

(FOR RESEARCH USE ONLY. DO NOT USE IT IN CLINICAL DIAGNOSIS!)

Cholinesterase (CHE) Assay Kit

Catalog No.: BC00203

Size: 100T

Please read the instructions carefully before use. If you have any questions or need further help during experiment, please don't hesitate to contact us through the following methods:

✉ Email (Sale)	order@enkilife.com
✉ Email (Techsupport)	techsupport@enkilife.com
☎ Tel:	0086-27-87002838
🌐 Website:	www.enkilife.com

Shelf life: Please refer to the label on the outer package.

Techsupport: In order to provide you with better service, please inform us the lot number on the label of the outer package.

Basic Information

Product Name	Cholinesterase (CHE) Assay Kit
Detection Method	Colorimetric
Sample Type	Serum, plasma
Assay Type	Quantitative
Detection Instrument	Microplate reader (405 nm)

Product Introduction

This kit is used for the quantitative determination of cholinesterase (CHE) activity in serum or plasma. Decreased cholinesterase level indicates hepatocellular injury, and it serves as an important indicator for the diagnosis and prognosis evaluation of organophosphorus poisoning.

Principle

Under the action of cholinesterase, thio-butrylcholine is hydrolyzed into butyric acid and thiocholine. Thiocholine further reacts with 5,5'-dithio-bis-(2-nitrobenzoic acid) to produce 5-thio-2-nitrobenzoic acid. The activity of cholinesterase can be calculated by measuring the increasing rate of the product absorbance at 405 nm.

Components

No.	Components	Concentration	Size
Reagent 1	5,5'-Dithio-bis-(2-nitrobenzoic acid)	0.6 mmol/L	20 mL
	Phosphate Buffer Solution (pH 7.7)	70 mol/L	
Reagent 2	Thiobutrylcholine	10 mmol/L	5 mL
	Anti-A-CHE Interferent	Appropriate amount	
Consumable 1	Microplate		1 plate

Consumable 2	Plate Sealer		2 pieces
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Working Solution Preparation: Mix Reagent 1 and Reagent 2 at a ratio of 4:1 to prepare the working solution.

Storage

The reagents can be stably stored at 2-8°C for one year. After opening, store at 2-8°C and use within one month. Consumable 1 and Consumable 2 can be stored at room temperature.

Preparation

Microplate reader with 405 nm wavelength, 37°C water bath or constant temperature incubator, pipettes of various specifications, double distilled water, normal saline (0.9%) or 0.1M PBS.

- Sample requirements**

Serum or plasma. Separate promptly after blood collection to avoid hemolysis. Serum samples can be stored at 2-8 °C for a maximum of 3 days.

Operation process

	Blank tube	Assay tube
Double distilled water (μL)	2	
Sample (μL)		2
Working Solution (μL)	250	250
Mix well, incubate at 37°C for 30 seconds, continuously monitor absorbance for 40 seconds at 405 nm, and calculate $\Delta A/\text{min}$.		

Calculation

$$\text{CHE activity (U/L)} = (\Delta A_{\text{Assay}}/\text{min} - \Delta A_{\text{Blank}}/\text{min}) \times F$$

$$F = \frac{V_{\text{Total}} \times 10^3}{V_{\text{Sample}} \times 13.5} = 9333$$

Annotation:

V_{Total} : Total volume of reaction system, mL

V_{Sample} : Volume of sample added, mL

13.5: Molar extinction coefficient of 5-mercapto-2-nitrobenzoic acid at 405 nm

1.0: Micromolar extinction coefficient of the substrate

10^3 : Conversion coefficient

F: Theoretical calculation factor

Reference Range

4000~10000 U/L (It is recommended that each laboratory establish its own reference range)

Precautions

1. It is recommended to use disposable laboratory test tubes for operation.
2. This product is intended for scientific research use only by professionals and must not be used for clinical diagnosis or treatment, in food or drugs, or stored in ordinary residences.
3. If the instrument does not have the required wavelength for the kit, select the closest available wavelength.
4. The volumes of samples and reagents can be adjusted proportionally as needed. Do not mix reagents of different batches.

5. Take proper protective measures during operation and follow all laboratory reagent operation guidelines. All waste shall be disposed of in accordance with local regulations.
6. Read the instructions carefully before testing. Conduct preliminary tests prior to batch experiments. Users shall be solely responsible for any consequences arising from non-compliant operations.