Abstract: The current transition in cancer therapy from general treatment approaches, based mainly on chemotherapy and radiotherapy, to more directed approaches that aim to inhibit specific molecular targets has brought about new challenges for pathology. In the past, classical assignment of pathology consisted of tumor diagnosis and staging for further therapy decisions; nowadays, pathologists are asked to predict possible therapeutic results by detecting and quantifying therapeutic targets in tumors such as the human epidermal growth factor receptor 2 (HER2). The best approach to analyze such molecular targets is to provide a tumor-specific protein expression profile prior to therapy. To further elucidate signaling networks underlying cancer development and to identify new targets, it is necessary to implement tools that allow fast, precise, cheap, and simultaneous analysis of many network components while requiring only a small amount of clinical material. Reverse phase protein microarray (RPPA) is a promising technology that meets these requirements while enabling quantitative measurement of proteins. Recently, methods for the extraction of proteins from formalin-fixed, paraffin-embedded (FFPE) tissues have become available. In this article, we demonstrate how the use of RPPA to analyze signaling pathways from FFPE tissues may improve quantification of therapeutic targets and diagnostic markers in the near future.
future.

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