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PRECISION CANCER DIAGNOSTICS: NEW INSIGHTS, OPPORTUNITIES AND CHALLENGES

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Significant progress has been made in characterizing the genomic landscape of human cancers, directly translating these approaches into clinical practice. With treatments increasingly targeted towards specific genetic anomalies in individual tumors, next generation sequencing (NGS) technology is becoming a main stay of the cancer diagnostics laboratory, providing therapeutic options for an individual patient. Multiple clinical diagnostic assays are now being routinely performed on a variety of NGS platforms, spanning from single-gene or multi-gene targeted sequencing to whole genome sequencing. Furthermore, identification of tumor-specific antigens through whole-exome sequencing has facilitated a revolution in the field of cancer immunotherapy. In this presentation, we will discuss recent progress and clinical application of genomic characterization of clinical specimens, including blood and urine samples (liquid biopsies). We will also discuss the genomic and protein biomarkers that can predict which patients are most likely to benefit from immune check point inhibition.



Biography

Liang Cheng is the inaugural Virgil H. Moon endowed Professor of Pathology and Urology at Indiana University School of Medicine, Indianapolis, Indiana, USA. Currently, he is the Director of Molecular Diagnostics and Molecular Pathology Laboratories, Chief of the Genitourinary Pathology Service, Director of the Urologic Pathology Fellowship. He is Board Certified in Molecular Genetic Pathology, Anatomic and Clinical Pathology by the American Board of Pathology. He has received numerous prestigious awards including the Stowell-Orbison Award from the United States and Canadian Academy of Pathology (USCAP) and the Koss Medal Award from the International Society of Urological Pathology (ISUP). He received the Arthur Purdy Stout Prize from the Arthur Purdy Stout Society of Surgical Pathologists in recognition of outstanding contributions to the field of surgical pathology for a surgical pathologist who is below 45 years old. He has published over 850 peer-reviewed SCI articles in high-impact scientific journals. His published work has been cited more than 36,000 times (ISI Web of Science *h-index*: 98). He authored over 100 book chapters and several books. Currently, he is an active member of over 30 Editorial Boards. He is Editor-in-Chief of *Expert Review of Precision Medicine and Drug Development*. His research focuses on translational studies of genitourinary cancers and molecular diagnostics of solid tumors.

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