

Frederick National Laboratory for Cancer Research <small>sponsored by the National Cancer Institute</small>	HPV Serology Laboratory Standard Operating Procedure	
Controlled-Rate Cell Freezing Using a CoolCell Device		
Document ID: HSL_EQ_022	Version 1.1	Page 1 of 6

Released by/Date Effective:

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1. PURPOSE

- 1.1. The purpose of this procedure is to describe the proper use of a CoolCell Device to control-rate freeze cells.

2. SCOPE

- 2.1. This procedure applies to the HPV Serology Laboratory located at the Advanced Technology Research Facility, C2007.

3. REFERENCES

- 3.1. CoolCell User Manual
- 3.2. HSL_EQ_022.01: Use of CoolCell Device for Control-Rate Cell Freezing
- 3.3. HSL_EQ_008: Use and Maintenance of -80°C Freezers in the HPV Serology Laboratory
- 3.4. HSL_GL_001: Waste Disposal at the Advanced Technology Research Facility
- 3.5. HSL_GL_002: Equipment Qualification and Calibration in the HPV Serology Laboratory
- 3.6. HSL_GL_003: Good Documentation Practices for the HPV Serology Laboratory
- 3.7. HSL_GL_004: Laboratory Notebook Control and Use for the HPV Serology Laboratory
- 3.8. HSL_GL_007: Reagent and Chemical Expiry in the HPV Serology Laboratory
- 3.9. HSL_GL_008: Laboratory Flow and Gowning Procedures for the HPV Serology Laboratory
- 3.10. HSL_GL_009: HPV Serology Laboratory BSL-2 Procedures
- 3.11. HSL_GL_010: Control and Request of Documents in the HPV Serology Laboratory

4. RESPONSIBILITIES

- 4.1. The Research Associate, hereafter referred to as analyst, is responsible for reviewing and following this procedure.
- 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.

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5. REAGENTS, CHEMICALS AND EQUIPMENT

- 5.1. CoolCell
- 5.2. -80°C Freezer
- 5.3. Cryovials
- 5.4. 293TT cell Freezing Media (HSL_GL_006, Section 19)

6. HEALTH AND SAFETY CONSIDERATIONS

- 6.1. 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, safety glasses, closed-toe shoes, and non-latex gloves.
- 6.2. Refer to the respective SDS when working with any chemicals.
- 6.3. Refer to “HSL_GL_001: Waste Disposal at the Advanced Technology Research Facility” regarding waste disposal processes at the ATRF.

7. DEFINITIONS

Term	Definition
FME	Facilities, Maintenance and Engineering
HPV	Human Papillomavirus
HSL	HPV Serology Laboratory
SDS	Safety Data Sheets
SOP	Standard Operating Procedure

8. OPERATION

- 8.1. If the CoolCell has been recently used:
 - 8.1.1. Disassemble the parts to check for accumulated moisture.
 - 8.1.2. The bottom vent can easily be removed from the base by inserting a finger through the base vent hole, push out the alloy diffuser plate and thoroughly dry the plate and inner base chamber.
 - 8.1.3. Make sure the base vent is dry.
- 8.2. Assembly of the CoolCell Device:
 - 8.2.1. Insert the base vent into the foam base from the underside. (see picture below)

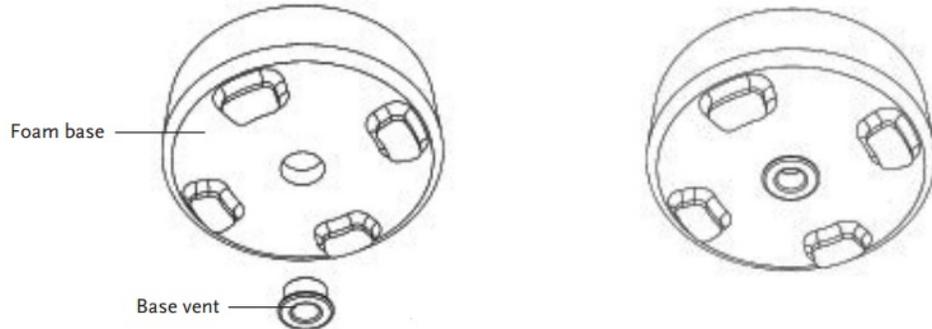
Note: The vent flange should be on the outside of the CoolCell.

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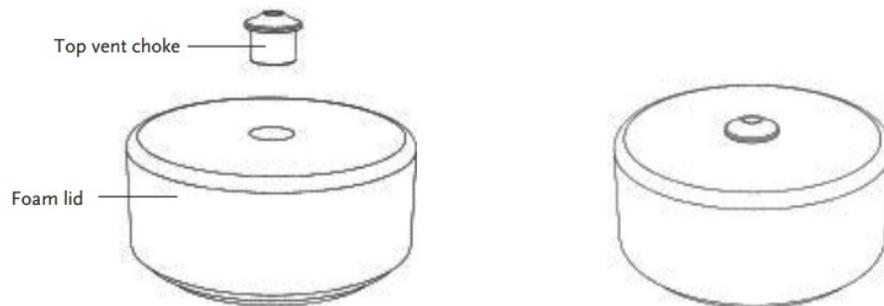
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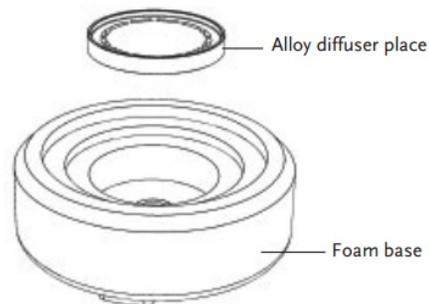


- 8.2.2. Insert the top vent choke into the foam lid from the top side of the lid. (see picture below)

Note: The tapered flange should be on the outside of the CoolCell.



- 8.2.3. Insert the alloy diffuser plate into the base cavity. The diffuser plate is reversible and cannot be inserted incorrectly. Ensure that the plate is all the way at the base of the chamber. (see picture below)



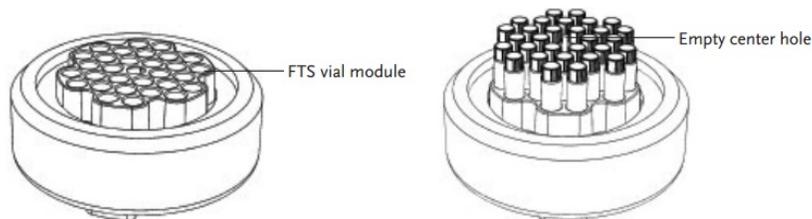
- 8.2.4. Insert the plastic FTS Vial Module into the base and make sure that the skirt of the module is evenly seated on the foam shelf.

- 8.3. Use of CoolCell Device for Control-Rate Cell Freezing:

Note: CoolCell module must be pre-equilibrated to the vial/sample temperature to prevent a rise in vial/sample temperature.

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- 8.3.1. Place 30 cryovials/tubes containing 1 mL of freezing medium into the module. Alternatively, the FTS Vial Module may be filled with vials remotely and then placed into the CoolCell. (see picture below)



Note: CoolCell is designed to achieve the ideal freezing rate when loaded with 30 cryovials/tubes, each containing 1 mL of freezing media. If less than 30 vials of cells are to be frozen, fill the remaining positions with similar vial containing 1 mL of freezing medium.

- 8.3.2. Place the lid onto the CoolCell base making sure that the mating surfaces form a complete closure.
- 8.3.3. While supporting the CoolCell FTS30 base, transfer the unit to the -80°C freezer space previously selected for the freezing process.
- 8.3.4. Make sure that nothing is sitting on top of or can fall onto the top of the CoolCell module.
- Note:** Do not stack CoolCell units on top of each other. Each unit needs to be free of any overhead obstructions to ensure proper ventilation.
- 8.3.5. Place a notice on the freezer door requesting that the door not be opened during the freezing process as opening the door during the freezing process may cause a deviation.
- 8.3.6. Allow a minimum of 3 hours for the freezing process.
- 8.3.7. CoolCell will approach the final equilibrium temperature within 4 hours.
- 8.3.8. Document the activity performed on HSL_EQ_022.01: Use of CoolCell Device for Control-Rate Cell Freezing.

9. ATTACHMENTS

- 9.1. Not applicable

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10. REVISION HISTORY

Revision Start Date	Version #	Changes	Reasons
06Apr17	New	Create new SOP for Controlled-rate cell freezing using a CoolCell device	Currently no SOP

Use of CoolCell Device for Control-Rate Cell Freezing

Form ID: HSL_EQ_022.01
Associated SOP: HSL_EQ_022

Version 1.0

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Equipment ID: _____

Date	Initials	Time at -80°C Freezer		Activity Performed
		Start:	End:	

Comments:

N/A

Review By/Date:

QA Review By/ Date: