

# Breast Gross Specimen SOP

## CONTENTS

<b>RISK ASSESSMENT .....</b>	<b>2</b>
<b>0 INTRODUCTION .....</b>	<b>3</b>
0.1 Scope and purpose .....	3
0.2 Responsibility .....	3
0.3 References.....	3
0.4 Definitions .....	3
0.5 Related documents.....	3
<b>1.0 PROCEDURE AND METHODS.....</b>	<b>4</b>
1.1 Sampling of Breast Tissue for Biobank.....	4
A) <u>Mastectomy And Axillary Tail</u>	
B) <u>WLE / Lumpectomy / Wire Guided Biopsy</u>	
1.2 Post Sampling .....	5

## RISK ASSESSMENT

### Hazards:

1. Risk of inhalation and splashes from formalin.
2. Risk of cuts from sharps/scalpel blades.
3. Risk of infection from unfixed (fresh) specimens.
4. Burning due to contact with liquid nitrogen.

### Safety Measures:

1. Personal protective equipment *i.e.* aprons, white coat, gloves and eye protection must be worn at all times.
2. All specimens must be treated as potential Biohazards. Where possible specimens should be processed in a sterile manner in a laminar flow hood. Frozen sections are given priority in terms of laminar flow hood usage. In the event that the laminar flow hood cannot be used, a "clean" area on a sterile surface is sufficient.
3. Specimens from HepB/HepC/HIV/TB positive patients must be processed in the laminar flow hood.

See:      **LP-HIST-BRPS Breast Process**  
            **HAZARD RATING: 15-Significant Risk**

**LP-HIST-0001 Frozen Section (Fresh Tissue)**  
            **HAZARD RATING: 15-Significant Risk**

## 0 INTRODUCTION

### 0.1 *Scope and purpose*

High quality human breast cancer and normal tissue samples are required for basic and translational research. These biobanked tissues are the means by which novel molecular markers for cancer therapy, detection and prevention will be identified. However, biobank sampling must not compromise the pathologist's detailed examination, which will be the basis for the patient's further treatment. Therefore a pathologist must select the tissue samples for biobanking.

### 0.2 *Responsibility*

The Breast Cancer Pathologist and assigned Breast Cancer Registrar (consult weekly rota).

### 0.3 *References*

1. The CNIO (Centro Nacional de Investigaciones Oncológicas) tumour bank network (<http://www.cnio.es/ing/programas/progTumor01.asp> & <http://www.cnio.es/ing/programas/progTumor11.asp>).
2. International Society for Biological and Environmental Repositories or ISBER <http://www.isber.org/>
3. NCI Best Practices for Biospecimen Resources (<http://www.biospecimens.cancer.gov/practices/>)

### 0.4 *Definitions*

PPE – Personal Protective Equipment  
WLE – Wide Local Excision

### 0.5 *Related documents*

LM-HIST-0001: Frozen Sections  
WI-HIST-0013: Cut Up Guidelines for Breast Specimens

1.0 PROCEDURE AND METHODS

**1.1 Sampling of Breast Tissue for Biobank**

- 1.1.1 Consult the Patient's Request Form and Clinical data (e.g. X-Rays, Cytology, Histology), which are printed off on the morning of the operation. The mammography and histopathology reports are printed to help the pathologist to locate tumour(s) within the specimen.
- 1.1.2 The specimen is sampled on a "clean" surface prepared by the biobank scientist.
- 1.1.3 Where possible tumour and normal tissue are collected using an aseptic technique. The biobank scientist will provide sterile and RNAase-treated scalpels and forceps.
- 1.1.4 The specimen is examined by the pathologist to determine the location of clearly palpable tumour(s).

1.1.5 As re WI-HIST-0013:

**A) Mastectomy And Axillary Tail**

1. Give three dimensions of specimen in mm, 2 dimensions of skin, inspect nipple and skin.
2. Ink deep margin of specimen with black ink using paper or cotton wool, blot dry, coat with Bouin's and allow to dry before cutting.
3. Slice breast at 5-10 mm intervals in sagittal plane (i.e. plane of section that divides the body into left and right) leaving slices attached at skin surface. Do not slice axilla.
4. Give three dimensions of tumour; location, colour, consistency, circumscription, distance to deep resection margin (and distance to skin/nipple and other margins if close).
5. Examine, by inspection and palpation, for secondary lesions e.g. areas of DCIS etc.
6. At this point a quantity of tumour and normal tissue may be allocated for Biobanking (see 1.1.6-1.18).
7. Remove nipple for good fixation by cutting around the areola in a circle and then use scalpel to remove a cone of tissue as below.

**B) WLE/Lumpectomy/ Wire Guided Biopsy**

1. Inspect specimen x-ray for calcifications/stellate lesion.
2. Weigh specimen.
3. Give three dimensions of specimen in mm and dimensions of skin if present.

4. Ink whole specimen apart from any skin surfaces with black ink using paper or cotton wool, blot dry, coat with Bouin's and allow to dry before cutting.
5. Serially slice specimen in coronal plane (i.e. plane that divides the body into anterior and posterior) at 4 mm intervals, leaving slices attached and leaving sutures intact.
6. Inspect tissue around tip of guide wire and remove guide wire from curved tip end.
7. Note tumour dimensions x 3 in mm and record tumour colour, consistency, and circumscription.
8. Note distance to closest margin and 3 other margins in that plane. Superficial and deep margins are the least important.
9. At this point a quantity of tumour and normal tissue may be allocated to biobanking (see 1.1.6-1.1.8).
10. The quantity of normal tissue sampled in a WLE/Lumpectomy/ Wire Guided Biopsy is most likely to be less than that sampled in a Mastectomy specimen.
11. Again look for secondary lesions.

1.1.6 Generally, only tumours larger than 10mm in diameter are biobanked: this does not interfere with the diagnostic integrity of the specimen. Following neo adjuvant therapy, breast tumours are difficult to identify on gross examination, and so biobanking is carried out only on selected cases.

1.1.7 One section of tumour, optimally 10mm x 5mm, is given to the biobank scientist for aliquotting and processing. If at all possible, an additional section is taken for a biobank paraffin block. Paired normal non-fat breast tissue (grey-white streaks) samples are taken as internal controls for future researchers. Frozen sections of tumour and normal tissue are examined for QA.

1.1.8 The quantity of tumour and normal tissue allocated for biobanking depends on tumour size, and is at the discretion of the sampling Pathologist.

1.1.9 Occasionally, two tumours may be present in the same mastectomy specimen. Where possible both tumours are sampled, preferably with the largest tumour processed first. The relative positions and approximate sizes of each tumour should be communicated to the biobank scientist, to aid in the accurate labelling of Biobank samples.

1.1.10 Lymph nodes: a lymph node with a grossly evident metastasis can be sampled using the same guidelines as for the primary breast tumour. It also requires a complementary sample of normal breast tissue.

## **1.2 Post Sampling**

1.2.1 The specimen is placed in formalin and treated as a normal breast specimen.

1.2.2 Clearly note on the Request Form and specimen container that the specimen has been sampled for the St. James's Hospital Cancer Biobank. Return to specimen reception (Room CPL 117A).