**Biobanking in general and the use of autopsy tissue**

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According to the ISO standard 20387 [1], biobanking refers to the process of acquiring, storing, preparing, testing, analyzing, preserving, and distributing biological materials. Furthermore, ethical/legal issues as well as data management are included in biobanking processes. Therefore, storing specimens harvested over time is not the unique task of a biobank. Despite the type of biobanks in terms of harvested biospecimens, the main requisite is providing high quality samples to obtain reliable analytical results. This is possible only if standardized pre-analytical processes are used. The application of ISO standard [2-11] for pre-analytical processes for in vitro diagnostic is pivotal for biobanks so that BBMRI ERIC developed a survey [12] in order to check the conformity of the biobanking preanalytical processes according to different ISO standards and CEN technical documents.

For autopsy tissues biobanking there are no dedicated ISO standards/CEN technical documents. Routine autopsy tissues, both fresh frozen and formalin-fixed and paraffin embedded, are characterized by highly degraded biomolecules, because of the autolysis process and microbial activity during the postmortem interval. Nevertheless, postmortem biospecimens are an important source for human normal tissues and for specific pathology research topics, such as neurosciences or cardiovascular diseases. Autopsy tissues biobanking is possible with high quality samples. To support high quality postmortem biospecimens in biobanks it is mandatory to define rigorous procedures for tissue collection. Standard operating procedures should encompass sectioning, processing, storage and data collection to support biospecimen quality. Performing autopsy and collecting tissues within 24 hours from death, at least, are pivotal for high quality postmortem biospecimens. This could represent a major legal problem in some countries and it should be solved by the application of specific protocols in agreement with the legal authorities. As far as in surgical tissues it is important the annotation of both warm and cold ischemia duration, in autopsy tissues the cause of death, the agonal state and the duration of the post mortem interval shall be documented. Furthermore, molecular assays should be performed after tissue pathological assessment to estimate the quality of the biospecimens. If we consider that RNA is a liable molecule, the RNA integrity number can serve as a surrogate for overall biospecimen quality and suitability for genomic, proteomic, and other analyses [13]. By the application of a rigorous work flow [14] in biobanking postmortem tissues it is possible to isolate long RNA stretches from both fresh frozen and formalin fixed autopsy tissues to collect high quality post mortem tissues for research.

**References:**

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4: Specifications for pre-examination processes for FFPE tissue - Part 1: Isolated RNA; ISO 20166-1:2018
5: Specifications for pre-examination processes for FFPE tissue - Part 2: Isolated proteins; ISO 20166-2:2018
6: Specifications for pre-examination processes for FFPE tissue - Part 3: Isolated DNA; ISO 20166-3:2018

7: Specifications for pre-examination processes for venous whole blood - Part 1: Isolated cellular RNA; ISO 20186-1:2019
8: Specifications for pre-examination processes for venous whole blood - Part 2: Isolated genomic DNA; ISO 20186-2:2019
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