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Adenosine Deaminase (ADA) Activity Assay Kit

Catalog No.: BC00059

Size: 100T

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

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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	Adenosine Deaminase (ADA) Activity Assay Kit
Detection Methods	Colorimetric
Sample type	Serum, plasma, pleural effusion, ascites, cerebrospinal fluid
Detection Type	Enzyme activity
Detection instruments and wavelength	Microplate reader (546 nm)

Product introduction

In liver disease, the activity of this enzyme is increased, which is helpful for the differential diagnosis of jaundice. In obstructive jaundice, the activity of this enzyme increases less, but in liver parenchymal damage, this enzyme and transaminase often increase at the same time. Especially in chronic active hepatitis and cirrhosis, the positive rate of transaminase is low and increases. The amplitude is not obvious, but the positive rate of ADA activity can reach 90%, and the degree of increase is also obvious. Measuring ADA activity in pleural, ascites and cerebrospinal fluid samples has differential diagnostic value. The ADA activity in conjugated pleural and ascites fluid is significantly higher than that in inflammatory pleural and ascites fluid, and it has high sensitivity and certain specificity for early diagnosis of conjugated thoracic and peritonitis.

Detection principle

$$\text{Adenine} + H_2O \xrightarrow{ADA} \text{Inosine} + \text{Ammonia}$$

$$\text{Inosine} + Pi \xrightarrow{PNP} \text{Hypoxanthine} + \text{Ribose Phosphate}$$

$$\text{Hypoxanthine} + 2H_2O + 2O_2 \xrightarrow{XOD} 2H_2O_2 + \text{uric acid}$$

$$2H_2O_2 + \text{4-APP} + \text{TOOS} \xrightarrow{POD} \text{quinone compound}$$

Product composition

Serial Number	Product Name	Packing Specifications (100T)	Storage
Reagent 1	Reaction	20ml	-20℃, store at 2-8 ℃ after opening .
Reagent 2	Color	10ml	-20℃, store at 2-8 ℃ away from light
Reagent 3	50U/L standard powder	1 bottle	after opening the bottle of reagent 3 and reagent 4 , store at 2-8 ℃ before

			mixing , and store at -20℃ after mixing. It is valid for three months.
Reagent 4	Standard solvent	1.2ml	after opening the bottle of reagent 3 and reagent 4 , store at 2-8 ℃ before mixing , and store at -20℃ after mixing. It is valid for three months.
Consumables 1	96-well ELISA	1 plate	RT
Consumables 2	96-well	2 pieces	RT

Storage Conditions

The unopened kit can be stored at -20℃ for 12 months.

Preparation before the experiment

Sample processing

Serum, plasma, cerebrospinal fluid, pleural effusion and ascites should be separated promptly after blood collection to avoid hemolysis. The samples are stable for 3 days at 2-8°C.

· Preparation of the kit

Pipette 1200 µl of reagent 4 and add reagent 3, mix by pipetting to obtain 50 U/L standard. After the experiment is completed, divide the mixture into small portions and store in -20 °C freezer (avoid repeated freezing and thawing).

Operation process

1. Blank well: take 5 µL of double distilled water and add it to the blank well; standard well: take 5 µL of 50U/L standard and add it to the corresponding standard well; assay well: take 5 µL of the sample to be tested and add it to the corresponding assay well.
2. Add 180 µL of Reagent 1 to each well in step (1).
3. Incubate at 37°C for exactly 3 min.
4. Add 90 µL of Reagent 2 to each well.
5. Mix well, incubate at 37℃ for 180 seconds, wavelength 546nm, read absorbance A1; read absorbance A2 after 120 seconds. Calculate △A/min= （A2 -A1）/2

The operation table is as follows:

	Blank well	Standard well	Determination well
Double distilled water	5	--	--
50U/L Calibrator (µl)	--	5	--

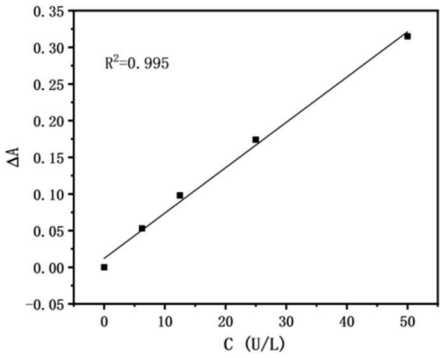
Sample (μl)	--	--	5
Reagent 1 (μl)	180	180	180
Mix well and incubate at 37℃ for 3-5 minutes			
Reagent 2 (μl)	90	90	90
Mix well, incubate at 37°C for 180 seconds, read absorbance A1 at 546 nm; After 120 seconds, read the absorbance A2. Calculate △A/min=（A2 -A1）/2			

Result Calculation

$$\text{ADA Activity (U/L)} = \frac{\Delta A_{Test}/\min - \Delta A_{Blank}/\min}{\Delta A_{Standard}/\min - \Delta A_{Blank}/\min} \times \text{Calibrator concentration (U/L)}$$

Notes

1. Interfering substances: Hemoglobin ≤35g/L, conjugated bilirubin ≤3mg/dl, unconjugated bilirubin ≤20mg/dl, vitamin C ≤11.25mg/dl, triglyceride ≤3265mg/dl will not interfere with the measurement results.
2. If more accurate quantification is required, the standard curve method can also be used: using the half-dilution method, dilute the standard to 50 , 25 , 12.5 , 6.25 , 0 U/L , and measure the ΔA values of the standards of different concentrations according to the method in the operation table , and fit the standard curve to calculate the sample ADA activity. The standard curve data chart is for reference only.



3. This product is limited to scientific research by professionals and must not be used for clinical diagnosis or treatment, used as food or medicine, or stored in ordinary residences.