Poster Abstract

BBMRI - Biobanking for Science
Amsterdam, The Netherlands, September 23-25, 2010

A New Method for Simultaneous Preservation of Morphology and Biomolecules in Tissues

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A bottleneck in the pre-analytical procedures of biological samples is the preservation technique fulfilling the needs of classical histopathological diagnosis, immunohistochemistry and upcoming molecular diagnostics involving emerging omics- technologies from one tissue sample on a high quality level. In the context of the large-scale integrated project SPIDIA (www.spidia.eu) funded by the European Union FP7 programme a new tissue fixation and stabilisation system (PAXgene Tissue System by PreAnalytiX) developed in an innovative high-throughput screening approach is tested; in comparison with the current state of the art techniques for routine morphological diagnostics - formalin fixation and paraffin embedding - and molecular analyses - cryopreservation - several parameters were investigated: morphology, immunohistochemistry and nucleic acids preservation including downstream applications.
The data generated demonstrate high quality preservation of morphology and antigenicity and outstanding RNA preservation (even similar to freshly frozen samples) in tissue samples processed with the novel tissue fixation solution. The versatility of the PAXgene Tissue System opens new opportunities for biomedical research and facilitates biobanking of samples where a collection of snap frozen material is impossible for medical, ethical or logistic reasons (e.g. melanocytic lesions, prostate cancer and biopsies).