The new generation in immunoassays

Speaker: David Bourdon, PhD, Thermo Fisher Scientific

Biography: David's PhD and postdoctoral work focused on the study of G protein-coupled receptor signaling and thrombosis. Following his academic training, he led multiplexed immunoassay automation efforts at a Luminex partnering company. In 2009, David joined Thermo Fisher Scientific working on the development of novel immunoassay platforms such as the Invitrogen™ ProtoPlex™ Immune Response Assay. Now as Sr. Manager and immunoassay strategy lead, David pursues next-gen immunoassay platform development which includes working with translational investigators to identify serum-based biomarkers in cancer, autoimmunity, and inflammation.

Abstract

Early detection of protein biomarkers is critical to the study of human disease (cancer, neurobiology, inflammation/autoimmunity, etc.). Basic research scientists, as well as translational investigators seek sensitive protein quantitation tools that provide low-level detection of disease relevant protein analytes. The enzyme-linked immunosorbent assay (ELISA) first developed in the 1970s and slightly improved upon over the years, is still considered the gold standard for specific protein quantitation. However, large sample consumption, limited sensitivity, and laborious workflows associated with ELISA methods leave room for improvement and new innovation.

Thermo Fisher Scientific is unveiling an affordable new platform for the next generation of high ¬sensitivity, ready-to-use immunoassays. Invitrogen™ ProQuantum™ High-Sensitivity Immunoassays feature serum compatible, Applied BioSystems™ TaqMan™ based proximity ligation assay (PLA) and Invitrogen™ SiteClick™ antibody labeling technologies. This new assay combines the analyte-specificity of high affinity antibody-antigen binding with the signal detection and amplification of real-time PCR. Not only does this assay technique allow measurement of low expressing proteins that we may not have otherwise been able to detect, but it also provides an easy method to verify gene expression at a protein level.

In this webinar, we will address the following items related to this new platform:

- **Small sample consumption** – uses 2-5 µL of sample (as compared to 150 µL for triplicate wells with other methods)
- **High-sensitivity** – detect low levels of proteins with greater sensitivity than other traditional methods
- **Large dynamic range** – 5 logs or greater minimizes guessing associated with sample dilutions
- **Fast, easy workflow** – no wash steps, 2 hours from sample to answer. Step 1: Mix samples with antibodies and incubate. Step 2: Add master mix reagents and place into real time PCR instrument.
- **No proprietary instrument to purchase** - runs on any real time PCR instrument – no need for specialized equipment
- **Includes intuitive free cloud-enabled software** – for robust data analysis and statistical group-wise comparison
- **Publishing** - the importance of validation for publishing purposes
- **Q & A with the expert**