ADENOSINE DEAMINASE (ADA) FL

AD F080 CH 4 x 20 ml

INTENDED USE

Reagent for quantitative in vitro determination of adenosine deaminase in biological fluids.

SUMMARY OF TEST

Adenosine deaminase (ADA) is an enzyme involved in the deamination of the nucleoside adenosine to inosine. ADA is widely distributed in human tissues of spleen and kidneys, as well as in lymphocytes, leucocytes and erythrocytes. An abnormal ADA activity is linked to several diseases: a decrease occurs in case of severe immunodeficiencies, whereas an increase can be associated to leukemia, AIDS, tubercolosis.

PRINCIPLE OF THE METHOD

ADA enzyme converts adenosine to inosine, which starts a sequence of enzymatic reactions mediated by PNP and XOD, leading to hydrogen peroxide (H_2O_2). This compound reacts with TOOS in the presence of peroxidase, to form a chinone compound. Absorbance increase per unit time, measured at 546, is proportional to the concentration of ADA in the sample.

KIT COMPONENTS

For in vitro diagnostic use only.
The components of the kit are stable until expiration date on the label.
Keep away from direct light sources.

ADA R1 F080: 4 x 16 ml (liquid) blue cap

Composition: Phosphate buffer, PNP > 1 KU/l, XOD > 1 KU/l, POD > 1 KU/l, 4-AAP > 1 mM, stabilizer and preservative.

ADA R2 F080: 1 x 16 ml (liquid) red cap

Composition: Phosphate buffer, adenosine > 5 mM, TOOS > 1 mM, stabilizers and preservative.

Store all components at 2-8°C.

MATERIALS REQUIRED BUT NOT SUPPLIED

Current laboratory instrumentation. Spectrophotometer UV/VIS with thermostatic cuvette holder. Automatic micropipettes. Glass or high quality polystyrene cuvettes. Saline solution.

REAGENT PREPARATION

Use separate reagents ready to use.
Stability: up to expiration date on labels at 2-8°C.
Stability since first opening of vials: preferably within 60 days at 2-8°C.

PRECAUTIONS

Reagent may contain some non-reactive and preservative components. It is suggested to handle carefully it, avoiding contact with skin and swallow.
Perform the test according to the general "Good Laboratory Practice" (GLP) guidelines.

SPECIMEN

Serum, heparinate plasma.
Samples are stable one week at 2-8°C.

PROCEDURE

Wavelenght:	546 nm	
Lightpath:	1 cm	
Temperature:	37°C	
dispense:	standard	sample
reagent R1	1 ml	1 ml
standard	25 µl	-
sample	-	25 µl

Mix, incubate at 37°C for 5 minutes.

dispense:	standard	sample
reagent R2	250 µl	250 µl

Mix, after 3 minutes read the absorbance against water, by incubating at 37°C. Perform other two readings at 60 seconds intervals. Calculate the ΔA/min.

RESULTS CALCULATION

Serum/plasma:

$$\text{ADA U/l} = \frac{\Delta A/\text{min}_{(\text{sample})}}{\Delta A/\text{min}_{(\text{standard})}} \times \text{Standard value}$$

EXPECTED VALUES

Adults: ≤ 15.0 U/l

Each laboratory should establish appropriate reference intervals related to its population.

QUALITY CONTROL AND CALIBRATION

It is suggested to perform an internal quality control. For this purpose a suitable human based control sera has to be used.
If required, a standard is available:
ADA CALIBRATOR

Please contact Customer Care for further information.

TEST PERFORMANCE

Linearity
the method is linear up to 200 U/l.
If the limit value is exceeded, it is suggested to dilute sample 1+9 with distilled water and to repeat the test, multiplying the result by 10.

Sensitivity/limit of detection (LOD)
the limit of detection is 0.50 U/l.

Interferences
no interference was observed by the presence of:

hemoglobin	≤ 500 mg/dl
bilirubin	≤ 36 mg/dl
lipids	≤ 1600 mg/dl
ascorbic acid	≤ 5 mg/dl

Precision

intra-assay (n=10)	mean (U/l)	SD (U/l)	CV%
sample 1	13.1	0.22	1.65
sample 2	34.9	0.32	0.92

inter-assay (n=20)	mean (U/l)	SD (U/l)	CV%
sample 1	13.2	0.41	3.08
sample 2	34.9	0.53	1.53

Methods comparison
A comparison between Chema and a commercially available product gave the following results:

ADA competitor = x
ADA Chema = y
n = 112

$y = 1.007x - 1.058$ U/l $r^2 = 0.998$

WASTE DISPOSAL

This product is made to be used in professional laboratories.
P501: Dispose of contents according to national/international regulations.

REFERENCES

Int J Clin Exp Med 2014, 7(10), 3126-35
Arch Med Lab Sci 2017, 3 (1), 15-20

MANUFACTURER

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SYMBOLS

IVD	*in vitro* diagnostic medical device
LOT	batch code
REF	catalogue number
	temperature limit
	use by date
	caution
	consult instructions for use

CE