NUS National University of Singapore | Department of Pharmacy, Faculty of Science

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S4A Level 3, Room A&B

Towards precision medicine: the role of next generation sequencing technologies and it's evolution.

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Biography: Dr. Song Ling Poon received her Ph.D. degree from the University of British Columbia in Canada. Subsequently, she joined National Cancer Centre Singapore to conduct her postdoctoral training in translational research. Her principal research interests circumscribe the topic of genetic instability in cancer cells. She seeks to utilize next generation sequencing in conjunction with high throughput screening to elucidate the roles of aberrant signaling pathways in cancer cell biology for the development of cancer therapeutics. She has published widely in leading journals including *Nature Genetics*, *Science Translational Medicine,* and *Cancer Discovery*. Currently, Dr. Poon is the medical scientific liaison of ACT Genomics.

Abstract: Precision medicine has been defined as identifying the right drug, for the right patient, at the right dose, at the right time. This concept requires heavy access to information on an individual's unique genetic characteristics to tailor therapy. Next generation sequencing (NGS) allows multiple genes to be analyzed simultaneously in one run and can provide enough depth of coverage to detect minor allele frequencies in a cost-effective manner. Together with the advancement of computational tools created, NGS has risen to the forefront in tumor analysis, provide opportunity in dissecting and integrating the highly complex and heterogeneous genetic composition of cancer. Today, we will evaluate various approaches used in genomic profiling and how recent advancements in the field are changing the way of decoding genome. Details of each approach along with its benefits and drawbacks shall be discussed. Finally, the emerging applications of NGS and its exciting future shall be explored.

Hosted by A/P Giorgia Pastorin