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INSTRUMENT STANDARD OPERATING PROCEDURE MANUAL

College of Medicine



SAFETY AND LABORATORY COOMMITTEE, C.O.M, K.F.U.

Prepared by

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Document History

Document Section	Details of Amendments	Date	Modified by (Initials)
SOP	First Draft on SOP for the operation of PCR Thermocycler	1/12/2020	F.A.A

1. OBJECTIVE

- ☐ The document describes the operation of PCR Thermocycler.

2. SCOPE

- ☐ It is an instrument used to amplify DNA and RNA samples by the **polymerase chain reaction**. The thermocycler raises and lowers the temperature of the samples in a holding block in discrete, pre-programmed steps, allowing for denaturation and reannealing of samples with various reagents

3. RESPONSIBILITIES

- ☐ It is the responsibility of designated laboratory personnel to train both staff and students on the required procedures for operating the equipment and to ensure adherence them under strict supervision.
- ☐ It is the responsibility of all designated personnel (staff or Student) to adhere the operational guidelines.

4. REFERENCES

- ☐ Catalog number: 4375786
- ☐ https://www.thermofisher.com/document-connect/document-connect.html?url=https%3A%2F%2Fassets.thermofisher.com%2FTFS-Assets%2FMSG%2Fmanuals%2Fcms_042832.pdf&title=TWfudWFsOiBBcHBsYWVkieJpb3N5c3RlbXMgVmVyaXRpJnRyYWRIQyBUaGVyYWVbWFsIEN5Y2xlcjAoRW5nbGlzaCAp

5. DEFINITIONS

- ☐ One piece with cover and touch screen.

6. SAFETY PRECAUTIONS

- ☐ Wear suitable personal protective equipment when handling chemicals (for example gloves and lab coat).
- ☐ Do not leave chemical containers open.
- ☐ Check regularly for chemical leaks or spills.
- ☐ Improper fuses or high-voltage supply can damage the instrument wiring system and cause a fire.
- ☐ Keep hands clear of moving parts while operating the instrument.

- ☐ Disconnect power before servicing the instrument.

7. PROCEDURE FOR OPERATING PCR Thermocycler

7.1. Turning on the instrument:

- ☐ Plug the mains cable into the socket on the back of the instrument.
- ☐ Press the power button on the back left side of the instrument: The instrument powers on and the Main Menu screen will display.

7.2. Software Operation.

7.3. Steps of the Procedure

- ☐ At logging into the system, the Main Menu screen is turned on. This screen serves as the starting point for operating the Veriti Thermal Cycler.
 - ☐ Open the cover and put the tubes in their position, then close the equipment.
 - ☐ The date, current time and user will be displayed at the bottom of the screen.
 - ☐ Follow the step by step guide below to run the apparatus:
 - ☐ In the Main Menu screen, click/touch:
 - the **Browse/New Methods** to view the available applications from which to access and to choose from.
 - **Settings Menu** to access the various instrument configuration options will be displayed. If you have administrative privileges, you can then access the Admin Menu screen at this point
 - **Tools Menu** to access instrument tests, tools such as a Tm calculator and run method conversion. The results of the last run and statistics given by the instrument can be viewed using the tools menu.
 - **My Account screen** display provides a means to view and edit your account information. If however, the system does not require to be logged in with a user details, this button will not show.
 - The **Shortcut** buttons allows you to configure the functions of the frequently use applications on the instrument.
 - Use the **Log Off button** to log off the instrument. You can still log off when a run is in process.
- If your system does not require login, the (Power) button is shown instead.
- , (Help) to access the Help.

To view a run method:

1. In the Browse Run Methods screen, touch a run method to select it, then touch **View/Edit**.

The run method will display:

2. To view:

Other steps in the run method – Touch the arrow buttons at the end of the run method.

You can edit every stage with its number of cycles, temperature, the time and steps by Stage column touching.

By (Add bottom) you can add more stages and edit it.

By (Delete) you can delete any stage
Then save the edit by (Save bottom).

3. Upon completion, touch (X) to return the Browse to the Run Methods screen.

New:

For a new method, you can start with it.

Start Run:

After you select an old save method, edit it, or start with a new one, now you can start by (Start bottom) select.

Then (**Run Parameters**) screen will display:

Reaction volume depend on your work and you can edit it now , and you can write any notes, after that by (Start run now) the run will start .

After run finishing ; the instrument will cool down it temperature to 4 degrees and save the samples in this temperature , then you can open the cover and take your samples.

7.4. Turning off the Instrument

- ☐ By Power bottom on the screen.
- ☐ Then Press the power bottom on the back left side of the instrument to switch it off.

7.5. Warning

DO NOT TOUCH THE COVER DUE TO HIGH TEMPERATURE
ALL APARATUS MUST BE OPERATED BY A TRAINED PERSONNEL
