ITSI BIOSCIENCES
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Innovative Tools Supporting Tomorrow's Breakthroughs

Advancing Drug Discovery: How Quantitative Proteomics Accelerates Target Identification and Validation

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In today's competitive and fast-moving drug discovery landscape, the ability to identify, validate, and prioritize the right biological targets is critical. Quantitative proteomics has emerged as a powerful engine driving this process, transforming complex biological data into actionable insights. At ITSI Biosciences, we are proud to support this transformation through over 21 years of bioanalytical expertise, innovative sample preparation products, and end-to-end proteomics services.

Why Quantitative Proteomics Matters in Drug Discovery

Drug discovery begins with understanding disease biology at the molecular level. While genomics and transcriptomics provide valuable information, proteins are the functional drivers of biological systems, and the direct targets of most therapeutics.

Quantitative proteomics enables researchers to:

- Measure protein abundance, dynamics, and modifications
- Compare disease vs. normal and control states with high precision
- Identify dysregulated pathways and actionable targets
- Validate targets through relative and absolute quantitation

By delivering accurate, reproducible protein-level data, quantitative proteomics shortens discovery timelines and reduces the risk of late-stage failure.

Accelerating Target Identification

ITSI Biosciences leverages advanced mass spectrometry-based proteomics to help researchers uncover novel and high-confidence drug targets. Using technologies such as:

- LC-MS/MS–based quantitative proteomics
- Tandem Mass Tag (TMT) multiplexing
- 2D-DIGE
- xMAP-based assays

We enable simultaneous comparison of multiple biological conditions, increasing statistical power while reducing cost and sample requirements.

Our expertise spans all sample types, including solid tissue, cells, blood, urine, plant material, and formalin-fixed paraffin-embedded (FFPE) tissue, allowing target discovery directly from clinically relevant samples.

Strengthening Target Validation with Precision

Identifying a target is only the beginning. Robust target validation is essential to confirm biological relevance and therapeutic potential. ITSI's quantitative proteomics workflows support validation by:

- Providing relative and absolute protein quantitation
- Enabling pathway-level and network analysis
- Supporting biomarker discovery and verification
- Integrating proteomics data with experimental design and biological context

Our scientists work closely with clients to ensure that data is not only generated, but interpreted correctly, delivering meaningful insights that inform go/no-go decisions.

End-to-End Analytical Support You Can Trust

From experimental design to data analysis and result interpretation, ITSI Biosciences provides comprehensive analytical services tailored to biopharma, pharma, research institutes, government agencies, and academia. Whether you are exploring early-stage target discovery or advancing candidates toward development, our integrated approach ensures that every experiment delivers maximum value.

Partner with ITSI Biosciences

Quantitative proteomics is reshaping how drug discovery is done, and ITSI Biosciences is at the forefront of this innovation. Through advanced technologies, deep scientific expertise, and a commitment to data quality, we help accelerate the journey from biological question to therapeutic breakthrough.

Discover how ITSI Biosciences can support your next drug discovery project.
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Connect With Us

info@itsibio.com
www.itsibio.com
1-814-262-7331
Johnstown, PA,
USA