Adenosine deaminase (ADA) Diagnostic Reagent Kit (Peroxidase Method) Product Instruction

Product name
Generic Name: Adenosine deaminase (ADA) Diagnostic Reagent Kit (Peroxidase Method)
Abbreviation: ADA

Package Specifications

R1	R2
20ml×1	10ml×1
40ml×1	20ml×1
40ml×2	20ml×2

Calibrator (Lyophilized):
Specification 1 (1mL×1; 1 level);
Quality Control (Lyophilized):
Specification 1 (1mL×1; 1 level);

Intended use
Adenosine deaminase (ADA) diagnostic reagent is used for quantitative in vitro determination of ADA in human serum and plasma on photometric systems.

Clinical significance
ADA is an enzyme catalyzing the deamination reaction from adenosine to inosine. The enzyme is widely distributed in human tissues, especially high in T lymphocytes. Elevated serum ADA activity has been observed in patients with acute hepatitis, alcoholic and hepatoma. Increased ADA activity was also observed in patients with tuberculous effusions. Determination of ADA activity in patient serum may add unique values to the diagnosis of liver diseases in combination with ALT or γ-GT (GGT) tests. ADA assay may also be useful in the diagnostics of tuberculous pleuritis.

Principle
The ADA assay is based on the enzymatic deamination of adenosine to inosine which is converted to hypoxanthine by purine nucleoside phosphorylase (PNP). Hypoxanthine is then converted to uric acid and hydrogen peroxide (H2O2) by xanthine oxidase (XOD). H2O2 is further reacted with
N-Ethyl-N-(2-hydroxy-3-sulfopropyl)-3-methylanili ne (EHSPT) and 4-aminoantipyrine (4-AA) in the presence of peroxidase (POD) to generate quinone dye which is monitored in kinetic manner.

Main ingredient

Name	Ingredient	Concentration
R1	Buffer solution	50 mmol/L
	4-Aminoantipyrine	4 mmol/L
	4-AA	2 mM
	PNP	0.1 U/ml
	XOD	700 U/ml
	Peroxidase	2 KU/L
R2	Buffer solution	50 mmol/L
	Adenosine	10 mM
	EHSPT	2mM

Storage and stability
This kit stays stable for 18 months when stored in a dark condition at 2-8° C (do not freeze). After being opened for the first time, the kit can be stored at 2-8° C in an anti-pollution environment and stays stable for 14 days.

Specimen preparation
Fresh serum.
-20℃, stable for 7 days.

Assay procedure

Main wavelength	546 nm	Sample(S)	5 μl
Subwavelength	700 nm	Reagent 1	180 μl
Reation temperature	37℃	Reagent 2	90 μl
Cuvette light path	1cm	Reaction type	Rate method

1. Reagent preparation
This reagent can be used directly.

Add to the cuvette:	
Sample (S)	5 μl
R1	180 μl
Mix well, incubate at 37° C for 5 minutes, then add	
R2	90 μl
Mix well, incubate at 37℃for 2 minutes, Measure the change in absorbance for 2 minutes	

2. Operation steps

Calculations

$$\text{ADA (U/L)} = \frac{\triangle A \text{ Sample}}{\triangle A \text{ calibration}} \times \text{calibration concentration}$$

(△A=A sample to be tested-A blank）

Reference interval
4U/L -18U/L
It is recommended that each laboratory should establish its own reference interval.

Quality control
The control intervals and limits should be adapted to each laboratory's individual requirements. Values obtained should fall within the defined limits. Each

laboratory should establish corrective measures to be taken if values fall outside the limits.

Calibration
A blank calibration is recommended:
The Lot number of reagents changes.
Control values have shifted or are out of range and a new vial of control does not rectify the problem.

Performance characteristics
1. Measuring range
4U/L - 200 U/L
Samples above this concentration should be diluted 1+1 with 0.9% NaCl solution and the result multiplied by 2.

Interference
The effect of the following substances can be neglected if the concentrations of the following substances are at or below the given values.

Substances	Concentrations
Total Bilirubin	8mg/dl
Hemoglobin	100mg/dl
Intralipid	1.6%
VC	10mg/dl

Automation
Special adaptations for automatic analyzers can be made on request.

General precautions
For in vitro diagnostic use only.
Diagnosis should only be made after taking clinical symptoms and the results of other tests into consideration.
Exercise the normal precautions required for handling all laboratory reagents.
Disposal of all waste material should be in accordance with local guidelines.

Precautions for measurement
Specimens should be treated as potentially infectious (HIV, Hepatitis B virus, Hepatitis C virus, etc.) and handled with appropriate caution.
Reagents with different lot numbers should not be interchanged or mixed.

For diagnostic purposes, the results should always be assessed in conjunction with the patient's medical history, clinical examination and other findings.

Material safety data sheet available for professional user on request.

Model	7180
Assay Code	RATE-A
Reaction Time	10
Assay Point	24-30
Wave Length Sec	700
Wave Length Prim	546
ABS. Limit	32000
Sample Volume（uL）	5
R1 Volume（uL）	180
R2 Volume（uL）	0
R3 Volume（uL）	90
Calibration Type	LINER
Calibration Point	2
Span Point	2
SD Limit	999
Duplicate Limit	1000 or (0%-1000Abs)
Sensitivity Limit	0
Prozone Limit	32000

OLYMPUS 400	
Sample Volume（uL）	5
Sample DIL. VOL.	/
R1 Volume（uL）	180
R2 Volume（uL）	90
Reagent DIL. VOL.	/
Measure Wave 1	540
Measure Wave 2	700
METHOD	RATE
SLOPE	-
Method Point	22-27
Linear Limit	-
NO LAG TIME	Yes
OD L	-
OD H	-
Reagent OD Limit	
FIRST	-2.0-+2.5
LAST	-2.0-+2.5
Dynamic Range L	-999999

Parameters

HITACHI

Dynamic Range H	999999
Correlation Factor A	1.0
Correlation Factor B	0.0
Calibration Type	AB
Formula	liner
STD(1) Conc.#	*
Unit	U/L

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