

Mass spectrometry

Stellar mass spectrometer Discovery to validation at unprecedented scale 2024 year in review



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Introduction

Accelerate biomarker verification with confidence by quantifying more analytes with increased sensitivity, specificity, and throughput using the Thermo Scientific[™] Stellar[™] mass spectrometer. By synergistically combining the robust quantitative performance of triplequadrupole technology with the sensitive, hyper-fast full-scan MSⁿ acquisition of dual-pressure linear ion trap technology, the Stellar mass spectrometer extends its unprecedented analytical

capabilities to a wider range of compounds. Dynamic instrument control software simplifies instrument operation while maximizing sample throughput. Together, these capabilities enable researchers to gather the additional insight needed to make better informed decisions and move to the biomarker validation stage faster.



19 scientific resources in 6 months

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Proteomics posters

Host-cell proteins

An improved EasyPep sample preparation method for enrichment and quantification of host-cell proteins



Plasma proteomics

Evolution of PRM assays at discovery scale on a new hybrid nominal mass instrument for phosphoproteomics studies



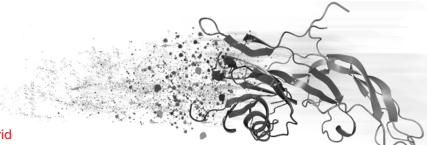
Revolutionizing translational research: large-scale targeted PRM proteomics assays enabled by the Stellar mass spectrometer



Combining a new hybrid nominal mass platform and intelligent data acquisition to enable highly multiplexed targeted proteomics



Technology



A novel long-life detector for a novel high-speed hybrid nominal mass platform



Metabolomics posters

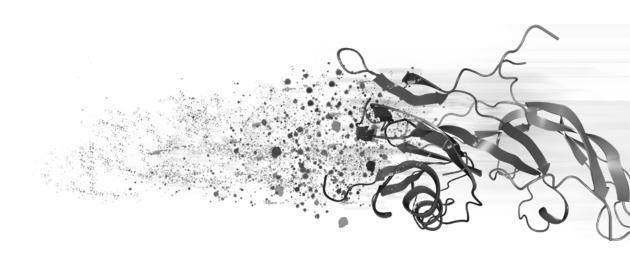
Exploring sex differences in zebrafish livers using a novel targeted discovery metabolomics approach



Microbiome

High throughput targeted metabolomics library generation on a novel mass spectrometer applied to microbiome analysis





Proteomics articles

Peer reviewed



Hybrid quadrupole mass filterradial ejection linear ion trap and intelligent data acquisition enable highly multiplex targeted proteomics

Philip M. Remes, Cristina C. Jacob, Lilian R. Heil, Nicholas Shulman, Brendan X. MacLean, and Michael J. MacCoss

J Proteome Res . 2024, 23, 12, 5476-5486

Preprints

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Development of highly multiplex targeted proteomics assays in biofluids using the Stellar mass spectrometer

Deanna L Plubell, Philip M. Remes, Christine C. Wu, Cristina C. Jacob, Gennifer E. Merrihew, Chris Hsu, Nick Shulman, Brendan X. MacLean, Lilian Heil, Kathleen Poston, Tom Montine, and Michael J. MacCoss

bioRxiv 2024.06.04.597431



A workflow for targeted proteomics assay development using a versatile linear ion trap

Ariana E. Shannon, Rachael N. Teodorescu, Nojoon Soon, Lilian R. Heil, Cristina C. Jacob, Philip M. Remes, Mark P. Rubinstein, and Brian C. Searle

bioRxiv 2024.05.31.596891



View article

A novel hybrid high speed mass spectrometer allows rapid translation from biomarker candidates to targeted clinical tests using 15N labeled proteins

Maria Wahle, Philip M. Remes, Vincent Albrecht, Johannes Mueller-Reif, Sophia Steigerwald, Tim Heymann, Lili Niu, Philip Lössl, Stevan Horning, Cristina C. Jacob, and Matthias Mann

bioRxiv 2024.06.02.597029

Rapid assay development for low input targeted proteomics using a versatile linear ion trap

Brian Searle, Ariana Shannon, Rachael Teodorescu, No-Joon Song, Lilian Heil, Cristina Jacob, Philip Remes, Zihai Li, and Mark Rubinstein

Research Square 19 July 2024

Proteomics webinars



Democratizing plasma proteomics: demonstrating a novel large-scale plasma proteomics targeted assay

Michael MacCoss

University of Washington





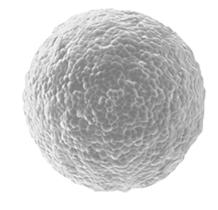
Breaking barriers for biomarker translation toward validation: Creating a new verification-class mass spectrometer with the Stellar mass spectrometer

Philip M. Remeš

Thermo Fisher Scientific

Deanna Plubell

University of Washington



Developing a targeted quantifying method for immune cell markers with the Stellar mass spectrometer

Brian Searle

Ohio State University Medical Center



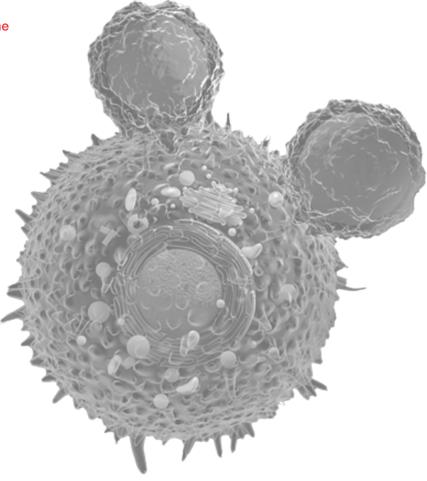
Proteomics Technical note

Immunopeptidomics



Ultra-sensitive absolute quantitation and high-throughput method development for immunopeptidomics using the Stellar mass spectrometer

Technical note | 003539



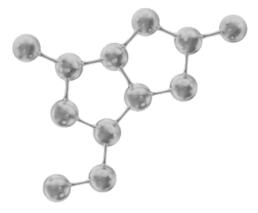
Metabolomics Applicaton note

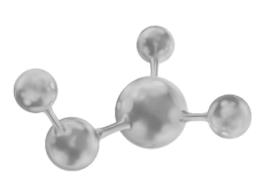
Fecal metabolomics

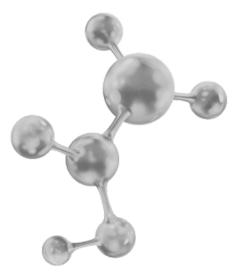


Development and implementation of a comprehensive fecal metabolites LC-MS library for dietary intervention studies using the Thermo Scientific Stellar mass spectrometer

Application note | 003114







Proteomics White paper

White paper

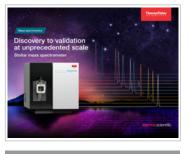


Transitioning biomarkers from discovery to validation at unprecedented scale with the Stellar mass spectrometer

White paper | 003007



Brochure



unprecedented scale: Stellar mass spectrometer

Discovery to validation at

Thermo Fisher SCIENTIFIC

Brochure

View brochure

Learn more at thermofisher.com/stellar

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