

Standard Operating Procedure

SOP028

Title: Temperature Monitoring of Refrigerators & Freezers

Location: CBE Laboratories

1. PURPOSE

To describe how the temperature will be monitored in laboratory refrigerators and freezers.

2. SCOPE

The scope of this SOP is to describe the procedure that should be followed to monitor the temperature of laboratory refrigerators and freezers used for the storage of samples and reagents in the laboratories of the Centre for Biological Engineering (CBE) and T208b Tissue Engineering Laboratory (Wolfson School). The procedure for monitoring the temperature of the Cold room is also described.

3. RESPONSIBILITIES

CBE Laboratory Users

- (i) It is the responsibility of ALL Laboratory to be vigilant of any problems with fridges, freezers and the Cold Room and to report them to the Laboratory Manager.

Responsible Person (RP)/Laboratory Manager (LM)

It is the responsibility of the Laboratory/Quality manager to:

- (i) It is the responsibility of the responsible person to monitor & react to the temperature monitoring alarm panel in the external corridor.
- (ii) Regularly inspect the fridges and freezers to look for signs of too much ice, samples becoming frozen in the fridge or puddles of water, all indicating potential problems with the equipment.
- (iii) Perform and record monthly freezer maintenance checks

4. EQUIPMENT AND MATERIALS

- All Fridges & Freezers located in the CBE & Tissue Engineering Laboratory
- Cold Room in CBE

Version 006

Effective Date: 19th December 2019

Review 19th December 2021

Written by: C.Kavanagh	Reviewed by: A.Chandra	Approved by: R.I.Temple
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5. PROCEDURE

5.1 Temperature Monitoring of refrigerators, freezer & -80 C Freezers

- i) All fridges & freezers have been connected to a temperature monitoring system. If the temperature goes out of the specified range an alarm will sound on the display board located in the External corridor.

- ii) If the alarm sounds the responsible person must be alerted. They should check the display board to identify which piece of equipment is alarming. The alarm can be muted but the cause must be investigated by manually checking the equipment.

5.2 Temperature Monitoring Schedule for -20 and -80 Freezers

- i) -20 and -80 Freezer temperatures must be checked and recorded using a calibrated thermometer every month by the responsible person.

- ii) The responsible person must monitor the results and any abnormal results reported to the laboratory manager.

- iii) If a trend is noticed that may indicate an issue with the equipment this must be investigated. Users of this equipment should be advised to move material to another freezer until the problem is resolved.

5.3 Temperature Monitoring of the Cold Room

- (i) The Cold Room has a digital display of the temperature.

- (ii) The cold room is connected Temperature monitoring system. If the temperature goes out of The specified range an alarm will sound on the display located in the External corridor.

- (iii) If the alarm sounds the responsible person must be alerted. They should check the display board to identify which piece of equipment is alarming. The alarm can be muted but the cause must be investigated by manually checking the equipment.

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5.4 Equipment Malfunction

- (i) If any part of the equipment fails or malfunctions, the user should contact the Laboratory Manager. With permission of the Lab Manager the user should consult the Operator Instruction Manuals to access fault finding, error displays and troubleshooting procedures.
- (ii) All problems and corrective actions should be recorded in the Maintenance Log which is located outside each respective laboratory.
- (iii) If the equipment fails to work or malfunctions and cannot be rectified according to troubleshooting procedures detailed in the Operator and Users Manuals the Laboratory Manager must be informed and a "Do Not Use" notice should be posted on the equipment. Contact the manufacturer for advice and coordinate with the Lab Manager for external maintenance and servicing.

6. DOCUMENTATION

The following records are outputs of this SOP:

- QS-FORM-010 – Cleaning and Maintenance record for Fridges & Freezers
- HTA-PR-011 – Freezer Maintenance Schedule

These records will be filed in the equipment file or otherwise archived for future review or retrieval.

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SOP Version History

Version Reviewed	Date Revised/ Reviewed	Revision Summary	New Version Number
1	13 January 2010 Revised by A. Chandra	<ol style="list-style-type: none"> 1. Replaced Wolf Fridge/Freezer with Labcold SparkFree Fridge Freezer 2. Corrected the locations of all fridges and freezers. 3. Added Location H23 to the SOP as the Labcold fridge and Labcold freezer have been moved there. 4. Removed reference to Wolf Fridge which was left behind in the Wolfson School labs. 5. Added reference to the CBE equipment numbers 	2
2	15 January 2010 Revised by Q. Rafiq	<ol style="list-style-type: none"> 1. Included Labcold Sparkfree Refrigerator (RLPR09043) and Labcold Sparkfree Freezer (RLVF14201). 2. Added Location H25 to the SOP as new Labcold Refrigerator and Freezer are installed there. 3. Added MSR 145 data logger for Labcold Sparkfree Refrigerator (RLPR09043). Data logger number is 302831. 4. Added MSR 145 data logger for Labcold Sparkfree Freezer (RLVF14201). Data logger number is 302832. 	3
3	3 rd October 2012 Reviewed by C. Kavanagh	<ol style="list-style-type: none"> 1. Major review due to introduction of temperature monitoring system 2. Transfer onto new lean SOP template 3. Minor changes to responsibilities 4. Removal of section regarding the use of data loggers 5. Additional fridges, freezers & - 80 freezers to equipment section. 6. Changes to the procedure for recording temperatures for the – 80 C freezers. 	4
4	7 th December 2016. Reviewed by C.Kavanagh	<ol style="list-style-type: none"> i)Annual Review ii)Removed the statement about manually recording temperature of -80 freezer. 	5

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		<p>iii)Added a statement about It being the responsibility of the responsible person to monitor & react to the temperature monitoring alarm panel in the external corridor.</p> <p>iv)Added a section about temperature monitoring of equipment & procedure for checking & responding.</p> <p>v)Added a statement about recording maintenance on the record sheets.</p>	
5	19 th December 2019 by C.Kavanagh	<p>Annual review</p> <p>Added a section about new temperature monitoring using calibrated thermometer. Added a new freezer maintenance record template</p> <p>This SOP will be updated again when new system installed in 2020</p>	6

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