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Abstract

“Select and Assay the human proteome using xMAP Technology”

Cell signaling mechanisms that underpin diseases remain poorly understood because of the difficulty of studying the associated proteins. Large scale protein studies have been inhibited by the poor availability of protein content and reliable platforms to rapidly assay protein functions. Here, we will present how a large breadth of protein content, over 9,000 human proteins generated through our high throughput protein production system, have been readily tested in planar array and bead array based platforms. The ProtoArray® microarray technology relies on a printed planar array to provide broad based coverage of the proteome for a range of discovery applications (protein- protein interactions, enzyme substrate identification, autoantibody biomarker discovery etc). Our recently developed antigen-based Luminex assay compliments the ProtoArray® microarray by allowing hundreds of antigens to be selected from our human proteome collection for testing in the same assays. This enables everyday scientists to test hundreds to thousands of proteins to discover novel functions and/or validate biological relevance. Here, we will present how the two technologies in combination with access to broad content have been used to study immune response signatures in autoimmune and cancer. We will also discuss use of the new antigen-based Luminex assay for other applications, such as protein interaction studies and enzyme-substrate identification.

Biography

Niroshan Ramachandran, Ph.D is the R&D Manager for the Protein Array Technology group at Life Technologies. Niroshan leads a group of scientists who specialize in developing integrated solutions for biomarker discovery and validation. This involves developing novel approaches for producing high content protein arrays for biomarker discovery as well downstream high throughput assays for rapid validation of candidate markers. Dr. Ramachandran received his undergraduate degree from the University of Toronto, Canada and his doctorate degree from the University of Windsor, Canada. He carried out his post doctoral work at the Harvard Medical School where he developed a patented technology for producing high content protein arrays.