

TMA preparation

1.0 PURPOSE

This Standard Operating Procedure defines the requirements for preparation of TMA blocks and sections.

2.0 SCOPE

This protocol covers all TMAs prepared and provided by the Biobank.

3.0 RESPONSIBILITIES

Tissue Bank Managers at each site are responsible for ensuring this protocol is adhered to by their staff.

4.0 QUALITY CONTROL/ ASSURANCE

All tissue blocks used for TMA preparation must be pathology verified prior to use in TMA preparation. The relevant pathology department must provide documented verification.

4.1 Selection of blocks for TMA preparation

Suitable blocks for use in preparation of TMAs must meet the following criteria:

- 1- a minimum 50% tumour content or contain a concentrated tumour area able to be cored (the total block may have a low %tumour but it may be suitable for coring for TMA preparation because the tumour is concentrated).
- 2- A minimum tissue depth of 3-4mm.
- 3- For each TMA, select tumour blocks of similar depths as cores will need to be cut down to the smallest core depth in order to prepare an H&E

It is not uncommon for a small number of cores to slip out of the TMA when cutting sections. A cause for this has not been established however it is estimated to occur with approximately 4% of cores. For this reason the minimum number of cores per donor should not be less than 2 Normal and 3 Tumour.

Each TMA is supplied with primary pathology reports for each block used in its preparation, an H&E of a section of the TMA and pathology verification that the tumour/ normal cell content of each core matches the TMA template.

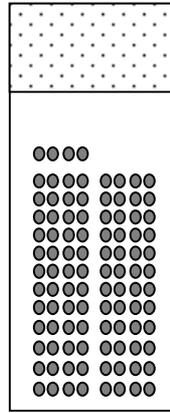
5.0 PROCEDURE

A TMA template has been created to ensure the Biobank uses a standard format for TMA preparation (T19 TMA specification sheet). An orientation core is positioned on the top left side and is generally a non-related tissue type used purely to identify the top of the slide.

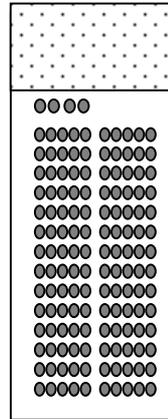
1. Pathology verified FFPE blocks are provided to the TMA preparing site
2. Site cuts cores and embeds
3. Cut 2 sections (approx 5µm thick) from TMA and stain (H&E). One section is supplied to the researcher; the Biobank should retain the other section.
4. Pathologist verifies tumour or normal content of cores in array (on T19)

TMA standard formats are:

Vertical Cores	Horizontal Cores	Total Cores	Core Diameter
10	10	100	0.6mm
12	8	96	1mm



96 x 1mm
cores



100 x 0.6mm
cores

NB:

- 1- cores should not be within 5mm of any slide edge**
- 2- orientation cores at top left of each TMA(as per TMA Template T19)**

6.0 SAFETY PRECAUTIONS

When handling any biological material extreme care should be taken and samples always handled as an infectious/ hazardous substance. Site OHS policies and procedures for handling hazardous materials must be adhered to.

7.0 GENERAL MATERIALS REQUIRED

- Microtome
- Slides (type as requested by researcher)
- H&E stain
- Tissue arrayer
- Embedding centre
- Microscope