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Size matters: Challenges in implementing large Next-generation sequencing panels for routine clinical screening of tumors

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Massively parallel sequencing capability of Next-generation sequencing technologies have made them genome sequencing platforms of choice for routine screening of clinically significant markers in tumors. Most popular approach generally includes screening of limited areas (mutational hotspots) of limited number of relevant genes in order to restrict costs and practical turn-around-time (TAT) for the results. However, rapid discovery of markers warrants increasing the number genes for routine screening which is challenging due to increased costs, complexity of interpretation and decreasing sequencing throughput. In this talk, the experience of implementing progressively large gene panels in a high-volume molecular diagnostic laboratory will be highlighted. The logistic issues of implementing large NGS panels and the steps taken to meet these challenges in the laboratory will be discussed.

Biography

Rajesh R Singh has completed his PhD in Biochemistry from The University of Mysore, India and Postdoctoral research from University of Texas, MD Anderson Cancer Center. He has extensive experience in cancer biology focusing on the deregulated oncogenic and tumor suppressor pathways in the origin and maintenance of solid tumors and hematological malignancies. He is an Assistant Professor and Director of Clinical NGS Development in the Molecular Diagnostics Laboratory at MD Anderson, where he supervises the design, validation and implementation of NGS assays for routine mutational screening of tumors. He has published more than 50 papers and 8 review articles in reputed journals.

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