

EQUIPMENTS AND SERVICES

MOLECULAR PATHOLOGY

EQUIPMENTS

Equipment	Manufacturer	Model	Equipment Self-service	Equipment with service
Microtome	Leica Microsystems	RM2125	yes	yes
Microscope	Olympus Optical	BX31TF	yes	yes
Automated IHC slide staining system	Ventana/Roche	Benchmark XT	no	yes
Cryostat	Leica Microsystems	CM1950110111	yes	yes
Histology manual tissue arrayer (TMA)	Beecher	4508-DM	no	yes
Tissue arrayer	Pathology Devices	TM Arrayer	no	yes
Slide scanner	Olympus Optical	VS110, BX61VSF	no	yes
H&E slide stainer	Shandon	Varistain XY	no	yes

SERVICES

Paraffin embedding of tissues in blocks

Fixed tissues will be embedded in paraffin blocks by the pathology department of the CHUM.

Microtome sectioning

The microtome is used to cut tissues embedded in paraffin. The sections are placed on slides and can then be stained by H&E, immunohistochemistry or immunofluorescence.

Microscopy

Observation of the tissues on slides can be done using the Olympus Optical BX31TF microscope.

Cryostat sectioning

The cryostat is used to cut fresh tissues, with or without OCT.

Automated IHC slide staining system

This autostainer can stain automatically immunohistochemistry slides, which considerably increase the reproducibility and liability of results. We can also use it to do immunofluorescence slide, but a part of the protocol have to be done manually.

H&E coloration

Combined or not with tissue sectioning, H&Es are useful to look at the histology of a tissue (stroma, epithelium, etc.). Staining process is automated.

Tissue microarray (TMA)

TMA's allow study of big patient cohort by using small punches from different regions of interest and different patients added on a unique paraffin block. TMA's can be made from a great variety of tissues. Punches are usually 0.6mm diameter, but can also be 1.0mm or 1.5mm. This method greatly reduces quantity of slides to use for a study, antibody cost and time of staining and analysis.

Cell pellet preparation

Cells growing in a petri dish can be formalin fixed, added in an histogel pellet and then embedded in paraffin to form a block. Cells can afterwards be used directly for sectioning or added to a TMA before staining.

Sampling of tissues in paraffin blocks (punch)

Using the tissue arrayer, tissue punches can be sampled from a paraffin block and put into a tube (for RNA or DNA extraction for example).

Retrieval of blocks and slides

After receiving patient consent form for the research project, blocks and/or slides can be retrieved from pathology for a biobank.

Microscopy with slide scanning

The microscopy slide scanning is performed using a VS110 microscope (Olympus). The slides can be scanned at 10X, 20X or 40X, in fluorescence or bright field. The microscope has five different fluorescent channels: DAPI, FITC, TRITC, Cy5 and Cy7. Images can be visualized using free software (OlyVIA).

Counseling in histology

The core facility members offer counseling on antibody specificity, binding quality or analysis of a TMA.

Automated image analysis

Images obtained after scanning slides can be analyzed using the Visiomorph software from Visiopharm. There is two license of this powerful software, which can analyze fluorescent or bright field digital images.

Access to a pathologist

A pathologist and/or an assistant pathologist can review cases and indicate a diagnosis (a veterinarian pathologist can be involved if needed).