# ANGIOTENSIN CONVERTING ENZYME (ACE)

## (Kinetic Method)

**Intended Use**

Angiotensin Converting Enzyme is a reagent kit used diagnose and monitor sarcoidosis. The reagents are for *in-vitro* diagnostic use.

**Principle**

The Kit utilizes enzymatic and kinetic reactions to measure the ACE level (U/L) in human serum. FAPGG has peak absorbance at 340nm. ACE breaks down the enzyme N-(3[2-Fury]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 o change of FAPGG at 340 nm.

**Reagent provided**

1. ACE Reagent
2. ACE Calibrator

**Reagent storage and stability**

Reagent and Calibrator are stable till the expiry date stated on the container label.

**Specimen collection and preservation**

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.

**Assay guidelines for Analyzers**

| | |
|---|---|
| Reaction type | Kinetic |
| Reaction slope | Decreasing |
| Wavelength | 340 nm |
| 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 | 100 µl (0.1 ml) |
| Reagent volume | 1000 µl (1.0 ml) |
| Std. concentration | Refer Calibrator Vial |
| Factor calculation | - |
| Linearity | 150 U/L |

**Assay guidelines for Manual procedure**

| Reagent | Calibrator (C) | Test (T) |
|---|---|---|
| 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 readings and calculate the ΔA/min at 37°C.

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**Calculation**

$$\text{ACE Concentration)} = \frac{A(T)}{A(C)} \times \text{Calibrator Concentration}$$

**Normal Range**

Serum up to 52 U/L

**Note**: Expected range varies from population to population and each laboratory should establish its own normal range.

**Limitation**

- The reaction is linear up to 150 U/L. For higher concentration of ACE, dilute the sample with 0.9% NaCl abd repeat the assay. Multiply the result by dilution factor.
- 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.

**Quality Control**

To ensure adequate quality control, it is recommended that 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 KDPL's ACE Calibrator, can plot calibration curve and the same should be prepared every 8 weeks or with change of reagent lot number.

**References**


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


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**Symbols**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| IVD | In Vitro Diagnostics. | | Caution. | | Keep away from sun light. | | Date of Manufacture. |
| LOT | Batch No. | | Read Instructions. | | Fragile. | | Product Expiry Date. |
| CONT | Content. | | Storage Temperature. | | Keep Dry. | | Manufactured By. |
| REF | Catalogue No. | | | | | | |


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