PROCEDURE
Corewell Health East - Angiotensin Converting Enzyme on Abbott Architect - Royal Oak

This Procedure is Applicable to the following Corewell Health sites:
*Sites:, Corewell Health William Beaumont University Hospital (Royal Oak)

Applicability Limited to: N/A

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Functional Area: Clinical Operations, Laboratory

Lab Department Area: Lab - Chemistry

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1. **PURPOSE AND OBJECTIVE:**
   The angiotensin converting enzyme assay is used to aid in the diagnosis of active sarcoidosis. It may be useful for confirmation of Gaucher's disease.

2. **CLINICAL SIGNIFICANCE:**
   The following reaction is catalyzed by ACE:
   ACE
   FAPGG → FAP + Glycylglycine

   N-[3-(2-Furyl)acryloyl]-L-phenylalanyl-glycyl-glycine (FAPGG) is hydrolyzed to furylacryloylphenylalanine (FAP) and glycylglycine. Hydrolysis of FAPGG results in a decrease in absorbance at 340 nm. The ACE activity in the sample is determined by comparing the sample reaction rate to that obtained with the ACE Calibrator.

3. **SPECIMEN COLLECTION AND HANDLING:**
   Serum collected in an SST tube. Refrigerate within 2 hours of collection. Sample is stable for 1 week refrigerated at 2° – 8° C and several months frozen.

4. **REAGENTS:**
   - **a.** Trinity Biotech Ace lyophilized Reagent 10mL, 305-10.
     - **i.** Reagent is prepared by adding 10mL of reagent grade deionized water.
     - **ii.** Stopper and mix several times by inversion.
     - **iii.** Reagent is stable for 30 days at 2°– 8° C once reconstituted.
     - **iv.** Transfer reagent to a 20mL Architect reagent cartridge.

5. **CALIBRATION:**
   - **a.** Trinity Biotech ACE Calibrator, 30550.
     - **i.** Prepare by adding 1.0 mL reagent grade deionized water to vial.
     - **ii.** Swirl gently and stand for 5 minutes.
     - **iii.** Invert gently and mix well to dissolve.
     - **iv.** Swirl gently to mix before each use.

v. Calibration is performed with each run.
vi. Calibrator is stable for 7 days at 2° – 8° C once reconstituted.

6. QUALITY CONTROL (QC):

a. ACE Control-N, 6040 and ACE Control-E, 7040.
- **i.** Prepare by adding 1.0 mL reagent grade deionized water to vial.
- **ii.** Swirl gently and stand for 5 minutes.
- **iii.** Invert gently and mix well to dissolve.
- **iv.** Swirl gently before each use.
- **v.** Control is stable for 7 days at 2° – 8° C once reconstituted.
- **vi.** Refer to QC Procedures and Policies for Automated Chemistry for handling QC results that are outside of the expected values.

7. SPECIAL SAFETY PRECAUTIONS:

Follow Universal Precautions when handling specimens and quality control materials.

8. PROCEDURE:

a. ACE testing is performed on the Architect Chemistry Analyzer using user defined settings. System must be in ADMIN to open a new lot of reagent.
b. Select System at the top of the screen, Configuration, Assay Categories.
c. Select Reagent Settings, ACE, F-6 Configure.
d. The Configure reagent window displays.
e. Select the New Lot option under lot number. Enter the Lot Number, expiration and Serial Number. (Note: The serial number is required. Enter the date the reagent was loaded on the analyzer.)
f. Define the cartridge sizes for R1. Select Done.
g. Select the Reagents button at the top of the screen. Select F-6 Assign Location. Highlight the reagent and select the location. Select Done.
h. Packs of the same lot can be replaced in the same location as the onboard pack by selecting Reagents, Highlighting the Reagent Pack and Selecting F-8 Reset.
i. Samples should be well mixed before testing. Testing is performed on Monday and Thursday from 8:00am to 8:00am the following day.

9. CALCULATIONS AND INTERPRETATIONS:

Completed results will automatically upload to Instrument Manager. Results needing operator attention will remain in Held Status in Instrument Manager for further investigation.

10. EXPECTED VALUES:

8-52 U/L

11. REPORTABLE RANGE:

This method is linear from 1-120 U/L

12. INTERFERING SUBSTANCES:

ACE is inhibited by EDTA and by ACE inhibitors (eg. Captopril, Vasotec) used in the treatment of hypertension.

13. Revisions

Corewell Health reserves the right to alter, amend, modify, or eliminate this document at any time without prior written notice.

14. References:

Trinity Biotech ACE IFU

15. Procedure Development and Approval

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16. Keywords

Not Set