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The integrated 152 solid tumor panel for early-line and advanced stage treatment decisions in solid tumors

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Comprehensive genetic profiling of tumors using next generation sequencing (NGS) is gaining acceptance for guiding treatment decisions in cancer care. We designed a cancer profiling test that integrates results from NGS with more traditional results obtained by immunohistochemistry (IHC) of solid tumor tissues. Relevant regions of genes known to be implicated in solid tumors are targeted for deep sequencing. The tight concordance between some somatic mutations and the standard-of-care (SOC) therapeutics administered in clinical practice makes identification of such mutations in a specific tumor invaluable in guiding personalized and rational treatment of the patient. The SOC report is provided in a short turnaround time for four tumors, namely lung, breast, colon and melanoma, followed by a full report that includes drug candidates available through clinical trials. For all other tumor types, a full report is provided. Our Integrated 152 solid tumor panel not only detects single nucleotide polymorphisms (SNPs), but will identify copy number variations (CNVs) and some translocations in 152 cancer-related genes. We describe the standardization, validation, and clinical utility of the Integrated 152 Solid tumor test on approximately 250 solid tumor formalin-fixed paraffin-embedded (FFPE) disease samples and control cell-line samples. These studies showed high reproducibility and accuracy (~99%). When therapeutics in clinical trials was included, clinically relevant recommendations increased to 95% for patients in advanced stages of cancer. We present data to demonstrate how the Integrated 152 Solid Tumor Test may be used in clinical practices.

Biography

Melanie Yong is the Senior Manager at Integrated Molecular Diagnostics Pathology, Inc. (IMD Path). She earned her Bachelor's of Science in Biomedical Sciences and Microbiology from Colorado State University and certified by American Society for Clinical Pathology (ASCP) Board of Certification in Molecular Biology, MB (ASCP)CM. She is committed to the highest standard of excellence and enjoys the challenges that come along with new science and technology in the advancing Biotechnology and clinical diagnostics field. Her current research focuses in cancer genomics.

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