

Special Issue: Eleventh International Symposium on Mass Spectrometry in the Health and Life Sciences

Special Issue Articles

- 2301 **Peptide-Centric Proteome Analysis: An Alternative Strategy for the Analysis of Tandem Mass Spectrometry Data**
Ying S. Ting, Jarrett D. Egertson, Samuel H. Payne, Sangtae Kim, Brendan MacLean, Lukas Käll, Ruedi Aebersold, Richard D. Smith, William Stafford Noble, and Michael J. MacCoss
- 2308 **Metabolic Regulation by Lysine Malonylation, Succinylation, and Glutarylation**
Matthew D. Hirschev and Yingming Zhao
- 2316 **Proteotranscriptomic Profiling of 231-BR Breast Cancer Cells: Identification of Potential Biomarkers and Therapeutic Targets for Brain Metastasis**
Matthew D. Dun, Robert J. Chalkley, Sam Faulkner, Sheridan Keene, Kelly A. Avery-Kiejda, Rodney J. Scott, Lasse G. Falkenby, Murray J. Cairns, Martin R. Larsen, Ralph A. Bradshaw, and Hubert Hondermarck
- 2331 **Using Data Independent Acquisition (DIA) to Model High-responding Peptides for Targeted Proteomics Experiments**
Brian C. Searle, Jarrett D. Egertson, James G. Bollinger, Andrew B. Stergachis, and Michael J. MacCoss
- 2341 **Interactions of the Antiviral Factor Interferon Gamma-Inducible Protein 16 (IFI16) Mediate Immune Signaling and Herpes Simplex Virus-1 Immunosuppression**
Benjamin A. Diner, Krystal K. Lum, Aaron Javitt, and Ileana M. Cristea
- 2357 **Large-Scale Interlaboratory Study to Develop, Analytically Validate and Apply Highly Multiplexed, Quantitative Peptide Assays to Measure Cancer-Relevant Proteins in Plasma**
Susan E. Abbatiello, Birgit Schilling, D. R. Mani, Lisa J. Zimmerman, Steven C. Hall, Brendan MacLean, Matthew Albertolle, Simon Allen, Michael Burgess, Michael P. Cusack, Mousumi Gosh, Victoria Hedrick, Jason M. Held, H. Dorota Inerowicz, Angela Jackson, Hasmik Keshishian, Christopher R. Kinsinger, John Lyssand, Lee Makowski, Mehdi Mesri, Henry Rodriguez, Paul Rudnick, Pawel Sadowski, Nell Sedransk, Kent Shaddox, Stephen J. Skates, Eric Kuhn, Derek Smith, Jeffery R. Whiteaker, Corbin Whitwell, Shucha Zhang, Christoph H. Borchers, Susan J. Fisher, Bradford W. Gibson, Daniel C. Liebler, Michael J. MacCoss, Thomas A. Neubert, Amanda G. Paulovich, Fred E. Regnier, Paul Tempst, and Steven A. Carr
- 2375 **Multiplexed, Quantitative Workflow for Sensitive Biomarker Discovery in Plasma Yields Novel Candidates for Early Myocardial Injury**
Hasmik Keshishian, Michael W. Burgess, Michael A. Gillette, Philipp Mertins, Karl R. Clauser, D. R. Mani, Eric W. Kuhn, Laurie A. Farrell, Robert E. Gerszten, and Steven A. Carr

On the cover: PREGO is a software tool trained with data independent acquisition results that predicts high responding peptides for targeted experiments. Peptides in CASZ1 are ranked on their experimentally acquired targeted transition fragment intensity. Although there is large variation in predicting response intensities for any given peptide, there is a definite trend to score top ranked peptides higher than worse ranked peptides. For details, see the article by Brian C. Searle, *et al.*, pages 2331–2340.

- 2394 **A Scalable Approach for Protein False Discovery Rate Estimation in Large Proteomic Data Sets**
 [S] *Mikhail M. Savitski, Mathias Wilhelm, Hannes Hahne, Bernhard Kuster, and Marcus Bantscheff*
- 2405 **MS1 Peptide Ion Intensity Chromatograms in MS2 (SWATH) Data Independent Acquisitions. Improving Post Acquisition Analysis of Proteomic Experiments**
 [S] ✎ *Matthew J. Rardin, Birgit Schilling, Lin-Yang Cheng, Brendan X. MacLean, Dylan J. Sorensen, Alexandria K. Sahu, Michael J. MacCoss, Olga Vitek, and Bradford W. Gibson*
- 2420 **Sequential Window Acquisition of all Theoretical Mass Spectra (SWATH) Analysis for Characterization and Quantification of Histone Post-translational Modifications**
 [S] *Simone Sidoli, Shu Lin, Lei Xiong, Natarajan V. Bhanu, Kelly R. Karch, Eric Johansen, Christie Hunter, Sahana Mollah, and Benjamin A. Garcia*
- 2429 **Deep, Quantitative Coverage of the Lysine Acetylome Using Novel Anti-acetyl-lysine Antibodies and an Optimized Proteomic Workflow**
 [S] *Tanya Svinkina, Hongbo Gu, Jeffrey C. Silva, Philipp Mertins, Jana Qiao, Shaunt Fereshetian, Jacob D. Jaffe, Eric Kuhn, Namrata D. Udeshi, and Steven A. Carr*

Regular Articles

Review

- 2441 **Less is More: Membrane Protein Digestion Beyond Urea-Trypsin Solution for Next-level Proteomics**
 [S] *Xi Zhang*

Research

- 2454 **Comprehensive Temporal Protein Dynamics during the Diauxic Shift in *Saccharomyces cerevisiae***
 [S] *J. Patrick Murphy, Ekaterina Stepanova, Robert A. Everley, Joao A. Paulo, and Steven P. Gygi*
- 2466 **Comparative Tissue Proteomics of Microdissected Specimens Reveals Novel Candidate Biomarkers of Bladder Cancer**
 [S] *Chien-Lun Chen, Ting Chung, Chih-Ching Wu, Kwai-Fong Ng, Jau-Song Yu, Cheng-Han Tsai, Yu-Sun Chang, Ying Liang, Ke-Hung Tsui, and Yi-Ting Chen*
- 2479 **Characterization of the Tyrosine Kinase-Regulated Proteome in Breast Cancer by Combined use of RNA interference (RNAi) and Stable Isotope Labeling with Amino Acids in Cell Culture (SILAC) Quantitative Proteomics**
 [S] ✎ *Justin Stebbing, Hua Zhang, Yichen Xu, Arnhild Grothey, Paul Ajuh, Nicos Angelopoulos, and Georgios Giamas*
- 2493 **Cytoskeletal Components Define Protein Location to Membrane Microdomains**
 [S] *Witold G. Szymanski, Henrik Zauber, Alexander Erban, Michal Gorka, Xu Na Wu, and Waltraud X. Schulze*
- 2510 **Cytological and Proteomic Analyses of *Osmunda cinnamomea* Germinating Spores Reveal Characteristics of Fern Spore Germination and Rhizoid Tip Growth**
 [S] *Jinwei Suo, Qi Zhao, Zhengxiu Zhang, Sixue Chen, Jian'guo Cao, Guanjun Liu, Xing Wei, Tai Wang, Chuanping Yang, and Shaojun Dai*
- 2535 **Quantitative Proteomics Reveals the Roles of Peroxisome-associated Proteins in Antiviral Innate Immune Responses**
 [S] *Mao-Tian Zhou, Yue Qin, Mi Li, Chen Chen, Xi Chen, Hong-Bing Shu, and Lin Guo*

AUTHOR INDEX

- Abbatiello, Susan E., 2357
Aebersold, Ruedi, 2301
Ajuh, Paul, 2479
Albertolle, Matthew, 2357
Allen, Simon, 2357
Angelopoulos, Nicos, 2479
Avery-Kiejda, Kelly A., 2316
- Bantscheff, Marcus, 2394
Bhanu, Natarajan V., 2420
Bollinger, James G., 2331
Borchers, Christoph H., 2357
Bradshaw, Ralph A., 2316
Burgess, Michael, 2357
Burgess, Michael W., 2375
- Cairns, Murray J., 2316
Cao, Jian'guo, 2510
Carr, Steven A., 2357, 2375, 2429
Chalkley, Robert J., 2316
Chang, Yu-Sun, 2466
Chen, Chen, 2535
Chen, Chien-Lun, 2466
Chen, Sixue, 2510
Chen, Xi, 2535
Chen, Yi-Ting, 2466
Cheng, Lin-Yang, 2405
Chung, Ting, 2466
Clauser, Karl R., 2375
Cristea, Ileana M., 2341
Cusack, Michael P., 2357
- Dai, Shaojun, 2510
Diner, Benjamin A., 2341
Dun, Matthew D., 2316
- Egertson, Jarrett D., 2301, 2331
Erban, Alexander, 2493
Everley, Robert A., 2454
- Falkenby, Lasse G., 2316
Farrell, Laurie A., 2375
Faulkner, Sam, 2316
Fereshetian, Shaunt, 2429
Fisher, Susan J., 2357
- Garcia, Benjamin A., 2420
Gerszten, Robert E., 2375
Giamas, Georgios, 2479
Gibson, Bradford W., 2357, 2405
Gillette, Michael A., 2375
Gorka, Michal, 2493
Gosh, Mousumi, 2357
Grothey, Arnhild, 2479
Gu, Hongbo, 2429
- Guo, Lin, 2535
Gygi, Steven P., 2454
- Hahne, Hannes, 2394
Hall, Steven C., 2357
Hedrick, Victoria, 2357
Held, Jason M., 2357
Hondermarck, Hubert, 2316
Hunter, Christie, 2420
- Inerowicz, H. Dorota, 2357
- Jackson, Angela, 2357
Jaffe, Jacob D., 2429
Javitt, Aaron, 2341
Johansen, Eric, 2420
- Käll, Lukas, 2301
Karch, Kelly R., 2420
Keene, Sheridan, 2316
Keshishian, Hasmik, 2357, 2375
Kim, Sangtae, 2301
Kinsinger, Christopher R., 2357
Kuhn, Eric, 2357, 2429
Kuhn, Eric W., 2375
Kuster, Bernhard, 2394
- Larsen, Martin R., 2316
Liang, Ying, 2466
Liebler, Daniel C., 2357
Li, Mi, 2535
Lin, Shu, 2420
Liu, Guanjun, 2510
Lum, Krystal K., 2341
Lyssand, John, 2357
- MacCoss, Michael J., 2301, 2331, 2357, 2405
MacLean, Brendan X., 2405
MacLean, Brendan, 2301, 2357
Makowski, Lee, 2357
Matthew D. Hirschey, 2308
Mani, D. R., 2357, 2375
Mertins, Philipp, 2375, 2429
Mesri, Mehdi, 2357
Mollah, Sahana, 2420
Murphy, J. Patrick, 2454
- Na Wu, Xu, 2493
Neubert, Thomas A., 2357
Ng, Kwai-Fong, 2466
Noble, William Stafford, 2301
- Paulovich, Amanda G., 2357
Paulo, Joao A., 2454

Payne, Samuel H., 2301

Qiao, Jana, 2429

Qin, Yue, 2535

Rardin, Matthew J., 2405

Regnier, Fred E., 2357

Rodriguez, Henry, 2357

Rudnick, Paul, 2357

Sadowski, Pawel, 2357

Sahu, Alexandria K., 2405

Savitski, Mikhail M., 2394

Schilling, Birgit, 2357, 2405

Scott, Rodney J., 2316

Searle, Brian C., 2331

Sedransk, Nell, 2357

Shaddox, Kent, 2357

Shu, Hong-Bing, 2535

Sidoli, Simone, 2420

Silva, Jeffrey C., 2429

Skates, Stephen J., 2357

Smith, Derek, 2357

Smith, Richard D., 2301

Sorensen, Dylan J., 2405

Stebbing, Justin, 2479

Stepanova, Ekaterina, 2454

Stergachis, Andrew B., 2331

Suo, Jinwei, 2510

Svinkina, Tanya, 2429

Szymanski, Witold G., 2493

Tempst, Paul, 2357

Tsai, Cheng-Han, 2466

Tsui, Ke-Hung, 2466

Udeshi, Namrata D., 2429

Vitek, Olga, 2405

Waltraud X. Schulze, 2493

Wang, Tai, 2510

Wei, Xing, 2510

Whiteaker, Jeffery R., 2357

Whitwell, Corbin, 2357

Wilhelm, Mathias, 2394

Wu, Chih-Ching, 2466

Xiong, Lei, 2420

Xu, Yichen, 2479

Yang, Chuanping, 2510

Ying S. Ting, 2301

Yingming Zhao, 2308

Yu, Jau-Song, 2466

Zauber, Henrik, 2493

Zimmerman, Lisa J., 2357

Zhang, Hua, 2479

Zhang, Shucha, 2357

Zhang, Xi, 2441

Zhang, Zhengxiu, 2510

Zhao, Qi, 2510

Zhou, Mao-Tian, 2535