Biobanking of processed mice brains

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Organisation

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Name of the organisation Katholieke Universiteit Leuven (KUL)

Department Neuropathology Lab

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SCOPE OF THE METHOD

The Method relates to	Animal health, Human health
The Method is situated in	Basic Research, Translational - Applied Research
Type of method	In vitro - Ex vivo
Species from which cells/tissues/organs are derived	Mouse, human
Type of cells/tissues/organs	Brain

DESCRIPTION

Method keywords

biobanking

frozen tissue

paraffin blocks
brain slices
mouse
IHC and IF stainings

Scientific area keywords

neuropathology
tissue biobanking
biochemistry
genetics and transcriptomics

Method description

Brain from treated and not treated mice is collected after death. Tissue is fixed in 4% PFA for 4 days. After specific cutting (ex. L and R hemisphere) tissue is placed in a cassette. Cassette is placed in Tissue Processor (where water from the tissue is removed and replaced with paraffin). Brain is embedded in paraffin. After paraffin block is ready it can be cut with microtome and slides can be stained or stored. In this method tissue from different mouse strains, different age, treated or not treated mice can be processed and stored for future applications/projects. Slides can be used for different kinds of stainings even years after collecting of the tissue.

Lab equipment

PFA 4% ;
Perfusion equipment ;
Paraffin ;
Tissue Processor ;
Tissue embedding equipment ;
Microtome.

Method status

History of use
Internally validated

PROS, CONS & FUTURE POTENTIAL

Advantages

Collected, processed and sliced tissue from one mouse can be used for many different projects.

Challenges

Big challenge for this method is collecting enough tissue from enough number of mice at different age.
Space for collected tissue (blocks and slides).

Modifications

Biobanking can be used for any type of tissue and any kind of lab animal. Another alternative method to replace studies on murine disease models for pathological features is the use of human autopsy tissue that allows to study a disease as well, which is collected in ethically approved recruitment projects. Alternatively, frozen tissue/lysates not entirely needed for a distinct study can also be kept frozen in the biobank for further experiments.

Future & Other applications

Centralized Animal Biobank may potentially decrease number of animal used in experiments.

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

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