

Tissue Microarray (TMA) Builder Kit

Instructions for use

The kit includes

- Two-piece mold (base and top)
- Two lifting screws
- Punch-extractor pen



With this Tissue Microarray Builder you can form a TMA block containing up to 24 different tissue sample cores with 2 millimeter diameter. TMA blocks may be cut as normal into consecutive sections of 2-4 μm each, as well as, stained and analyzed rapidly. This procedure does not require additional special accessories.

Preparing the recipient TMA paraffin block

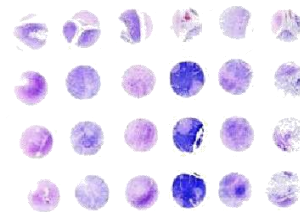
1. Screw the lifting screws into their tapped holes, and make sure the tips of the screws do not protrude beyond the bottom of the mold top. The mold top must lay flat on top of the mold base. The two guide pins position the mold top correctly.
2. Place a block-holder cassette into the mold inset (the cassette on the figure is only an illustration, almost all commonly used block-holder cassettes are applicable).
3. Fill both the mold and the cassette with liquid (56-60°C) paraffin.
4. Let the filled mold cool at room-temperature for about 20-30 minutes. Do not cool in a freezer or on a cold-plate; forced short cooling time can lead to cracking of the block. If the paraffin is not fully hardened, it can result a misshapen block, and distortion of holes.
5. Once the paraffin is fully hardened, lift the mold off by slowly turning both of the lifting screws clockwise at the same time. The fully hardened block will lift easily.
6. The resulting recipient paraffin block has 24 holes of 2.0 mm diameter each, and it is suitable for receiving 24 different tissue cores arranged in 6 rows and 4 columns.



Obtaining the tissue cores and preparing a TMA block

1. Identify the representative area on the previously stained tissue section then on the donor block. It may help to re-embed the donor block before extracting tissue cores, this gives some extra paraffin on top of the cores to avoid losing tissue during cutting.



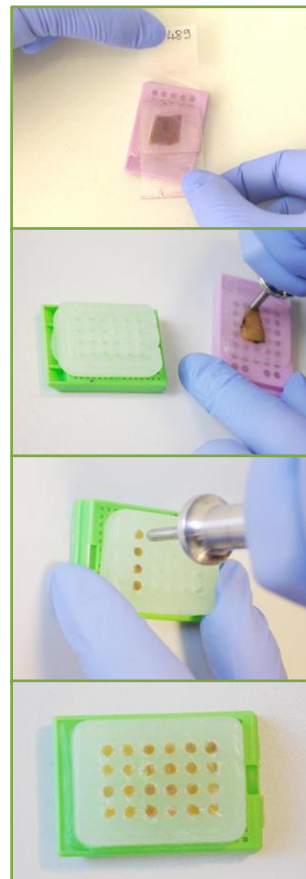


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2. The punch extractor has a spring-retraction action. With the plunger in the up position press the punch extractor perpendicularly to the block surface into the selected area in the donor block with a slight twisting motion (do not rock sideways); press in about 4.0 millimeters deep. Do not push the plunger down during this action. Pull the punch extractor out, the tissue core will be inside the tip. Preparing tissue cores correctly requires to practice coring using extra blocks not for diagnostic purposes. Coring operation depends on handling and pre-treatment of original tissues during fixation and embedding procedures, as well as, on the tissue structure (e.g. it is difficult to obtain cores from hard tissues like bone, cartilage, calloused connective tissue, etc.). The tip of the extractor is sharp, in a time of use, it must be changed.

3. Place the tip of the punch extractor over the selected recipient hole in the recipient TMA block by fixing it slightly at the orifice of the hole in upright position. Press the plunger down firmly without pressing the tip deeply into the block to avoid damaging either the block or the core. Do not allow the tip to lift from the surface of the block, in this case the core will protrude from the hole. After some practice the top surface of the inserted cores can be made equal. For proper sampling, at least two cores of each representative area should be taken. It is very important to identify the inserted tissue samples correctly.

4. If the TMA block is filled, place it in a 56-58°C oven for 10-15 minutes so that the cores and the paraffin of the recipient block can melt together slightly. The block may then be sectioned as usual.



Cleaning, maintenance, storage

- Remove paraffin contamination by heating or with a soft towel.
- Check the tip of the punch extractor pen, and remove paraffin residue. Check the proper action of the plunger.
- This device does not require special storage conditions. Protect it from dust, high temperature and mechanical damage.

Notes and warnings

- This device does not represent hazard for users under normal circumstances.
- The tip of punch extractor is sharp, incorrect use can cause hand injury. Do not use it for other purposes.
- Do not let the device and the accessories fall, because they can be damaged and deformed.

Ordering Information

Cat#	Description
20010.2	TMA Builder Kit, 2 mm (includes a two-piece mold, a set of two screws, a punch extractor pen)