

**Frederick National Laboratory
for Cancer Research**

sponsored by the National Cancer Institute

Vaccine, Immunity and Cancer Directorate
Standard Operating Procedure

SOP Title: General Use and Maintenance of the MESO QuickPlex SQ 120 Instrument

Document ID: 26028

Version

1.0

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Supersedes

New

Effective Date: 02Aug21

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1. PURPOSE

- 1.1. The purpose of this procedure is to describe the general use and maintenance of the MESO QuickPlex SQ 120 instrument.

2. SCOPE

- 2.1. This procedure applies to all laboratories within VICD.

3. REFERENCES

- 3.1. MESO QuickPlex SQ 120 Instrument User Manual
3.2. 26028: General Use and Maintenance of the MESO QuickPlex 120 Instrument
3.3. 26028-01: MESO QuickPlex SQ 120 Instrument Monthly Maintenance Form
3.4. 15000: Waste Disposal at the Advanced Technology Research Facility
3.5. 15006: Reagent Preparation for the HPV Serology Laboratory

4. RESPONSIBILITIES

- 4.1. The Research Associate, hereafter referred to as Analyst, is responsible for reviewing and following this procedure, and documenting performance of equipment maintenance.
4.2. The Scientific Manager or designee is responsible for training personnel in this procedure and reviewing associated documentation.
4.3. The Quality Assurance Specialist is responsible for quality oversight and approval of this procedure.
4.4. Trained personnel perform equipment maintenance record review per "10009: General Record Review."

5. DEFINITIONS

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- 5.1. As Needed Maintenance – maintenance that is performed outside of routine maintenance but is not performed in response to equipment malfunction.
- 5.2. Non-routine Maintenance – maintenance that is performed in response to equipment malfunction or failure.
- 5.3. Routine Maintenance – maintenance that is performed at planned intervals to identify and prevent problems before they result in equipment failure.
- 5.4. MSD – Meso Scale Diagnostics
- 5.5. PM – Preventive Maintenance

6. REAGENTS, MATERIALS AND EQUIPMENT

- 6.1. Reagents
 - 6.1.1. Primary Disinfectant (Cavicide, Warehouse, Cat # 79300360, or equivalent)
- 6.2. Consumables
 - 6.2.1. MSD 96-well SECTOR and QUICKPLEX plates
 - 6.2.2. Wipe, Low-Lint, Wypalls (Warehouse, Cat # 79300335 or equivalent)
- 6.3. Equipment
 - 6.3.1. MESO QuickPlex SQ 120 Imager
 - 6.3.2. Microsoft Windows-Compatible Computer with MSD DISCOVERY WORKBENCH Software
 - 6.3.3. USB Cable for connecting instrument and computer

7. HEALTH AND SAFETY CONSIDERATIONS

- 7.1. Proper safety precautions should be taken while working in a laboratory setting. This includes, but is not limited to, proper protective equipment such as lab coats, face masks, safety glasses, closed-toe shoes, and non-latex gloves.
- 7.2. Refer to the respective Safety Data Sheet (SDS) when working with any chemicals.
- 7.3. Refer to “HSL_GL_001: Waste Disposal at the Advanced Technology Research Facility” regarding waste disposal processes at the Advanced Technology Research Facility (ATRF).

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- 7.4. Barcode scanner associated with instrument uses lasers as an integral component of its operation. Follow standard institutional laser safety procedures when working with this instrument.

8. PROCEDURE PRINCIPLES

- 8.1. Monthly maintenance is recorded on form "26028-01: MESO QuickPlex SQ 120 Instrument Monthly Maintenance Form."

9. SYSTEM OPERATION

- 9.1. NOTE: The instrument should always remain powered on other than when performing maintenance.
- 9.1.1. To start the system, turn on the QuickPlex SQ 120 instrument and the computer connected to it.
- 9.1.2. When the analysis unit is on and ready to read, the instrument LED is a solid blue color. If the unit is not at correct temperature or experiences an error, the LED is a solid red color. Ensure the instrument is plugged into the computer via USB and allow the camera to cool to -25 °C automatically.
- 9.1.3. Log on to the computer associated with the instrument.
- 9.1.4. Methodical Mind software will automatically start. If it does not start automatically, double click the Methodical Mind icon on the desktop. As long as the instrument LED is solid blue, plates may be loaded and read on the instrument. Plates should be loaded on the right side "input stack".
- 9.1.5. Electronic test plate provided with the QuickPlex SQ 120 instrument should be run at the start of each day to ensure the instrument acquires data and functions properly.
- 9.1.6. When the plate read is complete, the electronic plate is ejected to the output stack and Run is enabled again.
- 9.1.7. When plates are read, export raw data by selecting the format and the location of the exported text data file.

10. MAINTENANCE

- 10.1. Monthly Maintenance
- 10.1.1. Decontaminate the exterior surface of the instrument and prevent excess buildup of dust.

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- 10.1.1.1. Turn off the instrument and disconnect the power cord.
- 10.1.1.2. Spray Primary Disinfectant (i.e. Cavicide) on a low-lint lab wipe or paper towel and wipe down all external surfaces of the instrument. Avoid spraying directly onto the machine.
- 10.1.1.3. Record date/initials and Primary Disinfectant lot number on form "26028-01: MESO QuickPlex SQ 120 Instrument Monthly Maintenance Form."

10.2. Non-routine Maintenance

- 10.2.1. In the case that the instrument is not operating correctly, transition processes being performed to another unit (when applicable), post a sign stating the equipment is out of service and initiate non-routine maintenance documentation per "10007: Non-Routine Equipment Maintenance."
- 10.2.2. Document the nature of any failures or malfunctions, how and when it was discovered, and the personnel involved on "10007-01: Non-Routine Equipment Maintenance Form."
- 10.2.3. Initiate a service request and complete the non-routine maintenance process following 10007.

11. ATTACHMENTS

- 11.1. Attachment 1: 26028-01, MESO QuickPlex SQ 120 Instrument Monthly Maintenance Form

12. REVISION HISTORY

Version #	Changes	Reasons
New	New SOP for use and maintenance of MESO QuickPlex SQ 120 instrument.	Currently no SOP

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Attachment 1: 26028-01, MESO QuickPlex SQ 120 Instrument Monthly Maintenance Form

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Form Title: MESO QuickPlex SQ 120 Instrument Monthly Maintenance Form						
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Maintenance Year:			Equipment ID:			
Month	January	February	March	April	May	June
Primary Disinfectant Lot Number:						
<input type="checkbox"/> Cavicide						
<input type="checkbox"/> Other:						
Primary Disinfectant Expiration Date:						
Performed by/date:						
Reviewed by/date:						
Month	July	August	September	October	November	December
Primary Disinfectant Lot Number:						
<input type="checkbox"/> Cavicide						
<input type="checkbox"/> Other:						
Primary Disinfectant Expiration Date:						
Performed by/date:						
Reviewed by/date:						

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As Needed Maintenance: ☐ N/A

Date	Activity Performed	Recorded by/date	Reviewed by/date
<input type="checkbox"/> N/A			
<input type="checkbox"/> N/A			

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