

Journal of The American Society for  
**MASS SPECTROMETRY**



June 2015 / Volume 26 / Number 6 **Table of Contents**

**ASMS NEWS & VIEWS**

*i-ii*

ASMS News & Views  
Edited by Gavin Reid

**FOCUS ON IMAGING MASS SPECTROMETRY: EDITORIAL**

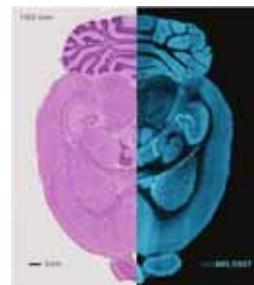
**847 – 849**

Focus on Imaging Mass Spectrometry, Honoring Dr. Richard M. Caprioli,  
Recipient of the 2014 ASMS Award for a Distinguished Contribution  
in Mass Spectrometry  
*J.L. Norris and V.M. Bierbaum*

**FOCUS: IMAGING MASS SPECTROMETRY: ACCOUNT & PERSPECTIVE**

**850 – 852**

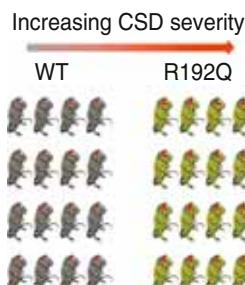
Imaging Mass Spectrometry: Enabling a New Age of Discovery in Biology  
and Medicine Through Molecular Microscopy  
*R.M. Caprioli*



**FOCUS: IMAGING MASS SPECTROMETRY: RESEARCH ARTICLES**

**853 – 861**

Large-Scale Mass Spectrometry Imaging Investigation of Consequences  
of Cortical Spreading Depression in a Transgenic Mouse Model of Migraine  
*R.J. Carreira, R. Shyti, B. Balluff, W.M. Abdelmoula, S.H. van Heiningen,  
R.J. van Zeijl, J. Dijkstra, M.D. Ferrari, E.A. Tolner, L.A. McDonnell,  
and A.M.J.M. van den Maagdenberg*



Instructions for authors for *The Journal of The American Society for Mass Spectrometry* can be found at  
[www.springer.com/13361](http://www.springer.com/13361)

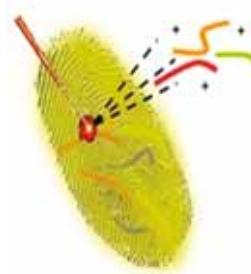
**Abstracted/Index in:** Academic OneFile, Academic Search, Chimica, CSA/Proquest, Current Abstracts, Current Contents/Physical, Chemical and Earth Sciences, EI-Compendex, EMBASE, Food Science and Technology Abstracts, Google Scholar, IBIDS, INIS Atomindex, Inspec, OCLC, PubMed/Medline, Science Citation Index, Science Citation Index Expanded (SciSearch), SCOPUS, and Summon by Serial Solutions.

Journal of the American Society for Mass Spectrometry (ISSN 1044-0305) is published monthly by Springer Science & Business Media, 233 Spring St, 6th Fl., New York, NY. Periodicals postage is pending at New York, NY and additional mailing offices. POSTMASTER: Send address changes to *Journal of The American Society for Mass Spectrometry*, Springer, 233 Spring Street, New York, NY 10013, USA.

**862 – 872**

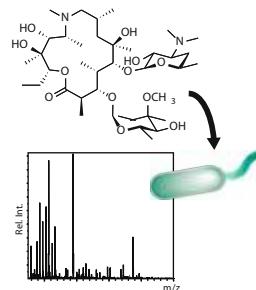
Alternative Surfactants for Improved Efficiency of In Situ Tryptic Proteolysis of Fingermarks

*E. Patel, M.R. Clench, A. West, P.S. Marshall, N. Marshall, and S. Francesc*

**873 – 877**

Mass Spectrometry Analysis of *Pseudomonas aeruginosa* Treated with Azithromycin

*V.V. Phelan, J. Fang, and P.C. Dorrestein*

**878 – 886**

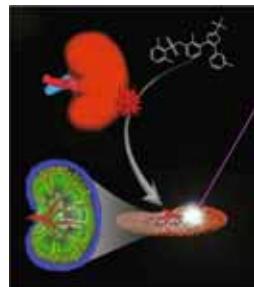
Development of Laser Desorption Imaging Mass Spectrometry Methods to Investigate the Molecular Composition of Latent Fingermarks

*N. Lauzon, M. Dufresne, V. Chauhan, and P. Chaurand*

**887 – 898**

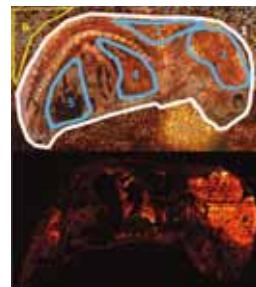
Imaging MS in Toxicology: An Investigation of Juvenile Rat Nephrotoxicity Associated with Dabrafenib Administration

*M.R. Groseclose, S.B. Laffan, K.S. Frazier, A. Hughes-Earle, and S. Castellino*

**899 – 910**

Influence of Desorption Conditions on Analyte Sensitivity and Internal Energy in Discrete Tissue or Whole Body Imaging by IR-MALDESI

*E.P. Rosen, M.T. Bokhart, H.T. Ghashghaei, and D.C. Muddiman*

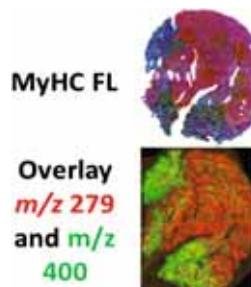


**911 – 914**

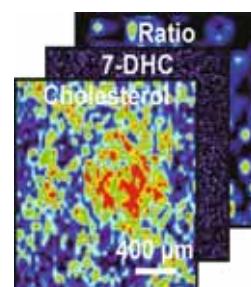
Reproducible Matrix Deposition for MALDI MSI Based on Open-Source Software and Hardware  
*M. Stoeckli and D. Staab*

**915 – 923**

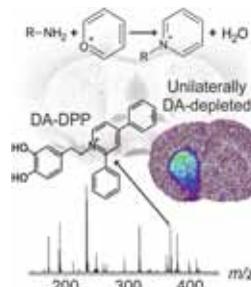
Metabolomic Analysis of Oxidative and Glycolytic Skeletal Muscles by Matrix-Assisted Laser Desorption/Ionization Mass Spectrometric Imaging (MALDI MSI)  
*Y.-H. Tsai, T.J. Garrett, C.S. Carter, and R.A. Yost*

**924 – 933**

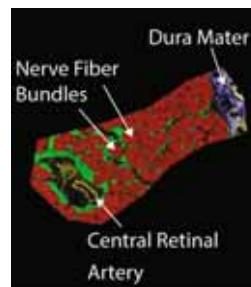
Profiling and Imaging Ion Mobility-Mass Spectrometry Analysis of Cholesterol and 7-Dehydrocholesterol in Cells Via Sputtered Silver MALDI  
*L. Xu, M. Kliman, J.G. Forsythe, Z. Korade, A.B. Hmelo, N.A. Porter, and J.A. McLean*

**934 – 939**

Pyrylium Salts as Reactive Matrices for MALDI-MS Imaging of Biologically Active Primary Amines  
*M. Sharifatgorji, A. Nilsson, P. Källback, O. Karlsson, X. Zhang, P. Svenningsson, and P.E. Andren*

**940 – 947**

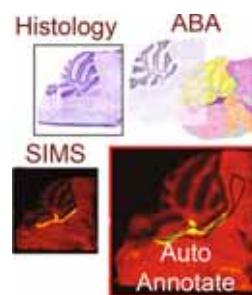
High Spatial Resolution Imaging Mass Spectrometry of Human Optic Nerve Lipids and Proteins  
*D.M.G. Anderson, J.M. Spraggins, K.L. Rose, and K.L. Schey*



**948 – 957**

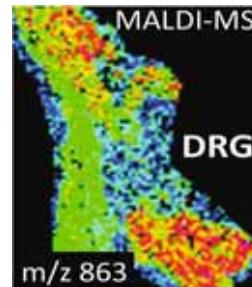
Precise Anatomic Localization of Accumulated Lipids in *Mfp2*Deficient Murine Brains Through Automated Registration of SIMS Images to the Allen Brain Atlas

*K. Škrášková, A. Khmelinskii, W.M. Abdelmoula, S. De Munter, M. Baes, L. McDonnell, J. Dijkstra, and R.M.A. Heeren*

**958 – 966**

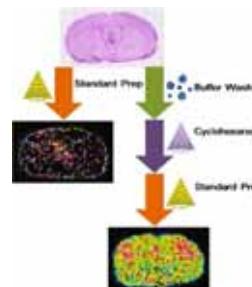
Mass Spectrometry Imaging and GC-MS Profiling of the Mammalian Peripheral Sensory-Motor Circuit

*S.S. Rubakhin, A. Ulanov, and J.V. Sweedler*

**967 – 973**

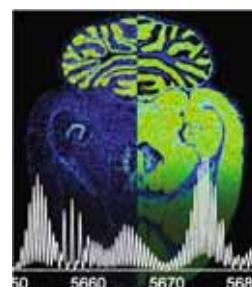
Imaging MALDI MS of Dosed Brain Tissues Utilizing an Alternative Analyte Pre-extraction Approach

*C.M. Quiason and S.K. Shahidi-Latham*

**974 – 985**

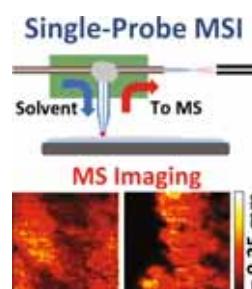
MALDI FTICR IMS of Intact Proteins: Using Mass Accuracy to Link Protein Images with Proteomics Data

*J.M. Spraggins, D.G. Rizzo, J.L. Moore, K.L. Rose, N.D. Hammer, E.P. Skaar, and R.M. Caprioli*

**RESEARCH ARTICLES****986 – 993**

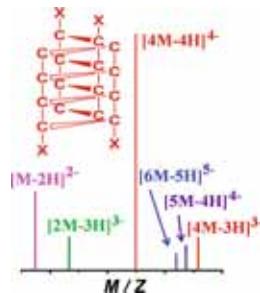
High Resolution Tissue Imaging Using the Single-probe Mass Spectrometry under Ambient Conditions

*W. Rao, N. Pan, and Z. Yang*

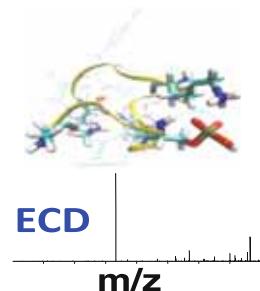


**994 – 1003**

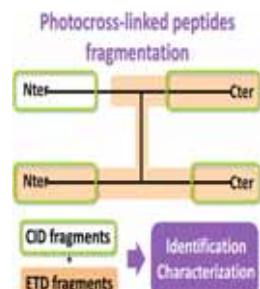
Formation and Dissociation of the Interstrand i-Motif by the Sequences  $d(X_nC_4Y_m)$  Monitored with Electrospray Ionization Mass Spectrometry  
*Y. Cao, Y. Qin, M. Bruist, S. Gao, B. Wang, H. Wang, and X. Guo*

**1004 – 1013**

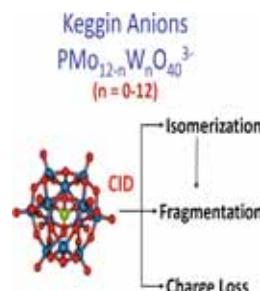
Probing the Electron Capture Dissociation Mass Spectrometry of Phosphopeptides with Traveling Wave Ion Mobility Spectrometry and Molecular Dynamics Simulations  
*D. Kim, P.-J. Pai, A.J. Creese, A.W. Jones, D.H. Russell, and H.J. Cooper*

**1014 – 1026**

Photocross-Linked Peptide–Protein Complexes Analysis: A Comparative Study of CID and ETD Fragmentation Modes  
*S. Clavier, G. Bolbach, and E. Sachon*

**1027 – 1035**

Gas-Phase Fragmentation Pathways of Mixed Addenda Keggin Anions:  $PMo_{12-n}W_nO_{40}^{3-}$  ( $n = 0–12$ )  
*K.D.D. Gunaratne, V. Prabhakaran, G.E. Johnson, and J. Laskin*

**1036 – 1045**

Ionization of EPA Contaminants in Direct and Dopant-Assisted Atmospheric Pressure Photoionization and Atmospheric Pressure Laser Ionization  
*T.J. Kauppila, H. Kersten, and T. Benter*

