LANDMark BioBank

Manual of Operations

(Incorporating Standard Operating Procedures)

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Sponsor: JDRFI*

Prepared by: Anterior Eye Lab

Institute of Health and Biomedical Innovation
Queensland University of Technology
60 Musk Ave, Kelvin Grove 4059 Australia

Cardiovascular Research Group

Division of Cardiovascular and Endocrine Sciences
University of Manchester
Manchester M13 9NT United Kingdom

*Juvenile Diabetes Research Foundation International

Table of Contents

1 Overview

This tissue banking initiative is an adjunct to the JDRFI and NHMRC funded 5-year clinical trial entitled "Longitudinal Assessment of Neuropathy in Diabetes using novel ophthalmic Diabetic Markers", also referred to as LANDMark Study (the full title of this study as originally submitted to JDRFI in Sept 2007 is "A longitudinal study of ophthalmic markers of neuropathy in Type 1 diabetes"). Specifically, the LANDMark BioBank is a JDRFI initiative located at the Institute of Health & Biomedical Innovation at Queensland University of Technology (QUT), Australia, and the University of Manchester, United Kingdom. The purpose of the facilities is storing and managing ethically consented blood, other tissues and matching clinical trial data. The BioBank is a resource that will become available in the future to researchers throughout the world to support research investigating biomarkers of diabetes and its complications, improving or creating diagnostic tests and identifying potential new treatments for diabetes and diabetic neuropathy. The JDRFI has funded and equipped a dedicated laboratory with high-precision equipment for preparation of specimens. This equipment includes a -80ºC freezer and may include a vapour phase liquid nitrogen storage vessel (-196ºC) and which have the capacity to house in excess of 50 000 tissue and blood samples. The samples collected from study participants will be stored in cryogenic vials that help preserve the tissue's proteins and genetic material almost indefinitely.

The specimens, with matching clinical data, will be donated by consenting participants while enrolled in the LANDMark Study. Participants will have the option of consenting to the research team collecting a small additional sample of blood and/or skin tissue. These specimens are processed and stored at the LANDMark BioBank, initially located at two sites: Brisbane, Australia and Manchester, UK. These samples are stored under a unique code with no information on the participants' identity.

Potential outcomes from tissue research include finding potential causes of Type 1 diabetes or identifying factors predisposing the development of diabetes and its complications, and developing vaccines, drugs or other treatments for diabetes and its complications. New methods for screening, diagnosis and evaluation of diabetes are likely to make a significant impact on patient care in the future. Researchers who are part of an ethically and scientifically approved research project will be able to apply to access samples from the LANDMark BioBank.

2 Introduction

Blood and other tissue-based biomarkers are emerging as one of medicine's significant clinical research tools, resulting in enhanced development of pharmaceuticals and improved diagnosis of individual health conditions. Biomarkers are substances, structures or processes that can be measured in biological samples (such as urine, skin, blood, or saliva) that indicate, in the case of diabetes and its complications, susceptibility, or predict the onset and progression of disease. They help us to understand how chemicals move through the body and cause biological changes that can lead to illness and disease.

The overall goal of the LANDMark BioBank is to establish a repository of blood and skin biopsy specimens with detailed clinical information from a large number of unrelated patients with Type 1 diabetes and Latent Autoimmune Diabetes in Adults

(LADA) in order to facilitate studies into biomarkers of diabetes and diabetic neuropathy. The specific goals are to:

- Recruit and examine 288 Type 1 and LADA diabetic patients with and without diabetic neuropathy.
- Recruit and examine 116 non-diabetic participants without neuropathy.
- Collect baseline and longitudinal information on other markers through the LANDMark study.
- Maintain an inventory of the samples and clinical data for individuals included in the JDRFI funded LANDMark BioBank collection.
- Develop shared databases.

This set of LANDMark BioBank Standard Operating Procedures has been developed according to best practice and other guidelines as follows:

- International Society for Biological and Environmental Repositories (ISBER) Best Practices for Repositories: Collection, Storage and Retrieval of Biological Materials for Research (2008)
- NHMRC. Organ and Tissue Donation by Living Donors - Guidelines for Ethical Practice for Health Professionals (2007)
- Human Tissue Act 2004 (England, Wales, Northern Ireland)
- Australasian Biospecimen Network Biorepository Protocols (March 2006)
- Eiseman E et al. Case Studies of Existing Human Tissue Repositories: "Best Practices" for a Biospecimen Resource for the Genomic and Proteomic Era. Rand Science and Technology's (2003)
- Australian Privacy Act 1988 (Sections 95 and 95A)
- UK Data Protection Act 1998
- National Health and Medical Research Council of Australia (NH&MRC) National Statement on Ethical Conduct in Research Involving Humans (2007)
- NIDDK Central Repository for the "The Genetics of Kidneys in Diabetes (GoKinD) Study" Manual of Operations (GoKinD MOOP). See:
    - (https://www.niddkrepository.org/niddk/jsp/public/GOKIND/MOOP.jsp)

The LANDMark BioBank acknowledges the substantial assistance of staff of the Australian Prostate Cancer Collaboration BioResource in the development of these Standard Operating Procedures (SOPs).

2.1 Scope

The procedures within this document are for the practical guidance of all authorized personnel involved in the biological sample procurement and data collection of the LANDMark Study, housed at IHBI, Queensland University Technology, 60 Musk Avenue, Kelvin Grove, Australia and Core Technology, University of Manchester, United Kingdom.

2.2 LANDMark BioBank Management Committee

The LANDMark BioBank Management Committee (LBBMC) will meet once per year (or more if needed) to monitor, on a regular basis, the progress of the BioBank, its procedures, records, efficacy and quality of operations and any positive and negative feedback received from participants, staff or other stakeholders. Adverse outcomes and major procedural changes will be reported the ethics committees and the JDRFI.

The LBBMC accepts applications from researchers who wish to use biospecimens from the BioBank. The LBBMC will have policies and procedures relevant to the BioBank and will ensure they are adhered to. The Committee will also oversee the appropriate use of biospecimens and administer over any conflicts of interest or complaints.

After a two-year moratorium on access, the LBBMC will consider proposals every six months (or more if needed). This committee will meet by teleconference annually to review the progress of the LANDMark BioBank. In the unlikely occurrence of a serious event, an urgent meeting would be arranged.

The LANDMark BioBank Management Committee (LBBMC) will comprise of Nathan Efron (Chief Investigator, IHBI), Nicola Pritchard (Director, IHBI Site), Katie Edwards (IHBI), Rayaz Malik (Director, University of Manchester), Helen Nickerson (JDRFI) or Barbara Araneo (JDRFI) or designate(s). The Committee will also have a consumer representative, appointed by the Chief Investigator, as a member. Nicola Pritchard will act as LANDMark BioBank Project Manager.

2.3 Responsibilities

The site Director/Manager is responsible for all operations including compliance with current national, state and local regulations. The Directors/Managers will also ensure the BioBank operates within budget, and serve as a liaison to key users.

Personnel authorized and supervised by LANDMark BioBank Directors for biological sample procurement and processing, and data collection must familiarize themselves with these SOPs. Each person is responsible for ensuring that all procedures are performed as defined in the individual SOPs. The order for execution of the various procedures is indicated in the Flow Diagram (LBB SOP 1:Flow Chart).

The Directors shall arrange internal review and audits to ensure compliance with the SOPs and regulations.

2.4 Safety

Safety plans are used to prevent or to minimize injuries to employees. LANDMark BioBank personnel will adhere to the Health and Safety guidelines of the host Institution in the areas of biological, chemical, electrical, radiational, physical and fire safety. Staff shall undergo training (or induction) in possible hazards and precautionary measures e.g. staff members working with human research participants are encouraged to be vaccinated against hepatitis.

Personnel and visitors should wear appropriate personal protection wear (lab coats, long pants, covered shoes) and eye protection. Appropriate gloves are recommended in handling specimens.

2.5 Facilities and Equipment

Facilities including air conditioning, lighting, flooring, backup power, access, security systems, fire prevention systems and emergency preparedness are maintained by the host institution.

Equipment, including liquid nitrogen freezers, mechanical freezers and refrigerators are maintained and will typically be monitored by the BioBank staff. Where dry ice is employed, there should be adequate ventilation to ensure sufficient air or oxygen levels exist. A temperature log of the freezers will be maintained and recorded at least 3 working days per week. At QUT an alarm will be triggered at QUT Security if the temperature goes above -70ºC.

Operation of equipment by BioBank personnel will be strictly according to the operation manual specified by the manufacturer and the Standard Operating Procedures (SOP) specified by the LANDMark BioBank. All equipment is to be set up, used, maintained, calibrated, and serviced according to the manufacturer's instructions, the LANDMark SOP and the preventative maintenance schedules of the host Institution.

2.6 Training

All LANDMark staff are properly trained to perform the task required. Training associated with safety and SOPs will be recorded in the training record.

2.7 Standard Operating Procedures (SOP) Format

The SOP must include title, number, date, staff covered, protective wear, equipment, supplies, and step-by-step guidance.

The primary format of the SOPs is as follows:

- PURPOSE – This will expand on the title to briefly outline the purpose/objective of the SOP

- SCOPE – This will outline the staff covered by the SOP

- RESPONSIBILITIES – This will outline the responsibilities of individual personnel involved in the procedure

- PROCEDURE – This section will detail all the steps necessary to carry out the procedure. Reference to other related BioBank SOPs should be made in this section as necessary.

Date format on hardcopy documents for all BioBank Forms or SOPs requiring a date will be made on the form as follows: ……-…….-….. [dd - mmm - yyyy]

The Distiller database will automatically request, by dropdown multiple choice menus, that the date be entered in the form of day, the month and the year, e.g. 23-DEC-2007 i.e. 23rd December 2007.

2.8 Records Management

Records are maintained securely and confidentially. Records associated with the LANDMark BioBank include training documents, SOPs, equipment maintenance records, audit documents, informed consent documentation, collection and processing records, specimen storage location, sample distribution and quality control activities. Paper files containing confidential participant information are locked in records cabinets and access is limited to LANDMark team members. Electronic records are backed up daily on the QUT remote servers. All computer access is password protected and uses automatic timeout mechanisms (e.g. screensavers). Multi-level permission levels are determined by the Director.

Documents have unique titles, dates and version numbers i.e. version tracking. Dates have an unambiguous format where d stands for day, m for month and y for year. SOPs will be reviewed annually.

Corrections in paper records are initialed and dated; changes in electronic records are noted and tracked with name, date and reason for change.

Records will be accessible for inspection by authorized regulatory or sponsor personnel. The Director or delegate staff will oversee access of confidential participant information by regulatory agencies and other auditing groups.

2.8.1 Document Review

The Director [also referred to as the Manager or Project Manager] is responsible for overview of writing, for review and approval, and for maintenance of the master copies of all SOPs. The Director will maintain a historical file of rewritten SOPs for audit purposes, and will ensure that all SOPs are reviewed annually, on the anniversary of their initial acceptance.

The author(s) of an SOP is (are) responsible for the preparation of clear and concise practice guidelines for the procedure, which comply with the requirements of the current scientific, technical, safety and regulatory standards. Detail should be sufficient to guide a trained operator to perform the procedure, ensuring uniformity in the conduct of the activity.

Authorized personnel performing the duties are required to inform the Director when alteration to a procedure is required, in order that a review of the SOP can be conducted and the procedure amended accordingly. SOP documents must be reviewed at 12 months after previous review to maintain contemporary content.

2.9 LANDMark Study Database (via Slidepath Distiller™)

Distiller™, is manufactured by Slidepath (Ireland, UK). The LANDMark Study database can be populated and managed by the investigator's site using the Distiller application through a web interface, facilitating international collaboration. The database platform will be hosted by QUT and University of Manchester.

2.10 Quality Standards

The LANDMark BioBank has a system to ensure that current good practice is in place with documentation and traceability. These quality standards include a secure, limited-access facility where personnel are trained in all procedures which are documented. Internal audits are conducted; policies and procedures are documented in SOPs approved by the Director and updated using strict document control rules. Records are maintained with the respect to purchase of new equipment, maintenance and repair activities and equipment disposal. Records are maintained for critical materials such as item purchased, date of purchase, expiration date and MSDs where appropriate. Deviations to SOPs are recorded.

2.11 Identifiable and De-Identified Data

The LANDMark BioBank samples will have identifiers removed and replaced by a code. Each sample will have a participant and sample ID; however, no direct link between the sample and the participant's identity will exist. It will be possible to use the code to re-identify the person who donated the sample. The samples are therefore referred to as "potentially identifiable" (see below). A sample will only be re-identified in the instance a participant wishes to have their sample destroyed. Also, participant can indicate on the consent form if they wish to be contacted in future if a new finding is made from their sample that may have implications to their wellbeing or that of their family.

For the purpose of these SOPs, the following definitions, according to the National Statement on Ethical Conduct in Research Involving Humans (2007) Appendix 3 - Glossary of Definitions [from the Privacy Act, 1988 (Commonwealth)], will be applied:

Anonymous samples or data

See De-identified samples or data

De-identified (not re-identifiable, anonymous) samples or data

The process of de-identification can be irreversible if the identifiers have been removed permanently or the data have never been identified. These data are referred to as "de-identified". It should be recognized that the term "de-identified" is used frequently, in documents other than this statement, to refer to sets of data from which only names have been removed. Such data may remain "potentially identifiable."

Identified samples or data

Data that allow the identification of a specific individual are referred to as "identified data". Examples of identifiers may include the individual's name, date of birth or address. In particularly small sets of data even information such as a postcode may be an identifier.

Potentially identifiable (coded, re-identifiable) samples or data

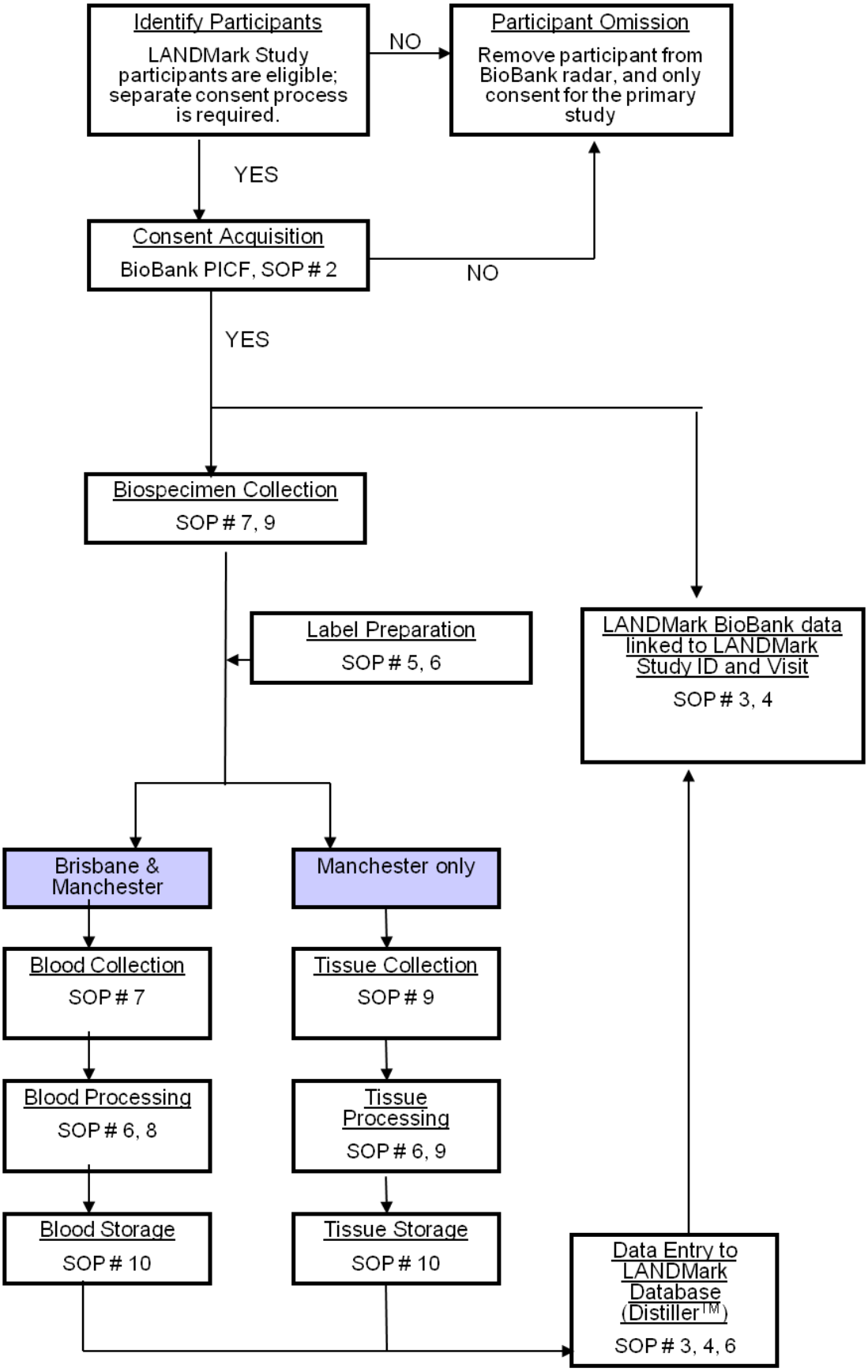
Data may have identifiers removed and replaced by a code. In such cases it is possible to use the code to re-identify the person to whom the data relate; that is, the process of de-identification is reversible. In these cases the data are referred to as "potentially identifiable".

The LANDMark BioBank Withdrawal of Consent Form (Appendix 10) also includes an option for participants to leave their biological samples in the BioBank, but to remove any identifiers from their samples. As such, the samples go from re-identifiable to de-identified.

3 Standard Operating Procedures

Standard Operating Procedures (SOPs) include all the processes and procedures for the LANDMark BioBank for both the Brisbane and Manchester sites.

SOP 1: Flow Chart



SOP 2: Obtaining Informed Consent

1. PURPOSE

To describe the procedures required to obtain informed consent from participants for:

- procurement and storage of biological samples
- procurement and storage of demographic, clinical, pathological and epidemiological data.

2. SCOPE

This procedure is applicable to research team members authorized to obtain informed consent from participants for the LANDMark BioBank.

3. RESPONSIBILITIES

Research team members must ensure that full informed consent is obtained from the participant prior to procurement of any biological samples or required data, and that all documentation is completed.

4. PROCEDURES

4.1 Identification of willing participants will be performed by the research team members.

4.2 An invitation is to be extended for participation in the BioBank project and further information provided. The objectives of the BioBank, and the process and procedures are to be explained, and informed written consent obtained from the participant by the research team member.

4.3 The participant must be provided with a copy of the current version of the LANDMark BioBank Participant Information and Consent Form (LBB PICF). A copy of the LANDMark BioBank Withdrawal of Consent Form will be provided to participants on request.

4.4 The research team member must ensure that all information and signatures required on the forms are complete.

SOP 3: Allocation of Participant and Sample ID Numbers

1. PURPOSE

To describe the participant and sample identification numbers for both Brisbane and Manchester sites of the LANDMark BioBank.

2. RESPONSIBILITIES

The LANDMark Project Manager is responsible for ensuring the sample identification numbers determined by the site can be accommodated in the database.

It is the responsibility of the site to communicate the nature of the sample identifiers used for the BioBank to the Project Manager via the LANDMark Study database (Distiller).

Authorized personnel acting for the LANDMark BioBank must ensure that all procedures for allocation of participant and sample ID numbers are correctly followed.

3. PROCEDURES

The participant ID is a three number and two or three letter identifier e.g 134 FGH or 268 LJ. In Brisbane the sample IDs are predetermined by the Nunc BankIt cryovials.

3.1 ALLOCATION OF PARTICIPANT AND SAMPLE ID NUMBERS

The numeric parts of the Participant ID are automatically assigned by the LANDMark database and the alphabetic, from the participant initials.

In Brisbane the sample ID numbers are predetermined by the Nunc BankIt cryovials. The Guthrie card IDs are assigned as a two letter four number ID, sequentially incremented eg. GC 0001, GC 0002 etc.

The ID numbers are unique to the participant sample, and must never be reissued if a sample is withdrawn or distributed.

SOP 4: Storage of Participant Information

1. PURPOSE

To describe the procedures required to store participant information for the sites of the LANDMark BioBank. Participant information is that recorded for the LANDMark Study.

2. RESPONSIBILITIES

The on-site Coordinators will ensure that all security systems are in place to guarantee confidentiality of participant information.

Authorized personnel will ensure that all personal, clinical, pathological and demographic information obtained from the participant is securely stored to preserve the confidentiality of all gathered information. Information on biological sample type, storage location and storage coordinates will also be securely stored.

3. PROCEDURES

Hardcopy documents:

Paper records are stored in a locked cupboard or filing cabinet [preferably fireproof] within a secure access area [preferably with a smoke detector and sprinkler system].

Note: Authorized persons should ensure that all LANDMark BioBank Forms for the collection of clinical and pathological information required for entry into the database are retrieved from the participant, investigator and pathologist.

Distiller™ Database:

Both the computer and the database used to enter and store participant information must be accessible only with the knowledge of independent security passwords. This knowledge must be restricted to authorized personnel.

The authorized personnel will enter all relevant information from the hard copy documentation onto the Distiller database maintained for the site.

Where researchers are allowed access to the Distiller database for data analyses, they will be issued a lower level of access, and only be permitted to view de-identified information.

Note: Regular back-up copies of the Distiller database for each site are the responsibility of the on-site Coordinators.

SOP 5: Preparation of Labels

1. PURPOSE

To describe the procedure for preparation of:

- specimen labels
- documentation labels

2. SCOPE

To ensure the format for labels is standardized across the BioBank sites, the actual procedure for printing labels within this SOP utilizing a Brady printer pertains only to the Brisbane site. Both sites will use Distiller allocation of Participant ID numbers.

Note: It is possible in the future that the Manchester site may print labels using alternate printing system e.g. Zebra label printers.

3. EQUIPMENT AND MATERIALS

EQUIPMENT	MATERIALS
Computer with installed Brady® Identilab software Brady IP® 3000 Printer Brady® IdentiLab™ Laboratory Labelling System software Brady® Data cable with USB adapter Printer Cleaning Kit for TLS2200™ Thermal Labelling System	Brady IP Printer Ribbon R4300 Brady Thermatab™ Markers THT-133-461 (Wrap around labels)

4. PROCEDURES

4.1 Preparation of Specimen Labels

In Brisbane, this will be done using the Brady® IdentiLab™ Laboratory Labelling System software.

For all biological samples wrap around labels e.g. Brady Thermatab™ Markers THT-133-461 are to be used.

Note: Choice of this label type is dictated by suitability for long-term storage in vapour phase of liquid nitrogen (LN), and resistance to numerous laboratory chemicals.

Follow software instructions to print labels for cryovials similar to shown in Figure 1.

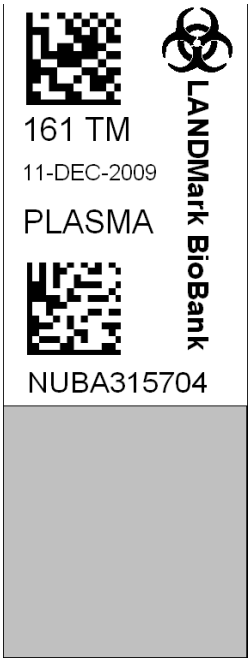


Figure 1. LANDMark BioBank cryovial label from Brisbane site showing printable area and wrap around area of label (in grey).

Item 1: Bar code / data matrix of Participant ID

Item 2: Participant ID (human readable format)

Item 3: Date of collection (tissue) or processing (blood products) of specimen date in format DD-MMM-YYYY

Item 4: Specimen Type e.g. PLASMA, SERUM), BUFFY C (buffy coat, Guthrie card (GUTHRIE), skin tissue

Item 3: Bar code / data matrix of Sample ID (human readable format)

Item 6: Sample ID (human readable format)

Item 7. Biohazard symbol

Item 8: LANDMark BioBank

Note: The appropriate number of specimen labels should be prepared as per:

LBB SOP 8: Processing Whole Blood to Blood Products, and

LBB SOP 9: Collection of Skin Punch Biopsy

See also: LBB SOP 3: Allocation of Participant and Sample ID Numbers

4.2 Preparation of Labels for Storage Boxes (where appropriate)

If storage boxes are to be used, this will be done using the Brady® IdentiLab™ Laboratory Labelling System software, or equivalent.

If the Brady system is used for storage box identification, the Brady Thermatab™ Markers THT-133-461 should be used.

Follow software instructions to print labels for storage boxes with barcode or data matrix and human readable format for box number and storage site.

4.3 Preparation of Labels for Documentation

Avery labels (e.g. Avery™ L7656) or Brady labels can be used for labels of documentation.

SOP 6: Labelling Biospecimens and Documentation

1. PURPOSE

To describe the procedure for the labelling of biospecimen samples, sample storage boxes (where appropriate) and documentation for the Brisbane and Manchester sites of the LANDMark BioBank.

2. RESPONSIBILITIES

Authorized personnel labelling biospecimen samples and other materials at the sites of the LANDMark BioBank must ensure that the appropriate label is used for each application, and that the Sample ID label numbers comply with the standard format.

3. PROCEDURES

All labels must be prepared as per SOP 5: Preparation of Labels using the Brady printer system (or equivalent) in combination with Distiller allocation of ID numbers.

Note: When labelling biospecimen samples avoid touching the adhesive area of the label whilst attaching to the container.

3.1 Labelling of Whole Blood Collection Tubes

The minimum information on blood collection tubes is: participant ID, date of collection, time of collection, initials of collector.

3.2 Labelling of Guthrie Cards

The Brady Thermatab™ Markers THT-133-461 are used at the Brisbane site.

Apply label to “label area” on Guthrie Card.

3.3 Labelling of Cryovials

The Brady Thermatab™ Markers THT-133-461 are used at the Brisbane site.

Labels should be attached to the cryovials prior to conducting sample processing. Contents should be visible.

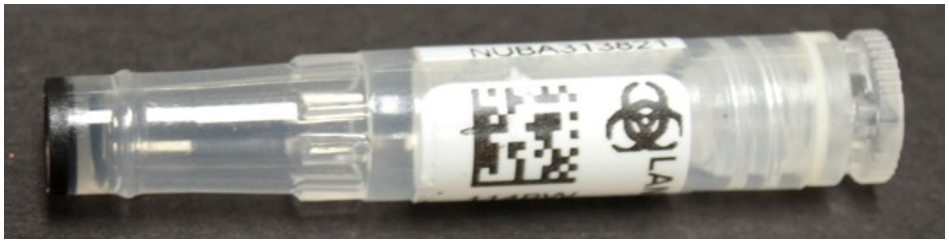


Figure 2. Nunc BankIt cryovial with label.

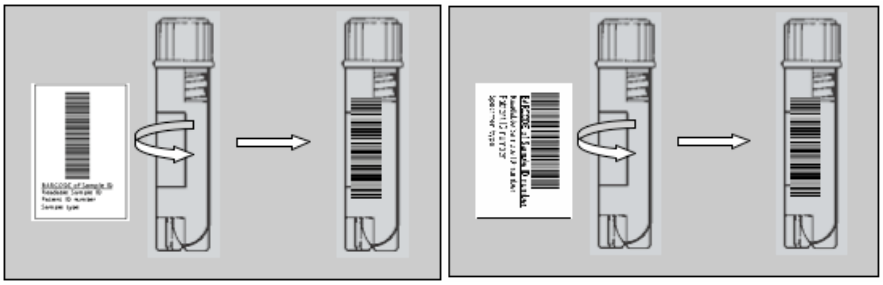


Figure 3. Labelling containers of participant blood or cryovials of blood products with alternative format labels.

3.4 Labelling of Histology Cassettes for Skin Tissue Cryovials (alternate)

Labels should be attached to histology cassettes prior to conducting sample processing.

Labels are attached to the histology cassettes with the barcode parallel to the ramped edge. Refer to Figure 2.

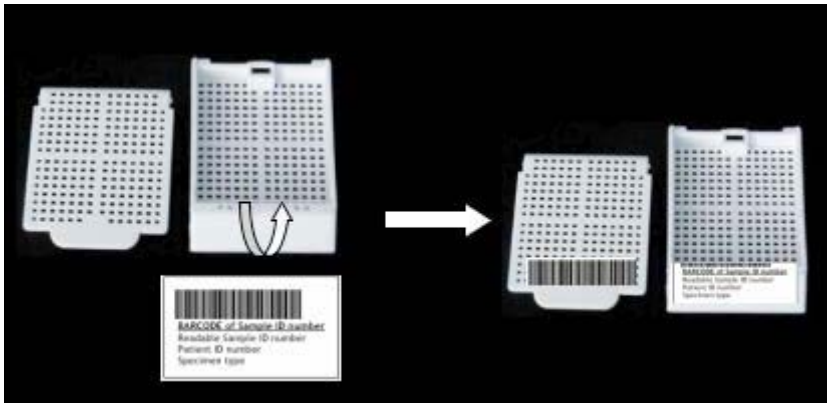


Figure 4.: Alternative labelling of histocassettes containing participant skin tissue samples.

3.5 Labelling of Storage Boxes

Placement of labels on storage boxes is dependent on the storage system employed. One Box Identification Label could be placed on the middle of the lower portion of the front side of the box, and a second containing the same box number could be placed on the lid of the box, if required.

Supplementary identification of boxes by permanent marker is recommended.

3.6 Labelling of Documentation

Where appropriate, Participant ID label in top right hand corner of each document can be used. Labels such as L7656™ labels (Avery™ labels) can be used for this purpose.

SOP 7: Collection of Whole Blood Samples

1. PURPOSE

To describe the procedures required for the collection of whole blood samples from participants in the LANDMark BioBank.

2. RESPONSIBILITIES

Authorized personnel must:

- ensure informed consent has been obtained prior to blood collection. Refer to LBB SOP 2: Obtaining Informed Consent
- collect or arrange collection of whole blood samples for the LANDMark BioBank
- ensure this SOP and relevant safety practices are followed
- ensure all blood samples are adequately de-identified
- ensure accurate records are kept and maintained on all samples processed
- ensure (where appropriate) the research nurse/phlebotomist has sufficient number of appropriate blood collection tube types (see Item 4 MATERIALS below)
- ensure (where appropriate) the research nurse/phlebotomist is aware of the volumes of blood to be drawn (8-9ml per tube).

3. HEALTH AND SAFETY

Authorized personnel carrying out this procedure must maintain safe working practices and observe all relevant Health & Safety guidelines of their respective institutions pertaining to the collection, transportation and handling of human blood.

This includes the appropriate use of Personal Protective Equipment (PPE), disposal of waste, disinfection & clean-up of spills, and personal hygiene.

4. MATERIALS

2 x 9mL K_2/K_3 EDTA (di- or tri-potassium ethyldiamino-tetra-acetic acid) or ACD-A (Acid Citrate Dextrose) additive blood collection tubes.

1 x 8mL SST (Serum Separator Tube) gel separator/clot activator blood tube

Blood collection set

Transport container for human blood specimens (e.g. biospecimen bags).

5. PROCEDURES

Blood may be drawn by either Research Nurse or Phlebotomist.

Up to 30ml total blood sample should be collected from the participant as:

1 x 8mL SST clot activator blood collection tube

2 x 9mL K_2EDTA or K_3EDTA or ACD-A additive tubes

Blood should be transferred to the BioBank laboratory, preferably in a biospecimen bag, at ambient temperature (i.e. not on ice) as soon as possible. A record of the sample arriving in the lab shall be noted, including lot numbers and expiry dates of collection tubes and cryovials (Appendix 1). The 3 tubes destined for the BioBank laboratory are to be inverted 6 times before being left to rest for at least 30 mins before spinning.

Under normal circumstances blood should be processed immediately upon receipt in the laboratory. Where blood has to be stored overnight in the laboratory before processing, the tubes should be refrigerated (4°C) upon receipt in the laboratory.

Irrespective of mode of collection, blood tubes should be adequately labelled with participant ID, date of collection and time of collection as minimum.

SOP 8: Processing Whole Blood to Blood Products

1. PURPOSE

To describe the procedures for the processing of participant blood samples into the following blood products:

- Guthrie card spots
- Plasma
- Buffy coat cells
- Serum

2. RESPONSIBILITIES

Authorized personnel processing whole blood samples must ensure that the procedures are followed correctly, and all documentation is completed.

3. HEALTH AND SAFETY

Personnel carrying out this procedure must maintain safe working practices and observe all relevant Health & Safety guidelines of their respective institutions pertaining to the collection, transportation and handling of human blood, according to universal precautions.

This includes the appropriate use of Personal Protective Equipment (PPE), Class II BioHazard Cabinets, and procedures for waste disposal, disinfection and spill clean-up, handling and transport of dry ice and liquid nitrogen, and personal hygiene.

4. EQUIPMENT AND MATERIALS

EQUIPMENT	MATERIALS
PPE	Sterile cryovials, 1.8 ml, Nunc®
Sterile plastic Pasteur pipettes	Blue cryovial cap inserts, Nunc®
Calibrated P1000 and P200 pipettes	Green cryovial cap inserts, Nunc®
Sterile P1000 and P200 aerosol pipette tips	Red cryovial cap inserts, Nunc®
Cryovial racks	Guthrie cards
Centrifuge	Ethanol or alcohol wipes
Counter-balance tubes	Liquid nitrogen
Dewar flask	Sterile syringe and needle (21g)

5. PROCEDURES

5.1 Processing Of Guthrie Cards

Guthrie spots are produced from K_2EDTA / K_3EDTA or ACD-A tubes only.

Prepare labels and label Guthrie card(s) according to LBB SOP 5: Preparation of Labels and LBB SOP 6: Labelling Biospecimens and Documentation.

Each whole blood sample should be mixed by gently inverting the tube 6 times.

The top and outside of the blood tube should be alcohol wiped before opening.

Using a sterile disposable pipette, aspirate approximately 500µl whole blood from the tube, gently place 40-50µl of the whole blood (one drop at a time) in centre of first circle of labelled Guthrie card until the circle is filled. Ensure each drop is completely absorbed through Guthrie card, before adding additional drops.

Replace cap on collection tubes and set aside.

Avoid touching the surface of the Guthrie card, or allowing it to contact any unclean surface.

Repeat procedure on remaining circles of the Guthrie card.

Do not apply blood to both sides of a Guthrie card.

Allow card(s) to air dry in back of BioHazard cabinet, or equivalent.

Place Guthrie card(s) into labelled paper envelopes for storage.

Store Guthrie card(s) according to LBB SOP 10: Storage of Biological Samples.

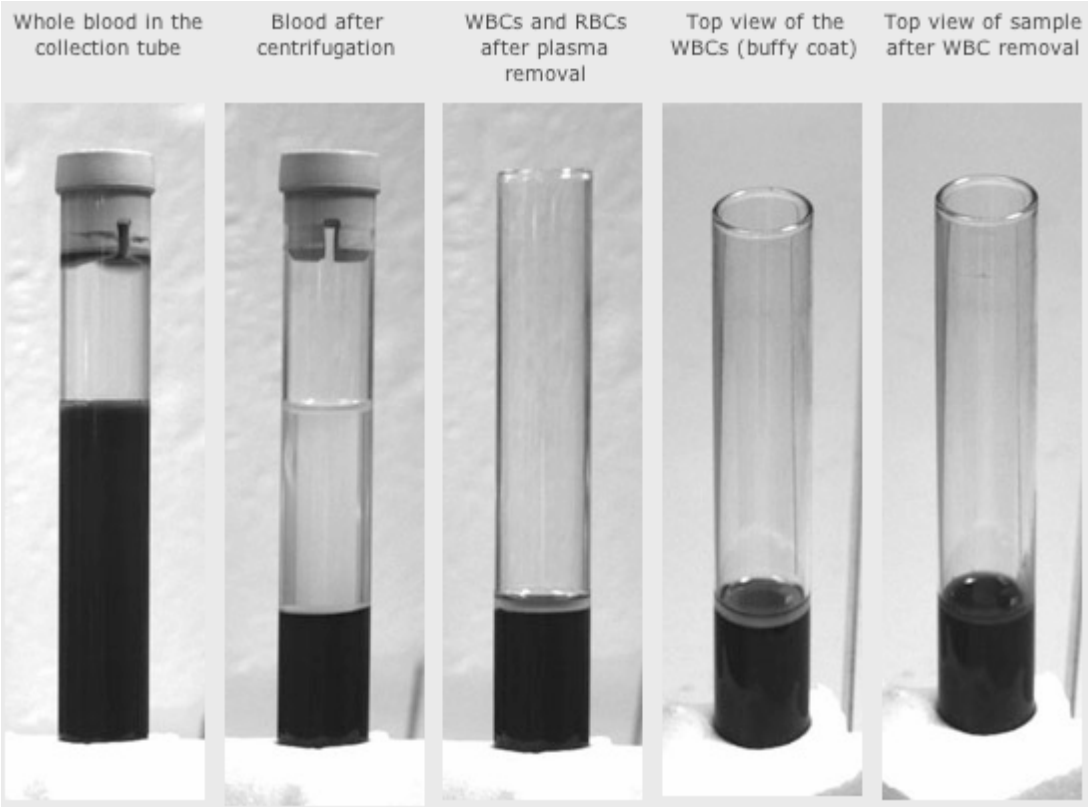


Figure 5: Blood processing for plasma and buffy coat cells, layers of blood products in EDTA blood tube after centrifugation at 2500 rpm for 10 minutes.

5.2 Processing of Plasma

Plasma is harvested from K_2EDTA / K_3EDTA or ACD-A tubes only (Figure 4).

Prepare labels and label storage cryovials according to LBB SOP 5: Preparation of Labels and LBB SOP 6: Labelling Biospecimens and Documentation.

Centrifuge each whole blood sample at 4000 rpm for 10 minutes. Ensure centrifuge rotor is balanced, and that the procedure follows that outlined in the respective manufacturer's instrumentation manual.

The top and outside of the blood tube should be alcohol wiped before opening

Using a calibrated / P1000 pipette with sterile aerosol tip or sterile disposable plastic Pasteur pipette, gently aspirate plasma without disturbing the buffy coat layer, leaving a small amount of plasma above the buffy coat layer for aliquotting directly into the cryovials. The aspirates from an individual participant can be combined in a separate tube.

Retain blood tube for buffy coat collection.

Using a calibrated / P1000 pipette with sterile aerosol tip or sterile disposable plastic Pasteur pipette, dispense 500µl aliquots of plasma into labelled 1.8 ml cryovials, without wetting the rim. Up to 16 aliquots should be collected.

Inset a red cryovial cap into each cryovial.

Place each cryovial into liquid nitrogen to snap freeze (where appropriate).

Transfer specimens into storage tray/box and store according to LBB SOP 10: Storage of Biological Samples.

5.3 Processing of Buffy Coat Layer

The buffy coat, a thin, greyish-white layer of white blood cells (leukocytes) and platelets covers the top of the packed red cells, following centrifugation at 4000 rpm for 10 minutes.

Buffy coat cells are harvested from K_2EDTA / K_3EDTA or ACD-A tubes, usually following harvest of the plasma fraction (see Figure 4 and section 5.2: Processing of Plasma).

Prepare and label storage cryovials according to LBB SOP 5:Preparation of Labels and LBB SOP 6: Labelling Biospecimens and Documentation.

Using a sterile 2ml syringe and 21G needle or sterile disposable plastic Pasteur pipette in a circular motion, gently aspirate the buffy coat layer. Of necessity, passenger red blood cells will be included. The aspirates from an individual participant can be mixed, or kept separate according to individual site practice.

Using a calibrated / P200 pipette with sterile aerosol tip or sterile disposable plastic Pasteur pipette, dispense buffy coat cells in approximately 200µl aliquots into labelled 1.8mL cryovials, without wetting the rim. Up to 2 aliquots from each K_2EDTA / K_3EDTA or ACD-A tube should be collected.

Inset a blue cryovial cap into each cryovial.

Place each cryovial into liquid nitrogen to snap freeze, where appropriate.

Transfer specimens into storage tray/box and store according to LBB SOP 10:Storage of Biological Samples

5.4 Processing of Serum

Serum is harvested from SST tubes only. Ensure blood is clotted before proceeding. (See Figure 6).

Prepare labels and label storage cryovials according to LBB SOP 5: Preparation of Labels and LBB SOP 6:Labelling Biospecimens and Documentation.

Centrifuge the SST tube at 4000 rpm for 10 minutes. Ensure centrifuge rotor is balanced, and that the procedure follows that outlined in the respective manufacturer's instrumentation manual.

The top and outside of the blood tube should be alcohol wiped before opening.

Using a calibrated pipette with sterile aerosol tip or sterile disposable plastic Pasteur pipette, gently aspirate serum avoiding contact with the gel layer.

Pipette serum in 500µl aliquots into labelled 1.8 ml cryovials, (collect up to 8).

Insert a green cryovial cap into each cryovial.

Place each cryovial into liquid nitrogen to snap freeze, where appropriate.

Transfer specimens into appropriate tray/box and store according to LBB SOP 10:Storage of Biological Samples.

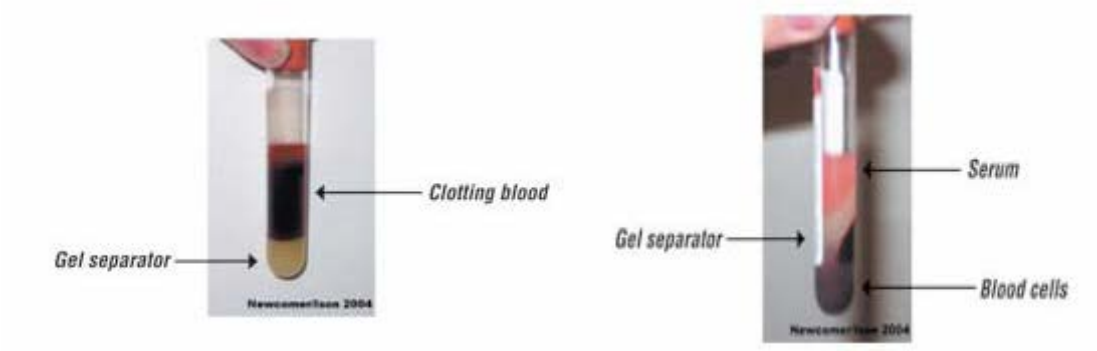


Figure 6: Blood processing for serum: layers of blood products in Serum Gel Separating blood tube before and after centrifugation at 2,500g for 10 minutes.

Wipe down the Bench, tube racks and equipment with 70% ethanol.~~Wipe down the Bench, tube racks and equipment with 70% ethanol.~~

5.5 Completion of Forms for All Blood Products:

Record all sample details into the LANDMark Study database.

SOP 9: Collection of Skin Punch Biopsy

1. PURPOSE

To describe the procedure for the collection, sampling and processing of skin punch biopsy tissue and transfer of tissue samples to the LANDMark BioBank (Manchester site).

2. RESPONSIBILITIES

Authorized personnel collecting and sampling skin punch biopsy tissue must ensure that:

- full informed consent is obtained prior to skin biopsy, according to LBB SOP 2:Obtaining Informed Consent
- all tissue sampling procedures are followed correctly
- all tissue samples are adequately de-identified
- all documentation is completed, and accurate records maintained on all samples
- sufficient quantities of appropriate forms are available for providing minimum operative information (where applicable).

3. HEALTH AND SAFETY

Personnel carrying out this procedure must maintain safe working practices and observe all relevant OHS guidelines of their respective institutions pertaining to the collection, transportation and handling of human tissues, according to universal precautions.

This includes the appropriate use of Personal Protective Equipment (PPE), and procedures for waste disposal, disinfection and spill clean-up, handling and transport of dry ice, Techni-Ice®, or liquid nitrogen, and personal hygiene.

4. EQUIPMENT AND MATERIALS

EQUIPMENT	MATERIALS
Protective glasses	Copy of signed participant consent
Surgical gloves	Relevant documentation (see 7.6)
Biopsy punch, 3mm	Liquid nitrogen
Sterile surgical blade and handle	Dry Ice, or Techni-Ice®
Sterile straight forceps	Cryovials, 1.8 ml, Nunc®
Gauze squares	Green cryovial cap inserts, Nunc®

Labels for specimen containers and tubes	O.C.T. compound
Absorbent underpad (Bluey)	No.22 Surgical blades
Paint brush	Aluminium foil squares (10cm x 6cm)
Cutting block	All purpose towels
Histology cassettes	Gelatine capsules, size 00
Approved LN transport container for biological specimens (Dry shipper)	Two pots with PBS-buffered 4% paraformaldehyde (PFA).

5. PROCEDURES

5.1 Collection of Skin Biopsy Tissue

Irrespective of the procedure, care must be taken to ensure that the tissue is collected and stored using aseptic techniques.

The patient will rest in semi-reclining position on the couch.

Inspect the foot dorsum and choose 2 points approximately 2 cm proximal to the metatarsal bone.

Clean the skin with betadine and inject 1% lignocaine. Wait 3-5 minutes and check the skin is insensitive to pinprick.

Incise the skin with 3 mm punch biopsy device X2, lift the skin with forceps and cut the bottom with scissors.

Stop the bleeding by pressing with gauze and close the wounds with steri-strips.

Cut 1 biopsy specimen immediately into 2 halves (1/2 biopsy to be fresh frozen (remaining 1/2 into 4% PFA for immunohistology).

The 2nd half biopsy goes straight into 4% PFA for immunohistology.

Bring frozen piece to CTF Building (3rd floor) in box filled with dry ice (Manchester Royal Infirmary).

Fix samples immediately in PBS-buffered 4% paraformaldehyde for 18-24 hours, rinse in Tris-buiffered saline and soak in 33% sucrose (2-4 hours) for cryo-protection.

Embed in OCT (Optimum Cutting Temperature embedding compound), rapidly freeze in liquid nitrogen and store in -80C.

Place each biopsy into a 1.8ml cryovial.

Insert a coloured cryovial cap into each cryovial.

Label cryovials according to SOP 5: Preparation of Labels and SOP 6: Labelling Biospecimens and Documentation

Complete forms:

LANDMark BioBank Tissue Collection Form

Record the relevant sample ID number on form: LBB Tissue Collection Form.

Transfer skin biopsy samples to LANDMark BioBank (Manchester) in dry shipper /Dewar flask (To prevent degradation of the sample, a Nalgene Mr Frosty or equivalent may be required to reduce the temperature of the tissue by 1°C per minute to the desired temperature)

Transfer specimens into appropriate storage container and store according to LBB SOP 10: Storage of Biological Samples

Record all sample details into the LANDMark Study database.

SOP 10: Storage of Biological Samples

1. PURPOSE

To describe the procedures for storage of biological samples after processing.

2. RESPONSIBILITIES

Authorized personnel storing biological samples must ensure:

- storage procedures are carried out as directed
- all documentation is completed, and accurate records maintained on all samples.

3. HEALTH AND SAFETY

Personnel carrying out this procedure must maintain safe working practices and observe all relevant Health & Safety guidelines of their respective institutions pertaining to the collection, transportation and handling of human tissues, according to universal precautions.

This includes the appropriate use of Personal Protective Equipment (PPE), procedures for waste disposal, disinfection and spill clean-up, handling and transport of samples in dry ice, liquid nitrogen and at -80C, and personal hygiene.

4. EQUIPMENT AND MATERIALS

EQUIPMENT	MATERIALS
Ultracold -80C freezers	Storage boxes, with grid
Liquid nitrogen storage tanks	Storage box identification labels
Aluminium freezer racks	PPE
Block filing cabinets	
Slide Filing cabinets	

5. PROCEDURES

STORAGE OF TISSUE SAMPLES

All samples and sample boxes must be labelled according to SOP 6: Labelling Biospecimens and Documentation before storage.

Guthrie cards:

Guthrie cards should be stored in labelled paper envelopes in a cool dry place at room temperature preferably within a [fireproof] locked cupboard. In humid atmospheres, desiccant should be use to control moisture levels.

Guthrie cards must not be stored in plastic bags or plastic wrapping.

Plasma, buffy coat cells, serum:

- Cryovials containing the above products are stored in sample boxes or racks at -80C in an Ultracold freezer.

Skin biopsy samples:

- Cryovials containing skin biopsy tissue samples (with and without OCT) are stored in sample boxes at -80C in an Ultracold freezer.

Paraffin-embedded tissue:

- Paraffin blocked tissues are stored in a lockable room, which is temperature controlled and has a sprinkler system installed.

STORAGE PROCEDURE:

When transferring samples to storage boxes/racks, place the cryovials sequentially in the next available slot beginning in the top left hand corner.

Blood Products:

- Transport the processed blood products in the cryobox immersed in liquid nitrogen to the –80C freezer or liquid nitrogen tank in which they are to be stored.
- Complete the sample record forms.
- Lock the –80C freezer or liquid nitrogen tank.
- Record all sample details in the LANDMark Study database.

Fresh-Frozen Skin Biopsy Storage:

- Using long forceps and cryogenic gloves, transfer the fresh-frozen cores (in cryovials or histocassettes) from the liquid nitrogen dewar into the next sequential CryoBox designated for tissue storage in the –80C freezer or liquid nitrogen tank.
- Complete form: LBB Tissue Collection Form.
- Return the CryoBoxes to the designated location in the –80C freezer / LN tank.
- Lock the –80C freezer / LN tank.
- Record all sample details in LANDMark Study database.

Short-Term Formalin-Fixed Paraffin-Embedded (FFPE) Tissue Storage:

- Ensure all blocks received are present. Query any missing blocks.
- Transfer the transportation container(s) holding FFPE tissue for short-term storage to the designated block storage area.
- Lock the block storage room.
- Record all sample details in LANDMark Study database.

Long-Term Formalin-Fixed Paraffin-Embedded Tissue Storage:

- Transfer the FFPE skin biopsy tissue for long-term storage to the designated storage area.
- Label each block with the Participant ID number.
- Transfer each FFPE tissue block(s) per patient into the block filing cabinets in order of Participant ID number. The blocks should be stored upside down in the storage racks, i.e. with the LBB Participant ID number uppermost.
- Lock the block storage room.
- Record all sample details in LANDMark Study database.

RECORDING LOCATION AND RELOCATION OF SAMPLES:

For each new storage box and any subsequent movement of each storage box complete a new form: LBB Tissue Collection Form, and enter details to database (Distiller will subsequently flag all changes in storage location).

Note: LBB Biological Specimen Transfer Form.

SOP 11: Transfer to Secondary Storage

1. PURPOSE

To describe the procedures for transfer of biological samples to secondary storage.

2. SCOPE

These procedures pertain to the practice of transferring stored frozen samples to an alternate or secondary location, i.e. freezer to freezer or LN tank at the same location, or at a separate location at the same Institution, or a at a separate Institution.

These procedures apply to Brisbane and Manchester sites.

NB. For sample distribution to requesting researchers see: LBB SOP Researcher Specimen Distribution Form.

3. RESPONSIBILITIES

Authorized personnel storing biological samples must ensure:

- Preparation and storage procedures are carried out as directed
- All documentation is completed, and accurate records maintained on all samples

4. HEALTH AND SAFETY

Personnel carrying out this procedure must maintain safe working practices and observe all relevant Health & Safety guidelines of their respective institutions pertaining to the collection, transportation and handling of human tissues, according to universal precautions.

This includes the appropriate use of Personal Protective Equipment (PPE), procedures for waste disposal, disinfection and spill clean-up, handling and transport of samples in dry ice, liquid nitrogen and at -80°C, and personal hygiene.

5. MATERIALS

Storage boxes, with grid

Storage box ID labels

PPE

Institution Shippers Declaration for Dangerous Goods by Road

Outer packaging materials

Dry Ice, Techni-Ice or -80°C ice blocks

Biohazard Spill Clean Up Kit

6. PROCEDURES

6.1 Preparation Of Stored Frozen Samples For Transfer To Secondary Storage

Notes: All sample and sample boxes will have been previously labelled according to LBB SOP 6: Labelling Biospecimens and Documentation before initial storage.

The procedures for transferring cryovials containing skin tissue, plasma, buffy coat cells or serum are identical.

Pre-identify the samples for transfer to minimize the actual transfer procedure time.

Label new storage boxes for transfer to alternate site. The storage box ID number should bear the prefix 'TF" to denote its transfer purpose.

For each new storage box and subsequent movement of a storage box, complete form: LBB Biological Sample Transfer Form, identifying in the table for each sample to be transferred, its original location and final destination.

Remove original storage box from -80°C freezer to LN tank, and place onto Dry Ice, Techni-Ice or ice blocks at -80°C to maintain temperature as low as possible during sample transfer procedure.

Using forceps, transfer designated samples into new transfer box.

Return the original storage boxes to designated location in -80°C freezer/LN tank.

Lock the -80°C freezer / LN tank.

Complete and sign LBB Biological Specimen Transfer Form.

Photocopy form, temporarily retain copy, original to be forwarded with consignment of sample for recipient signature

6.1.1 Transfer to Intact Boxes of Samples From -80°C To Liquid Nitrogen Storage

Identify the storage boxes to be transferred to the liquid nitrogen storage facility.

Place boxes in a suitable container of dry ice.

Transfer to liquid nitrogen.

Record new storage details on LBB Biological Specimen Transfer Form.

6.2 Packaging of Sample For Shipment To Separate Institution

Pre-arrange adequate dry ice to maintain frozen state during transport of samples to secondary storage.

Package samples according to Institutional guidelines, completing form: Institution Shippers Declaration for Dangerous Goods by Road. One copy to be filed at primary site, 2 copies to accompany shipment.

Ship samples immediately after packaging.

Upon receipt at secondary site, store samples at designated location

Recipient to complete and sign front page of original LBB Biological Specimen Transfer Form.

Photocopy form, original to return to primary storage site, copy to be retained by secondary site.

6.3 Recording Transfer of Samples to Secondary Location

Record all details in database (Distiller will flag all changes in storage location).

SOP 12: Distribution to Researchers

1. PURPOSE

To describe the procedures for distribution of biological samples to researchers.

2. RESPONSIBILITIES

Authorized personnel distributing biological samples to researchers must ensure:

- Preparation and distribution procedures are carried out as directed
- All documentation is completed, and accurate distribution records maintained.

3. HEALTH AND SAFETY

Personnel carrying out this procedure must maintain safe working practices and observe all relevant Health & Safety guidelines of their respective institutions pertaining to the collection, transportation and handling of human tissues, according to universal precautions. This includes the appropriate use of Personal Protective Equipment (PPE), procedures for waste disposal, disinfection & spill clean-up, handling and transport of samples in dry ice, liquid nitrogen and at -80C, and personal hygiene.

4. MATERIALS

MATERIALS	PPE
Storage boxes, with grid	Glass microscope slides
Storage box identification labels	Outer packaging materials
	Dry Ice, Techi-Ice, or -80C ice blocks
	Biohazard Spill Clean Up Kit
	Institution Shippers Declaration for Dangerous Goods by Road

5. PROCEDURES

5.1 Preparation of Stored Tissue Samples For Distribution To Researchers

Notes: A list of samples for distribution to a researcher approved by the BioBank Committee will be received at each node from the Director/Project Manager.

Pre-identify frozen samples for transfer to minimize the actual transfer procedure time; this can be achieved by completing LBB Researcher Specimen Distribution Form, prior to sample retrieval.

The procedures for transferring cryovials containing skin tissue, plasma, buffy coat cells, or serum, or histocassettes of skin tissue are identical.

All samples and sample boxes will have been previously labelled according to LBB SOP 6: Labelling Biospecimens and Documentation before initial storage.

Sections cut from tissue biopsies can also be entered into Researcher Specimen Distribution Form.

5.1.1 Guthrie Cards

Label empty recipient paper envelopes with Participant ID numbers for Guthrie blot distribution.

Remove individual patient master Guthrie Card from original paper envelope, and cut a square containing one circle of blood from the sheet.

Grip the cut square with forceps well clear of the blood spot and place the square into the appropriate ID-labelled envelope for distribution.

Return the master Guthrie card to its original envelope and return to storage.

Should the forceps (or scissors) become accidentally contaminated with dried blood during the above procedure, the instruments must be decontaminated by wiping with Nucleoclean Decon Wipes (Chemicon #3097) before proceeding to the next sample.

Complete for all participants blots for distribution.

5.1.2 Frozen skin tissue, plasma, serum and buffy coat cells

Label new storage box(es) for transfer to researcher. The storage box should bear the 'Principal researcher's name' to denote its distribution purpose

Remove original storage boxes individually from -80C freezer or LN tank, and place onto dry ice, Techni Ice, or ice blocks at -80C to maintain temperature as low as possible during sample transfer procedure.

Using forceps, transfer designated samples into researcher distribution box.

Return the original storage boxes to designated location in -80°C freezer / LN tank.

Lock the -80°C freezer / LN tank.

Keep all tissue samples for distribution on dry ice while paperwork is completed.

5.1.3 Tissue Sections

Cut requisite number of sections off each block for the appropriate number of blocks requested for each analysis, and mount on labelled glass microscope slides [For example: a request may be made for approx 90 patients, i.e. 3 blocks from a 150 patient 5-block array].

Pack slides into slide box for dispatch.

Keep slides cool while paperwork is completed.

5.2 Sample Distribution Paperwork

Complete and sign form: LBB Researcher Specimen Distribution Form, identifying in the table each sample to be distributed by its participant ID, sample ID and sample type, or the details of any tissue microarray sections cut.

The upper table has provision to record details of 30 samples. Should additional samples be scheduled for distribution, additional lines can be added to the table if provision for the dispatch and receipt signatures is retained.

Photocopy form [LBB Researcher Specimen Distribution Form] twice, the original is to be kept at the site distributing the samples; both copies are to accompany the shipment of samples.

Tick 'Original Copy' box on original, and retain.

Tick 'Researcher Copy' box on one of the copies, and tick 'Signed Copy for Return to Project Manager' box on the other copy.

Attach form LBB Researcher Specimen Receipt Form to the copy of LBB Researcher Specimen Distribution Form designated to be returned to the LANDMark BioBank Project Manager.

On LBB Researcher Specimen Receipt Form, complete the sections:

i) Site Distributing Biological Samples

ii) Date Samples Dispatched

5.3 Packaging of Samples For Shipment To Researcher At Separate Institution

For frozen samples, pre-arrange adequate dry ice to maintain frozen state during transport of samples to researcher storage facility.

Package samples according to Institutional guidelines, completing Form: Institution Shippers Declaration for Dangerous Goods by Road. One copy to be filed at primary site, 2 copies to accompany shipment .

Enclose the 2 copies of the completed LBB Researcher Specimen Distribution Form, including attached LBB Researcher Specimen Receipt Form in a plastic sleeve, seal with tape, and enclose in package with samples.

Ship samples immediately after packaging.

5.4 Recording Transfer of Samples To Researcher

Record all details in database (Distiller will flag all samples distributed).

SOP 13: Researcher Access to Biological Samples

1. PURPOSE

To describe the procedures for assessment of applications by diabetes researchers to the LBBMC and to give access to the BioBank tissue collection.

2. RESPONSIBILITIES

Only the Project Manager, Chief Investigator, JDRFI personnel or delegated authority will engage in processing applications for researcher access to the BioBank tissue collection via the LANDMark BioBank Management Committee (LBBMC).

3. HEALTH AND SAFETY

Not applicable

4. MATERIALS

Not applicable.

5. PROCEDURES

5.1 Handling of Requests For Access To BioBank Tissue

Details of the overall application procedure are outlined in the BioBank Tissue Access Policy (to be determined).

5.5.1 Letter of Intent (L0I) and Full Application

Researchers will need to complete an LOI (to be determined). LOI can be forwarded to the Project Manager or delegated authority at any time.

If the LOI is complete and acceptable, it should be forwarded to members of the LBBMC for review. A reply email should be sent to the applicant (chief investigator) indicating the LOI will be reviewed at the next LLBMC meeting.

The LBBMC meets every 6 months. A teleconference should be arranged for the LBBMC to discuss any LOIs or Full Applications on the agenda, with the Project Manager or authorized delegate as Chairman.

The agenda for the LBBMC meeting will be issued by the Project Manager or authorized delegate. If the LOI is approved, the applicant will be asked to make a Full Application. These will go out to peer review unless a review from the NHMRC or other National body is provided.

The Project Manager or authorized delegate will convey to the intending applicant in writing the outcome of the LBBMC deliberations.

If the application is approved, the Project Manager or authorized delegate will determine with the researcher a timeline for supply of the required tissue (and data if requested), provide an acceptance letter outlining the conditions on tissue provision as per the Tissue Access Policy, and obtain a signed Material Transfer Agreement (MTA) document from the researcher (to be determined).

The Project Manager or authorized delegate will calculate and levy the researcher for the cost recovery fee.

The Project Manager or authorized delegate will collect annual progress reports from the researcher by June 30th. At the conclusion of the project the Project Manager or authorized delegate will obtain a formal report and arrange for any residual materials to be returned to the BioBank or destroyed.

SOP 14: LANDMark BioBank Management Committee

1. PURPOSE

To describe the procedures for the conduct of the LANDMark BioBank Management Committee.

2. RESPONSIBILITIES

Accept applications from researchers every 6 months (or more often if needed) who wish to use biospecimens from the BioBank.

Oversee the use of biospecimens and administer over any conflicts of interest or complaints.

Observe a two-year moratorium on access to biospecimens.

Monitor the progress of the BioBank and positive and negative feedback from all stakeholders, including participants about their participation.

Ensure all protocol changes are reported to the ethics committees and the JDRFI

Ensure all procedures are performed as defined in the individual SOPs.

3. HEALTH AND SAFETY

Not applicable

4. MATERIALS

Not applicable.

5. PROCEDURES

5.1 Membership

Table 1. The members contact details and role in project. The role in the project serves to indicate the potential conflicts of interest where appropriate.

Member	Role in Project
Nathan Efron, IHBI @ QUT n.efron@qut.edu.au	Principal Investigator
Nicola Pritchard, IHBI @ QUT n.pritchard@qut.edu.au	Research Team Member Project Manager
Rayaz Malik, University of Manchester Rayaz.A.Malik@manchester.ac.uk	Co-Principal Investigator
Helen Nickerson, JDRFI hnickerson@jdrf.org; or designate(s)	Sponsor

Consumer representative	Independent Appointed by the PI

5.2 Frequency and Format of Meetings

The Management Committee will confer annually, or as needed.

An urgent meeting would be arranged in the unlikely event of any serious event.

The Project Manager will submit a one-page report by the due date to the Committee members by email. The due date will be the anniversary of the project commencement.

Members will respond accordingly by email with their acceptance, or recommendation for further evaluation or intervention.

NB. The protocols cite teleconference as the intended means of conducting meetings, however, for improved efficiency email will be used unless the Committee(s) feels it is unable to meet its responsibilities by the means described above.

5.3 Communication Procedures, Timelines and Documentation

The one-page report and summary email to members will serve as documentation for each virtual meeting.

The Project Manager will prepare the summary and members will acknowledge (or otherwise) this summary as being a true and accurate record of the virtual meeting within 30 days of the anniversary/due date.

4 Abbreviations

°C	Degrees Celsius
Distiller™	Cancer database developed at Garvan Institute
DOB	Date of birth
EDTA	EthyleneDiamine Tetra-Acetic acid
g	Gravity
G	Gauge, as per hypodermic needle size
ID	Identification Number
IRB	Institutional Review Board
ISBER	International Society for Biological and Environmental Repositories
JDRFI	Juvenile Diabetes Research Foundation
K_2EDTA	dipotassium salt of EDTA
K_3EDTA	tripotassium salt of EDTA
LBB	LANDMark BioBank
ml	Millilitres
NIDDK	National Institute of Diabetes & Digestive & Kidney Diseases
NIH	National Institutes of Health
OCT	Optimal Cutting Temperature (compound)
OHS	Occupational Health and Safety
PICF	Participant Information and Consent Form
PPE	Personal Protective Equipment
REC	Research Ethics Committee
rpm	Revolutions per Minute
SOP	Standard Operating Procedure
SST	Serum Separator clot activator Blood Collection Tube
TLS	Thermal Labelling System
UR#	Unit Record Number
x	Multiplication factor
µl	Microlitre

5 References

1. International Society for Biological and Environmental Repositories (ISBER). 2008 Best Practice for Repositories: Collection, storage, retrieval and distribution of biological materials for research.2nd Ed.

2. Eiseman E, Bloom G, Brower J, Clancy N, Olmsted SS. Case Studies of Existing Human Tissue Repositories: “Best Practices" for a Biospecimen Resource for the Genomic and Proteomic Era. RAND 2003. Santa Monica CA.

6 Appendices

Appendix 1 LANDMark BioBank Sample Record

Appendix 2 LANDMark BioBank Tissue Collection Form

Appendix 3 LANDMark BioBank Equipment Record Log

Appendix 4 LANDMark BioBank Specimen Transfer Form

Appendix 5 LANDMark BioBank Specimen Destruction Form

Appendix 6 LANDMark BioBank Researcher Specimen Distribution Form

Appendix 7 LANDMark BioBank Researcher Specimen Receipt Form

Appendix 8 LANDMark BioBank Participant Information and Consent Form

Appendix 9 LANDMark BioBank Withdrawal of Consent Form