

How Diagnostics Work: Protein-Based Diagnostics

40-MINUTE ONLINE COURSE | LEVEL 2

SUGGESTED PREREQUISITES: THE BIOLOGY OF BIOTECH, DIAGNOSTICS' ROLE IN MEDICINE TODAY, STATISTICAL FEATURES OF DIAGNOSTICS, AND ANTIBODIES

OVERVIEW

How Diagnostics Work: Protein-Based Diagnostics focuses on antibodies: what they are, where they come from and how they work. Various antibody-based diagnostics, such as sandwich and bead immunoassays, multiplexed assays, lateral flow assays and chromatography are explained in detail. Develop an understanding of these diverse tools and how to interpret results, knowledge that can be applied in research, drug development, and patient care.

Five Takeaways:

1. Define the various types of protein-based diagnostics.
2. An improved ability to explain how biomarkers are used in diagnostics.
3. Explain how antibodies are used in diagnostics.
4. Understand the fundamental science of protein-based diagnostics.
5. Interpret the information gained from the following assays: antibody diagnostics, ELISA, bead immunoassays, lateral flow assays, and chromatography diagnostics.

AGENDA

- **Defining Protein-Based Diagnostics** introduces protein-based diagnostics by explaining the importance of biomarkers in diagnostics. A biomarker is a measurable molecule indicative of disease.
- **Antibody Technology** explains the importance of antibody structure and how that structure contributes to its function. Antibody structure and function are exploited by the medical device industry for diagnostic use.
- **Enzyme-Linked Immunosorbent Assays (ELISA) Technology** demonstrates the technology and how to interpret results of the widely-used screening test known as an ELISA.
- **Bead Immunoassay Technology** extends your ELISA knowledge by showing how ELISA technology can be adapted into more high throughput techniques, such as multiplexed bead assays.
- **Lateral Flow Assay Technology** explains how lateral flow immunochromatographic assay works, its applications and how to interpret its results.
- **Chromatography Technology** describes the applications of column chromatography in diagnostics and how to interpret its results.