N BIO - ANGIOTENSIN CONVERTING ENZYME (ACE)

(Kinetic method)

KIT NAME	KIT SIZE	CAT. NO
N BIO - ACE	4 X 5 ml	MACE04005M

GENUINE BIOSYSTEM

INTRODUCTION

Angiotensin converting enzyme is a central component of the rennin-angiotensin system (RAS). It assists in the conversion of angiotensin I to the active vasoconstrictor angiotensin II, which causes arteries to contract and increases blood pressure. Blood level of ACE may increase when sarcoidosis is present, so ACE test is often used to diagnose and monitor sarcoidosis. Main source of ACE are located mainly in the capillaries of the lungs, but can also be found in endothelial and kidney epithelial cells.

METHOD PRINCIPLE

The Kit utilizes enzymatic and kinetic reactions to measure the ACE level (U/L) in human serum. FAPGG has peak obsorbance at 340nm. ACE breaks down the enzyme N-(3[2-Furyl]Acryloy)-phe-gly-gly to FAP and GG and cause a change in absorbance at 340nm.

$$\text{FAPGG} \xrightarrow{\text{ACE}} \text{FAP} + \text{GG}$$

ACE level can be calculated by .monitoring the rate of change of FAPGG at 340nm.

KIT CONTENTS

R1 - ACE reagent	4 x 5 ml
R2 - ACE calibrator	1 vial

R2-ACE Calibrator is in lyopholized form, Please refer the calibrator label for reconstitution and calibrator value.

WORKING REAGENT PREPARATION AND STABILITY

The reagent is ready to use.

The reagent is stable up to the kit expiry date printed on the package when stored at 2-8°C, the reagents are stable for 1 month when the bottle vial has opened for usage.

CONCENTRATIONS IN THE TEST

Tris-HCl buffer, pH8.0	100 mmol/l
N-(3[2-Furyl]Acryloy)-phe-gly-gly	2.5 mmol/l
Proclin 300	0.01%
Nacl	0.9%

WARNINGS AND NOTES

- Product for in vitro diagnostic use only.
- The instructions must be followed to obtain accurate results.
- Do not use the reagents beyond the expiration date.
- Treat all specimens as infectious. Proper handling and disposal procedures of specimens and test materials should be strictly followed.

ADDITIONAL EQUIPMENT

- Automatic analyzer or photometer able to read at 340 nm
- Thermostat at 25°C or 37°C
- General laboratory equipment

SPECIMEN

Serum free from hemolysis. It is recommended to perform test immediately after sample collection. If the test cannot be done immediately, specimens may stored at 2-8°C for a day or frozen at -80°C for 1 month. Avoid repeated freeze-thaw cycle.

PROCEDURE

These reagents may be used both for manual assay and in several automatic analysers. Applications for them are available on request.

Wavelength	340 nm
Temperature	37°C
Cuvette	1 cm

Pipette into the cuvette :

Reagent	Calibrator (C)	Test (T)
R1 ACE Reagent	1000 µl	1000 µl
Bring up the temperature of determination. Then add,		
Calibrator	100 µl	
Sample		100 µl

Mix well and after 180 seconds incubation, measure the absorbance every 60 seconds interval for 3 eadings and calculate the ΔA/min at 37°C.

CALCULATION BY CALIBRATOR

$$\text{ACE concentration} = A(T)/A(C) \times \text{Calibrator concentration}$$

REFERENCE VALUES

Serum upto 52 U/L

It is recommended for each laboratory to establish its own reference ranges for local population.

QUALITY CONTROL

To Ensure adequate quality control, each run should include assayed normal and abnormal controls. If commercial controls are not available it is recommended that known value samples be aliquoted, frozen and used as controls.

For Fully Automated analyzers by using dedicated GB's ACE Calibrator, can plot calibration curve and the same should be prepared every 8 weeks or with change of reagent lot number.

PERFORMANCE CHARACTERISTICS

Linearity: up to 150 U/L. For higher concentration of ACE dilute the sample with 0.9% NaCl and repeat the assay. Multiply the result by dilution factor.

Accuracy: relative deviation ≤10%

Precision: Within Run: CV≤6%; Run-to-Run: Cv≤%

Blank absorbance : at 340nm, 10 mm optical diameter, OD≥ 1.0

WASTE MANAGEMENT

Please refer to local legal requirements.

LITERATURE

1. Fabiny DL: et al: Clin Chem 1971, 17:696.
2. Vasiliades J: et al: Clin Chem 1976, 22:1664

SYSTEM PARAMETERS

Method	Kinetic
Wavelength	340 nm
Zero Setting	Distilled water
Temperature Setting	37°C
Incubation Temperature	37°C
Incubation Time	----
Delay time	180 secs
Read time	180 secs
No. of Reading	3
Interval time	60 secs
Sample Volume	0.1 ml (100 ul)
Reagent Volume	1.0 ml (1000 ul)
Standard Concentration	Refer Calibrator Vial
Units	U/L
Factor	----
Reaction slope	Decreasing
Linearity	150 U/L

IVD CE

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