

Emerging opportunities in precision medicine

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Precision medicine in oncology is based on the exploitation of individual's genetic and genomic information to select the best treatment option. Especially in the setting of advanced disease where metastatic tissue biopsies are often inappropriate, liquid biopsies provide a mean for non-invasive testing. Additional advantages of liquid biopsies include the opportunity to query the tumor load and molecular information even in the context of heterogeneous disease and to obtain serial samples over time to test patients' treatment response and progression/remission. Liquid biopsies cover a variety of informative entities including circulating tumor cells, extracellular vesicles and cell free DNA. Each entity requires specific capturing and isolation techniques and analysis tools. Examples of current solutions and advances in the setting of translation research will be presented.