James Hogg iCAPTURE Centre for Cardiovascular and Pulmonary Research

STANDARD OPERATING PROCEDURE

Title:	**Snap Frozen Tissue**		
Procedure:	BB_HIST.006.01	**Supercedes:**	none
Originator and Date:	Crystal Leung 29OCT2008	**Effective Date:**	29OCT2008
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Revision History		
Date	**Reviewer**	**Summary of revision**
21Apr2009	Crystal Leung	Reformatted to iCAPTURE format

Purpose

Adherence to this SOP will ensure that Biobank specimens are processed in a way that is safe, standardized and expedient, thereby guaranteeing that the use of frozen tissue for specific projects (e.g., DNA, RNA and proteins work) are produced reliably and are of the highest possible quality.

Responsibilities

This procedure is applicable to the following teams:

- Biobank personnel who may be responsible for flash freezing specimens

Safety

- Treat tissues as biohazardous materials: wear personal protective equipment (PPE) throughout the procedure, including lab coat and disposable gloves.
- Cover work area with absorbent blue underpad. Refer to “Handling Biohazardous Materials” SOP (BB.001.01)

Definitions

Anti-coagulant	A substance that prevents the clotting or thickening of blood.
Biospecimen	All biological material of human origin, including organs, tissues, bodily fluids, teeth, hair and nails, and substances extracted from such material such as DNA and RNA
Dry Ice	Solidified carbon dioxide; dry ice sublimates at -78.5 C and is used mainly as a refrigerant.
Liquid Nitrogen (LN2)	Nitrogen gas that has been cooled to the liquid state (-196°C) and used to cool and store cells in a frozen state
Isopentane	An alternative freezing medium to liquid nitrogen; liquid at room temperature.
PPE	Personal Protective Equipment. The equipment and clothing required to mitigate the risk of injury from or exposure to hazardous conditions encountered during the performance of duty. PPE includes, but is not limited to: face shields, lab coat, goggles and gloves.
SOP	Standard Operating Procedure. Document used to control the methods and requirements by which personnel will perform their activities.

Materials and Equipment

The materials, equipment and forms listed in the following list are recommendations only and may be substituted by alternative/equivalent products more suitable for the site-specific procedure.

Aluminum foil	Styrofoam box
Permanent marker	Dry Ice
Liquid Nitrogen canister	Long handled forceps
Liquid Nitrogen	

Procedures

1. Before starting, cut foil into appropriate sized squares and label the foil with the specimen ID number (Biobank, CR(S), PRL) and description (i.e. H1 or LVFW)
2. Upon archiving the fresh tissue in accordance with the appropriate archiving SOP, wrap the fresh tissue portion into the foil square ensuring that all corners are secured
3. Using long handled forceps, submerge the foil wrapped portion into LN2 (or alternatively, can use isopentane) for approximately 5-10 seconds.
4. Place the specimen on the bed of dry ice in the Styrofoam container.

5. Repeat this procedure for all specimens.
6. When all are complete, transfer the specimens in to appropriate containers and store in -80°C freezer.