



Table of Contents

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

Research

- 1 **Functional Proteomics Study Reveals That *N*-Acetylglucosaminyltransferase V Reinforces the Invasive/Metastatic Potential of Colon Cancer through Aberrant Glycosylation on Tissue Inhibitor of Metalloproteinase-1**
Yong-Sam Kim, Soo Young Hwang, Hye-Yeon Kang, Hosung Sohn, Sejeong Oh, Jin-Young Kim, Jong Shin Yoo, Young Hwan Kim, Cheorl-Ho Kim, Jae-Heung Jeon, Jung Mi Lee, Hyun Ah Kang, Eiji Miyoshi, Naoyuki Taniguchi, Hyang-Sook Yoo, and Jeong-Heon Ko
- 15 **The *in Vivo* Brain Interactome of the Amyloid Precursor Protein**
Yu Bai, Kelly Markham, Fusheng Chen, Rasanjala Weerasekera, Joel Watts, Patrick Horne, Yosuke Wakutani, Rick Bagshaw, Paul M. Mathews, Paul E. Fraser, David Westaway, Peter St. George-Hyslop, and Gerold Schmitt-Ulms
- 35 **Functional Dissection of a HECT Ubiquitin E3 Ligase**
Jin-ying Lu, Yu-yi Lin, Jiang Qian, Sheng-ce Tao, Jian Zhu, Cecile Pickart, and Heng Zhu
- 46 **Identifying Dynamic Interactors of Protein Complexes by Quantitative Mass Spectrometry**
Xiaorong Wang and Lan Huang
- 58 **Proteomics Analysis of Serum from Mutant Mice Reveals Lysosomal Proteins Selectively Transported by Each of the Two Mannose 6-Phosphate Receptors**
Meiqian Qian, David E. Sleat, Haiyan Zheng, Dirk Moore, and Peter Lobel
- 71 **Investigating MS²/MS³ Matching Statistics: A Model for Coupling Consecutive Stage Mass Spectrometry Data for Increased Peptide Identification Confidence**
Peter J. Ulintz, Bernd Bodenmiller, Philip C. Andrews, Ruedi Aebersold, and Alexey I. Nesvizhskii
- 88 **Proteomics Approach to Identify Dehydration Responsive Nuclear Proteins from Chickpea (*Cicer arietinum* L.)**
Aarti Pandey, Subhra Chakraborty, Asis Datta, and Niranjan Chakraborty
- 108 **Study of Early Leaf Senescence in *Arabidopsis thaliana* by Quantitative Proteomics Using Reciprocal ¹⁴N/¹⁵N Labeling and Difference Gel Electrophoresis**
Romano Hebel, Silke Oeljeklaus, Kai A. Reidegeld, Martin Eisenacher, Christian Stephan, Barbara Sitek, Kai Stühler, Helmut E. Meyer, Marcel J. G. Sturre, Paul P. Dijkwel, and Bettina Warscheid
- 121 **Discovering Novel Interactions at the Nuclear Pore Complex Using Bead Halo: A Rapid Method for Detecting Molecular Interactions of High and Low Affinity at Equilibrium**
Samir S. Patel and Michael F. Rexach

On the cover, new strategies for characterization of interacting partners of protein complexes using affinity purification and SILAC-based quantitative MS analysis. Cells stably expressing Rpn11-HTBH were grown in light (L) medium, while cells stably expressing the HTBH tag alone were grown in heavy (H) medium. Two sample preparation strategies were employed: (a) PAM (purification after mixing) and (b) MAP (mixing after purification). Four types of proteins are classified here based on characteristic patterns of their SILAC ratios. For details, see the article by Wang and Huang, pages 46–57.

- 132 **In Vivo Identification of Human Small Ubiquitin-like Modifier Polymerization Sites by High Accuracy Mass Spectrometry and an *in Vitro* to *in Vivo* Strategy**
Ivan Matic, Martijn van Hagen, Joost Schimmel, Boris Macek, Stephen C. Ogg, Michael H. Tatham, Ronald T. Hay, Angus I. Lamond, Matthias Mann, and Alfred C. O. Vertegaal
- 145 **PhosphoBlast, a Computational Tool for Comparing Phosphoprotein Signatures among Large Datasets**
Yingchun Wang and Richard L. Klemke
- 163 **Protein Expression Profiling of Breast Cancer Cells by Dissociable Antibody Microarray (DAMA) Staining**
X. Cynthia Song, Guanyuan Fu, Xufen Yang, Zhong Jiang, Yingjian Wang, and G. Wayne Zhou
- 170 **Identification of Endogenously Presented Peptides from *Chlamydia trachomatis* with High Homology to Human Proteins and to a Natural Self-ligand of HLA-B27**
Juan J. Cragolini and José A. López de Castro
- 181 **Motif Decomposition of the Phosphotyrosine Proteome Reveals a New N-terminal Binding Motif for SHIP2**
Martin Lee Miller, Stefan Hanke, Anders Mørkeberg Hinsby, Carsten Friis, Søren Brunak, Matthias Mann, and Nikolaj Blom
- 193 **Biological Variation of the Platelet Proteome in the Elderly Population and Its Implication for Biomarker Research**
Wolfgang Winkler, Maria Zellner, Michael Diestinger, Rita Babeluk, Martina Marchetti, Alexandra Goll, Sonja Zehetmayer, Peter Bauer, Eduard Rappold, Ingrid Miller, Erich Roth, Günter Allmaier, and Rudolf Oehler

HUPO Views

- 204 **Proteome Biology of Stem Cells: A New Joint HUPO and ISSCR Initiative**
Jeroen Krijgsveld, Anthony D. Whetton, Bonghee Lee, Ihor Lemischka, Steve Oh, Martin Pera, Christine Mummery, and Albert J. R. Heck

Information

- 206 **Calendar**
- 207 **Instructions to Authors**