Lifechem™ ADA

(ADA TEST FOR TUBRCULOSIS)

CLINICAL SIGNIFICANCE:

Adenosine Deaminase (ADA) is an enzyme widely distributed in animal and human tissues. The chief role concerns the proliferation and differentiation of lymphocytes and has been looked on as a marker for cellmediated hyprsensitive reactions.ADA exists in several forms, the prominent ones being ADA 1 and ADA2.ADA1 is found in all cells but with the highest concentration in lymphocytes and monocytes. ADA2 is the predominat isoform in tuberculous pleural effusion suggesting that ADA2 is the most efficient marker in tuberculosis. Studies have confirmed the high sensitivity and specificity of ADA for early disgnosis of extra pulmonary tuberculosis and meningitis. Though ADA is also increased in various infectious diseases like infectious Mononcleosis, Typhoid, Viral Hepatitis,initial stages of HIV, and incases of maligant tumours, the same can be ruled out clinically.

TEST PRINCIPLE

Adenosine Deaminase hydrolyses adenosine to ammonia and inosine. The ammonia formed reacts with phenol and hypochlorie in an alakline medium to form a blue indophenol complex with sodium nirtoprusside acting as catalyst. Intensity of the blue coloured indophenol complex formed is directly proportional to the amount of ADA present in the sample.

Adenosine + H_2O ADA Ammonia + Inosine

Ammonia + Phenol + Hypochloric Alkaline Blue Indophenol Complex
Medium

NORMAL RANGE

Serum, Plasma, Pleural,	Normal	< 30 U/L
Pericardial and Ascitic	Suspect	30 U/L to 40 U/L
Fluids	Strong Suspect	> 40 U/L to 60 U/L
	Positive	>60 U/L
CSF	Normal, Positive	< 10 U/L
		> 10 U/L

It is recommended that laboratories should establish their own normal ranges.

KIT CONTENTS	**CODE No. KADA 1 10 T**	**CODE No. KADA 2 20 T**
1. Buffer Reagent	5ml	10ml
2. Adenosine Reagent	5ml	10ml
3. Phenol Reagent (5x)	10ml	20ml
4. Hypo Reagent (5x)	10ml	20ml
5. ADA Standard (50 U/L)	5ml	5ml

SPECIMEN COLLECTION AND PREPARATION:

Collect specimen prior to use of antimicrobial agent and wherever possible indicate clearly that patient is on antitubercular durgs.

Serum : Fresh/Unhemolysed/Non turbid samples

Plasma : Fresh EDTA,Citrate, Heparinised or Oxalate anti coagulated plama specimens.

CSF : Clean skin with alcohol before aspirating specimen.

Body Fluids : Disinfect the site and collect specimen with aseptic preacautions.

ADA is stable in serum for 3 days and in other biological fluids for 2 days aat 2-8^{0}C, later anmonia may be released in the samples without any microbial contamination.

REAGENT PREPARATION

R1 - Buffer Reagent - Ready-to-use.

R2 - Adenosine Reagent - Ready-to-use. Adenosine Reagent may form crystals at 2-8^{0}C,dissolve the same gently warming at 37^{0}C for some time before use.

R3 - Phenol Reagent is to be diluted 1:5 with distilled water before use (1 part of Reagent + 4 parts of Distilled water.)

R4 - Hypo Reagent is to be diluted 1:5 with distilled water before use. (1 part of Reagent + 4 part of Distilled water.)

WORKING REAGENTS ARE STABLE FOR 6 MONTHS AT 2-8^{0}C.

R5 - ADA Standard - Ready-to-use. The ADA standard corresponds to the ADA activity of 50 U/L and has been standardized on the basis of CRM No.647 i.e.ADA-1 form the Community Bureau of Reference (BCR) of the Europen Commission.

Reagent solution should be protected from light.

PROCEDURE

Allow all the reagents to reach room temparature before use. Perform the assay as given below.

Pipette into clean dry test tubes labeled Blank (B), Stnadard (S), Sample Blank (SB), and Test (T) as follows.

	Blank (B)	Standards (S)	Sample Blank (SB)	Test (T)
Buffr Reagent	0.2ml	0.2ml	...	...
Adenosine Reagent	...	...	...	...
Distilled Water				

Kamineni Life Sciences Pvt. Ltd
Unit D 4-7 , Industrial Estate, Moula-Ali
Hyderabad – 500 040