



Table of Contents

This issue and full Instructions to Authors are available in electronic form at <http://www.mcponline.org>

Editorial

- 629 **Two Important Changes and a Reminder for Authors of ASBMB Publications: JBC, MCP, and JLR**
Nancy Rodnan, Director of Publications

Special Issue: 8th International Symposium On Mass Spectrometry In The Life Sciences

- 631 **Statistical Similarities between Transcriptomics and Quantitative Shotgun Proteomics Data**
[S] *Norman Pavelka, Marjorie L. Fournier, Selene K. Swanson, Mattia Pelizzola, Paola Ricciardi-Castagnoli, Laurence Florens, and Michael P. Washburn*
- 645 **Combined Enzymatic and Data Mining Approaches for Comprehensive Phosphoproteome Analyses: Application to Cell Signaling Events of Interferon- γ -Stimulated Macrophages**
[S] *Maria Marcantonio, Matthias Trost, Mathieu Courcelles, Michel Desjardins, and Pierre Thibault*
- 661 **SIMAC (Sequential Elution from IMAC), a Phosphoproteomics Strategy for the Rapid Separation of Monophosphorylated from Multiply Phosphorylated Peptides**
[S] *Tine E. Thingholm, Ole N. Jensen, Phillip J. Robinson, and Martin R. Larsen*
- 672 **Stable Isotope Labeling by Amino Acids in Cell Culture (SILAC) and Proteome Quantitation of Mouse Embryonic Stem Cells to a Depth of 5,111 Proteins**
[S] *Johannes Graumann, Nina C. Hubner, Jeong Beom Kim, Kinarm Ko, Markus Moser, Chanchal Kumar, Jürgen Cox, Hans Schöler, and Matthias Mann*
- 684 **Quantitative Analysis of Synaptic Phosphorylation and Protein Expression**
[S] *Jonathan C. Trinidad, Agnes Thalhammer, Christian G. Specht, Aenoch J. Lynn, Peter R. Baker, Ralf Schoepfer, and Alma L. Burlingame*
- 697 **Modulation of the Phagosome Proteome by Interferon- γ**
[S] *Isabelle Jutras, Mathieu Houde, Nathan Currier, Jonathan Boulais, Sophie Duclos, Sylvie LaBoissière, Eric Bonneil, Paul Kearney, Pierre Thibault, Eustache Paramithiotis, Patrice Hugo, and Michel Desjardins*
- 716 **Quantitative Proteomics Analysis of the Effects of Ionizing Radiation in Wild Type and p53^{K317R} Knock-in Mouse Thymocytes**
[S] *Lisa M. Miller Jenkins, Sharlyn J. Mazur, Matteo Rossi, Olga Gaidarenko, Yang Xu, and Ettore Appella*

On the cover, brain region-specific variations in postsynaptic density proteins mediate distinct physiological responses to synaptic activation. Mass spectrometry analysis was used to compare both relative protein expression and phosphorylation status from proteins present in biochemical preparations of postsynaptic density from murine cortex, midbrain, cerebellum, and hippocampus. Hierarchical clustering analysis revealed that known functionally associated proteins display coordinated synaptic expression. For details, see the article by Trinidad *et al.*, pages 684–696.

- 728 **Proteomics Studies of Brassinosteroid Signal Transduction Using Prefractionation and Two-dimensional DIGE**
Wenqiang Tang, Zhiping Deng, Juan A. Oses-Prieto, Nagi Suzuki, Shengwei Zhu, Xin Zhang, Alma L. Burlingame, and Zhi-Yong Wang
- 739 **CrossSearch, a User-friendly Search Engine for Detecting Chemically Cross-linked Peptides in Conjugated Proteins**
[S] *Owen W. Nadeau, Gerald J. Wyckoff, Justin E. Paschall, Antonio Artigues, Jessica Sage, Maria T. Villar, and Gerald M. Carlson*
- 750 **Coupled Global and Targeted Proteomics of Human Embryonic Stem Cells during Induced Differentiation**
[S] *Anastasia K. Yocum, Theresa E. Gratsch, Nancy Leff, John R. Strahler, Christie L. Hunter, Angela K. Walker, George Michailidis, Gilbert S. Omenn, K. Sue O'Shea, and Philip C. Andrews*

Research

- 768 **Defining the Specificity Space of the Human Src Homology 2 Domain**
[S] *Haiming Huang, Lei Li, Chenggang Wu, David Schibli, Karen Colwill, Sucan Ma, Chengjun Li, Protiva Roy, Krystina Ho, Zhou Songyang, Tony Pawson, Youhe Gao, and Shawn S.-C. Li*
- 785 **Quantitative Analysis of Snake Venoms Using Soluble Polymer-based Isotope Labeling**
[S] *Jacob A. Galan, Minjie Guo, Elda E. Sanchez, Esteban Cantu, Alexis Rodriguez-Acosta, John C. Perez, and W. Andy Tao*
- 800 **ANIBAL, Stable Isotope-based Quantitative Proteomics by Aniline and Benzoic Acid Labeling of Amino and Carboxylic Groups**
[S] *Alexandre Panchaud, Jenny Hansson, Michael Affolter, Rachid Bel Rhlid, Stéphane Piu, Philippe Moreillon, and Martin Kussmann*
- 813 **Comparative Evaluation of Current Peptide Production Platforms Used in Absolute Quantification in Proteomics**
[S] *Hamid Mirzaei, Joshua K. McBee, Julian Watts, and Ruedi Aebersold*

Information

- 824 **Calendar**