

Talk Abstract

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SPIDIA: An European Initiative to Minimize Pre-analytical Biomarker Variations

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Molecular *in vitro*-diagnostics will play an important role in future health care practise. However, the potential effects of tissue processing, including time of vessel ligation, excision, transport to pathology, fixation, and storage, on protein biomarker expression and stability are not known in detail.

SPIDIA, *standardisation and improvement of generic pre-analytical tools and procedures for in-vitro diagnostics*, is a 4-year project, funded by the European Union FP7 programme and involving 16 partners from 11 different European countries (www.spidia.eu). One of the aims of SPIDIA is to establish potential influences of tissue processing on protein biomarker stability and expression in order to provide guidelines for more reliable biomarker measurements in the routine clinical setting.

Initially, we will focus on non-malignant and malignant colon tissues. Immediately after surgery we will collect resected tissue samples in the operating theatre and define which of the tissue processing steps mostly influence protein expression and stability by comparing frozen and formalin-fixed samples at different time points during tissue processing. We will use Western blot, protein microarrays, and immunohistochemistry. Based on our approach, we will: (1) assess critical pre-analytical steps for variability of protein biomarker expression and stability; (2) identify surrogate protein markers that indicate tissue quality suitable for molecular analysis; (3) evaluate novel tissue fixatives for preservation of tissue architecture and maintaining the molecular content reflecting the disease state.