



Table of Contents

This issue is available in electronic form at
<http://www.mcponline.org>

Editorial

- 1719 **Biomarkers and Clinical Proteomics**
Steven A. Carr and Julio E. Celis

Biomarkers of Disease and Conditions

Challenges in Biomarker Discovery

- 1720 **The Proteomic Search for Diagnostic Biomarkers: Lost in Translation?**
Werner Zolg
- 1727 **Advances and Challenges in Liquid Chromatography-Mass Spectrometry-based Proteomics Profiling for Clinical Applications**
Wei-Jun Qian, Jon M. Jacobs, Tao Liu, David G. Camp II, and Richard D. Smith

Cancer

- 1745 **Tumor-associated Antigen Arrays for the Serological Diagnosis of Cancer**
Carlos A. Casiano, Melanie Mediavilla-Varela, and Eng M. Tan
- 1760 **Discovery of Urinary Biomarkers**
Trairak Pisitkun, Rose Johnstone, and Mark A. Knepper
- 1772 **Proteomics of Breast Cancer: Principles and Potential Clinical Applications**
François Bertucci, Daniel Birnbaum, and Anthony Goncalves
- 1787 **Mass Spectrometry-based Proteomic Studies of Human Anaplastic Large Cell Lymphoma**
Megan S. Lim and Kojo S. J. Elenitoba-Johnson
- 1799 **Posttranslational Protein Modifications: Current Implications for Cancer Detection, Prevention, and Therapeutics**
Karl E. Krueger and Sudhir Srivastava
- 1811 **Population Proteomics: The Concept, Attributes, and Potential for Cancer Biomarker Research**
Dobrin Nedelkov, Urban A. Kiernan, Eric E. Niederkofler, Kemmons A. Tubbs, and Randall W. Nelson
- 1819 **Proteomics in Clinical Trials and Practice: Present Uses and Future Promise**
Nilofer S. Azad, Nabila Rasool, Christina M. Annunziata, Lori Minasian, Gordon Whiteley, and Elise C. Kohn

On the cover, CAX-PAGE/RPLC-MSMS proteomics platform for discovery of protein biomarkers of traumatic brain injury. Applied to naïve and injured tissue from a controlled cortical impact rat model, proteins are resolved by multidimensional separations and quantified by densitometry. Peptide identification and quantitation are then performed and correlated with protein data. A total of 59 differential proteins were identified. Validation of subsequent protein hits was performed and correlated to biological function. For details, see the article by Kobeissy *et al.*, pages 1887–1898.

- 1830 **Mass Spectrometric Identification of Human Prostate Cancer-derived Proteins in Serum of Xenograft-bearing Mice**
Gert-Jan C. M. van den Bermd, Jeroen Krijgsveld, Theo M. Luider, Angelique L. van Rijswijk, Jeroen A. A. Demmers, and Guido Jenster
- 1840 **Serum Peptidome Patterns That Distinguish Metastatic Thyroid Carcinoma from Cancer-free Controls Are Unbiased by Gender and Age**
[S] *Josep Villanueva, Andrew J. Martorella, Kevin Lawlor, John Philip, Martin Fleisher, Richard J. Robbins, and Paul Tempst*

Cardiovascular Diseases

- 1853 **Proteomics-based Development of Biomarkers in Cardiovascular Disease: Mechanistic, Clinical, and Therapeutic Insights**
Manuel Mayr, Jun Zhang, Andrew S. Greene, David Gutterman, Joseph Perloff, and Peipei Ping

Other Diseases and Conditions

- 1865 **Guilt by Association: The Nuclear Envelope Proteome and Disease**
Gavin S. Wilkie and Eric C. Schirmer
- 1876 **Biomarker Discovery by Imaging Mass Spectrometry: Transthyretin Is a Biomarker for Gentamicin-induced Nephrotoxicity in Rat**
Hélène Meistermann, Jeremy L. Norris, Hans-Rudolf Aerni, Dale S. Cornett, Arno Friedlein, Annette R. Erskine, Angélique Augustin, Maria Cristina De Vera Mudry, Stefan Ruepp, Laura Suter, Hanno Langen, Richard M. Caprioli, and Axel Ducret
- 1887 **Novel Differential Neuroproteomics Analysis of Traumatic Brain Injury in Rats**
Firas H. Kobeissy, Andrew K. Ottens, Zhiqun Zhang, Ming Cheng Liu, Nancy D. Denslow, Jitendra R. Dave, Frank C. Tortella, Ronald L. Hayes, and Kevin K. W. Wang
- 1899 **High Dynamic Range Characterization of the Trauma Patient Plasma Proteome**
[S] *Tao Liu, Wei-Jun Qian, Marina A. Gritsenko, Wenzhong Xiao, Lyle L. Moldawer, Amit Kaushal, Matthew E. Monroe, Susan M. Varnum, Ronald J. Moore, Samuel O. Purvine, Ronald V. Maier, Ronald W. Davis, Ronald G. Tompkins, David G. Camp II, Richard D. Smith, and the Inflammation and the Host Response to Injury Large Scale Collaborative Research Program*
- 1914 **Protein Biomarkers in a Mouse Model of Extremes in Trait Anxiety**
Claudia Ditzen, Archana M. Jastorff, Melanie S. Kessler, Mirjam Bunck, Larysa Teplytska, Angelika Erhardt, Simone A. Krömer, Jeeva Varadarajulu, Bianca-Sabrina Targosz, Eser F. Sayan-Ayata, Florian Holsboer, Rainer Landgraf, and Christoph W. Turck

Proteomics Data Analysis

- 1921 **Challenges and Opportunities in Proteomics Data Analysis**
Bruno Domon and Ruedi Aebersold
- 1927 **PEPPER, a Platform for Experimental Proteomic Pattern Recognition**
[S] *Jacob D. Jaffe, D. R. Mani, Kyriacos C. Leptos, George M. Church, Michael A. Gillette, and Steven A. Carr*

Methodologies

- 1942 **Identification and Validation of Mannose 6-Phosphate Glycoproteins in Human Plasma Reveal a Wide Range of Lysosomal and Non-lysosomal Proteins**
[S] *David E. Sleat, Yanhong Wang, Istvan Sohar, Henry Lackland, Yan Li, Hong Li, Haiyan Zheng, and Peter Lobel*

- 1957 **Lectin Capture Strategies Combined with Mass Spectrometry for the Discovery of Serum Glycoprotein Biomarkers**
Richard R. Drake, E. Ellen Schwegler, Gunjan Malik, Jose Diaz, Timothy Block, Anand Mehta, and O. John Semmes
- 1968 **Efficient Fractionation and Improved Protein Identification by Peptide OFFGEL Electrophoresis**
[S] *Patric Hörth, Christine A. Miller, Tobias Preckel, and Christian Wenz*
- 1975 **A Novel Histology-directed Strategy for MALDI-MS Tissue Profiling That Improves Throughput and Cellular Specificity in Human Breast Cancer**
Dale S. Cornett, James A. Mobley, Eduardo C. Dias, Malin Andersson, Carlos L. Arteaga, Melinda E. Sanders, and Richard M. Caprioli
- 1984 **Establishment of a Reliable Method for Direct Proteome Characterization of Human Articular Cartilage**
Jean-Baptiste Vincourt, Frédéric Lionneton, Gueorgui Kratassiouk, François Guillemin, Patrick Netter, Didier Mainard, and Jacques Magdalou

Meeting Report

- 1996 **A Reagent Resource to Identify Proteins and Peptides of Interest for the Cancer Community: A Workshop Report**
Brian B. Haab, Amanda G. Paulovich, N. Leigh Anderson, Adam M. Clark, Gregory J. Downing, Henning Hermjakob, Joshua LaBaer, and Mathias Uhlen

Information

- 2008 **Calendar**
- 2010 **Instructions to Authors**