Comparison of different tissue sampling methods for protein extraction from formalin-fixed and paraffin-embedded tissue specimens.

Protein extracts from formalin-fixed and paraffin-embedded (FFPE) tissue for proteomic analysis has recently gained attention. In this study, we explored the possibility to standardize tissue sampling from paraffin blocks and compared the protein extracts with those obtained from fresh frozen material. Fresh frozen and FFPE material was obtained from five patients with pancreatic ductal adenocarcinoma either by cutting sections with a microtome or by stamping a cylinder with tissue micro-array technology. All samples were weighed, forwarded to protein extraction and analyzed by polyacrylamide gel electrophoresis and Western blotting. Immunohistochemistry allocated proteins in tissue sections. Sampling of tissue was highly reproducible, as assessed by sample weight. While protein concentrations were significantly higher in fresh frozen material compared to FFPE material, equal amounts of protein were extracted from FFPE using either paraffin sections or core cylinders in SDS-PAGE, all three procedures showed comparable protein patterns. In Western blotting, annexin I had the same molecular weight independent of the sample source and sampling procedure. The sampling of FFPE specimens for protein extraction and analysis can be standardized, uncovering equal amounts of tissue and protein. In addition, the proteins
extracted from FFPE tissue seem to be the same compared with those extracted from fresh frozen tissue.