

Lung cancer and liquid biopsy

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Greatest advances have recently been made in genetics to increase our understanding of the genetic basis of human cancers. Many familial and somatic cancer genes with high-penetrance mutations have already been identified, but the situation is more complex for the contribution of the low-penetrance variants. Circulating tumor DNA (ctDNA) and cell-free DNA (cfDNA) have been shown to be elevated in the plasma and urine of patients with malignancy, offering clinical utility based on a blood draw and/or urine collection, in multiple solid tumors to improve our understanding of low-allelic fraction somatic variants. Multiple tumor type-specific next-generation sequencing assays are currently available which enable detection of somatic mutations in plasma, down to an analytical sensitivity of 0.1% in clinically relevant genes. This oral presentation will focus on the recent advances achieved in the field of liquid biopsy, along with our recent experience in Sema4 Laboratory, especially

in non-small cell lung cancer (NSCLC) specimens. Paired plasma and/or urine samples with respective lung tissue appear to ensure a deeper understanding of the molecular pathogenesis of NSCLC, determine diagnosis and prognosis, predict response to therapy, identify resistance variants, assess minimal residual disease, characterize evolution of the tumor, as well as shed light onto signaling networks that orchestrate tumor behavior in a longitudinal manner, to ultimately result in superior patient care.

Speaker Biography

Nefize Sertac Kip is a Pathologist who has completed her training at Mayo Clinic, Rochester MN five years ago. She has triple boarded for anatomic, clinical and molecular genetics pathology. She is currently working as the Director of Oncology at Sema4 Genomics Laboratory at CT, which is a spinoff company out of Mount Sinai, New York.

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