

SOP#: 007	Date Issued: 8/03/2021	Date Revised: 7/08/2021
TITLE:	Synergy H1M™ Hybrid Multi-Mode Microplate Reader	
SCOPE:	Research Personnel	
RESPONSIBILITY:	BORC staff	
PURPOSE:	To outline the proper procedures for use and maintenance of the Multi-Mode Microplate Reader.	

1 PURPOSE

This SOP explains how to use the Multi-Mode Microplate Reader to measure absorption, fluorescent and luminescence signal to quantify DNA/RNA concentration, protein expression, enzymatic reaction etc.

2 RESPONSIBILITY

It is the responsibility of the BORC staff to ensure that equipment is appropriately cleaned, maintained in good working order, and available for research personnel as requested.

3 BEFORE CONDUCTING YOUR EXPERIMENT

Before you start your experiment, you need to set up your protocol for your analysis. Numerous sample protocols are stored in the computer with Gen5. You can use the protocols or build customized protocols to meet your needs and then running them in an experiment to obtain results.

3.1. On each screen of the wizard, click the button to define that protocol element (each function is described in a subsequent chapter):

- 3.1.1 Defining the Reading Procedure
- 3.1.2 Defining the Plate Layout
- 3.1.3 Setting up Data Reduction
- 3.1.4 Building Reports
- 3.1.5 Using the File Export Builder
- 3.1.6 How to use Power Export

3.2. After defining a protocol element, click **Next** to proceed to the next one. Gen5 displays a checkmark for an element that has been defined.

3.3. Click **Finish** to generate the protocol based on your selections.

3.4. Select **File>Save** and give the protocol a unique name. Now you're ready to run an experiment

4 PROCEDURES

4.1 Turn on the Reader.

The reader's power switch is located on the lower-left corner of the front panel. Turn the reader on. The reader performs a System Test. When the test is completed, the reader extends the microplate carrier.

4.2 Start Gen5 and log in if prompted.

4.3 Select **File>Open Protocol**.

At the top of the Open dialog, click the "Up One Level" button 3. In the Gen5 folder, select the **Samples folder**. Select the folder for the desired detection method: Absorbance, Fluorescence or Luminescence. Open the Protocol folder and select the protocol you need. Or you may choose a customized protocol created before by you or others.

4.4 Click **Read**

4.5 After reading the plate (or otherwise acquiring data), in the Plate View use the drop-down list for Data to display the raw data and any data reduction results.

4.5.1 Click the 3-dot button next to a data set to customize the view's appearance, including changing the numeric Format, e.g. number of decimal places, and the Font. (This feature is also available in the Data Views dialog.)

4.5.2 384- and 1536-well plates require resizing to effectively see the data. Gen5 adds a button to the Plate View to zoom in on the top-left quadrant of the plate and zoom out to view the entire plate. After zooming in, use the scroll bars to Bring the other quadrants into focus. Find more on resizing the views in Gen5's Help

4.6. Click the Quick Export button to instantly open the current view in Excel.

5 MAINTENANCE

A general Preventive Maintenance (PM) regimen for all Synergy H1 models includes periodically cleaning all exposed surfaces and inspecting/cleaning the excitation and emission filters and mirrors (if used). For models with the external dispense module, additional tasks include flushing/purging the fluid path, and cleaning the tip prime trough, priming plate, supply bottles, dispense tubing, and injectors.

6 REFERENCES

Refer to the manufacturer's manual for additional information.

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