

The Children's Hospital at Westmead Paediatric Tumour Bank

Standard Operating Procedure: Sample collection and Processing

Purpose

To obtain specimens from patients in compliance with ethical guidelines and to process these to be of maximal benefit to the end users (researchers using the specimens). Samples to be processed in a manner, which will optimise their availability.

Scope

Sample collection to cover all patients; oncology, late effects, bone marrow donors and normal control specimens.

1.0 Identification of Oncology patients and consenting process

1.1 Notification

Notification of newly diagnosed oncology patients is made by e-mail to Tumour Bank by one of the oncology research associates.

The Haematology registrar may also make the identification, particularly if the diagnosis is over a weekend or public holiday, and he/she will contact Tumour Bank.

At this time point Tumour Bank should try to obtain a specimen of blood preferably before treatment is commenced.

1.2 Consenting

Consent to store the specimens should also be obtained, the timing of this will vary depending on individual families. Ask the nurse caring for the child if they think it is a suitable time to talk to the parents about the Tumour Bank before speaking to them.

Consent forms for "normal" (non-malignant) patients are also available.

2.0 Sample Collection

2.1 Bone Marrow.

Bone marrow aspirates will usually be collected by the haematology registrar, who will notify Tumour Bank. The samples should be in an EDTA tube.

Bone marrow slides are also stored in the haematology department. Haematology will advise Tumour Bank when they have a full drawer.

2.2 Blood.

2.1.2 Inpatients

Camperdown Ward is the dedicated ward for oncology patients, however there can often be outliers, especially on Clancy, Faithfull Ward (Surgical), Commercial Travellers Ward (neurological), Variety Ward (infectious) and in the Intensive Care Unit.

Once an oncology patient has been identified, a request for a blood sample should be made. Complete a specimen request form and where possible get one of the oncology doctors to sign it. Speak to the nurse looking after the child and make them aware that a sample is being requested, to be collected at the time of the next routine

blood tests. Ask them where to leave the form – this will vary according to individual wards.

Requests are sometimes also made electronically by the medical staff using Powerchart. In this case the form is generated automatically and the nursing/collection staff will know to collect the sample.

Samples taken on Camperdown Ward will be placed in the Tumour Bank section of the small fridge in Catherine's (bone marrow transplant) room. This fridge should be checked daily. Samples from other wards will either be dispatched to Pathology via the air tube or will stay on the ward until they are picked up by Tumour Bank staff. In both cases either Pathology or the ward will page or ring Tumour Bank to make them aware a sample is available.

2.2.3 Outpatients

Check in oncology clinic (anaesthetic register) which patients are due for BM the following week. Any patients booked for bone marrows should also have blood collected if possible. Bone marrows are routinely collected every Mondays and alternate Wednesdays/Thursdays. Complete a request form and leave in the "fish bowl" for the collecting staff.

Check Tumour Bank database for consent status. If patient has not been consented, speak to parents in the oncology clinic – clinic reception staff will know what time patients appointments are due.

Specimens collected in the fish bowl will need to be collected by Tumour Bank around midday.

2.3 Solid Tumours

Tumour tissue is collected in the operating theatre for analysis by Histopathology. If there is any remaining tissue after frozen sectioning is complete they will store it in the -80°C freezer in the Histopathology laboratory.

Details of the specimens they have available are recorded in a book, "Tumour log" kept in the Histopathology laboratory. When removing specimens fill in the last column with the date removed. Transfer on dry ice.

Keeping samples as cold as possible, samples should be weighed and weight recorded. Large samples should be divided into smaller pieces. Specimens which are labelled with a patients name must be transferred to another tube.

2.4 CSF, Plasma etc

Occasionally other types of specimens may become available for Tumour Bank, or be deemed valuable to collect. These will come via pathology – biochemistry, haematology, microbiology or histopathology. When a specimen for Tumour Bank is identified, arrange collection with the appropriate department. (Will usually be in one of the fridges)

3.0 *Sample labelling and storage*

3.1 Labelling

Cryovials to be labelled with: medical record number
type of specimen – blood, bone marrow, tumour etc,
date

Aliquot specimens into labelled cryovials:

Blood – 2mls per tube

Marrow – 1.5mls per tube

Tumour – 1 piece per tube (NB large pieces should be
cut down and stored in several vials)

Volume of liquid samples (mls) or weight of solid tumour sample (g) to be written on
tube lids.

Note: internal thread cryovials only to be used for liquid nitrogen freezing and -80°C
storage.

3.2 Storage

3.2.1 Liquid samples are immersed in liquid nitrogen until frozen and then stored at -
80°C.

3.2.2 Solid samples to remain frozen at all times during weighing/cutting process
(keep on dry ice), then stored at -80°C

3.3 Record each sample in the Specimen Log Book and enter data on tumour Bank
database.