**Building a Comprehensive Reverse Phase Protein Array (RPPA) Technology as a Core Facility Service: Technology, Application, Data Processing & Integration**

**High Throughput Screening**

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Reverse Phase Protein Array (RPPA) is a high-throughput antibody-based proteomics platform that can quantify hundreds of proteins in thousands of samples simultaneously, including small amounts of tissue and cell lysates, serum, plasma or other body fluids. Experimental protein samples, and positive and negative controls, are robotically arrayed as microspots on nitrocellulose coated glass slides and each slide is probed with a validated specific antibody that can detect levels of total protein expression or post-translational modifications such as phosphorylation as a measure of protein activity. RPPA is a robust technology developed as a major service of Antibody-based Proteomics (ABP) Core with our in-house standard workflow protocols, quality controls and data analysis tools, and has proven to be highly reliable and reproducible for both validation and discovery proteomic research. Our RPPA platform currently analyzes ~240 validated antibodies that primarily detect proteins in signaling pathways and cellular processes that are important in cancer biology. Baylor College of Medicine ABP Core has setup and provided comprehensive RPPA services over the past ten years with support both by Cancer Prevention & Research Institute of Texas (CPRIT) and NIH S10 shared instrument grants. The user base for RPPA services has been growing and RPPA technology has become an important resource for RPPA projects nationally and internationally for other academic Institutions. Here we report the process of setting up RPPA technology including technology development, application, data processing and integrations.