILITY

Prior to use:
When stored between 2-8℃ the reagent is stable until the expiration date stated on the bottle and kit box label.

Reconstituted Reagent:
When stored capped at 2-8℃, the reagent is stable for at least 7 days.

Indications of Reagent Deterioration:

- Turbidity,
- Absorbance > 0.8 at 405nm (1cm); and/or
- Failure to recover control values within the assigned range.

AUTOMATED PARAMETERS	
Wavelength	405 nm
Cuvette	1 cm light path
Temperature	37° C
Measurement	Against water
Sample Volume	15 µl
Reagent Volume	1000 µl
Reaction	Kinetic
Reaction Direction	Decreasing
Delay/Lag/Time	60 Secs
Interval Time	30 Secs
No. of Readings	03
Factor	73000
Blank Absorbance Limit	> 0.800
Low Normal at 37℃	4850 U/l
High Normal at 37℃	12000 U/l
Linearity	12000 U/l

MANUAL ASSAY PROCEDURE

PIPETTE INTO TEST TUBES

Sample	15 µl
Working Reagent	1000 µl

Mix well and wait for 1 minute. Measure absorbance decrease after 30, 60 and 90 seconds. Determine the ΔAbs/minute.

CALCULATION

Results are calculated, usually automatically by the instrument, as follows:

Activity in U/L = ΔAbs/min x 73000

LINEARITY

This method is linear upto 12000 U/l.

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

Serum/Plasma 37℃	4850 - 12000 U/l

The reference values are to be considered as indicative only. Every laboratory should establish its own normal range.

BIBLIOGRAPHY

Knedel, B., Boettger R., Klin. Wschr., (1967), 45, 325. Arbeitsgruppe enzyme der Deutschon Gesellschaft fur Klinische Chemie (1989) Mitt Dtsch Ges Klin Cheni PS20PS, 123-124.

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