

## **Epigenetic liquid biopsies**

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Dying cells release nucleosome-size fragments of DNA to the circulation. These fragments of cell-free DNA (cfDNA) contain a wealth of genetic and epigenetic information, which can be retrieved using sequencing. Epigenetic information retained in cfDNA including patterns of DNA methylation, histone marks and DNA fragmentation allow to infer the tissue origins of cfDNA and hence the rate of turnover in specific tissues, as well as gene expression patterns in the cells prior to release of cfDNA.

I will provide examples for the utility of epigenetic liquid biopsies based on analysis of tissue-specific DNA methylation patterns, and will discuss the potential of this technology for diagnosis and monitoring of multiple pathologies, including the detection of minimal residual disease in cancer.