

## Research

- 2550 **Label-free Quantitative Proteomics of Mouse Cerebrospinal Fluid Detects  $\beta$ -Site APP Cleaving Enzyme (BACE1) Protease Substrates In Vivo**  
[S] *Bastian Dislich, Felix Wohlrab, Teresa Bachhuber, Stephan A. Müller, Peer-Hendrik Kuhn, Sebastian Hög, Melanie Meyer-Luehmann, and Stefan F. Lichtenthaler*
- 2564 **Morphine Regulated Synaptic Networks Revealed by Integrated Proteomics and Network Analysis**  
[S] *Steven D. Stockton Jr., Ivone Gomes, Tong Liu, Chandrakala Moraje, Lucia Hipólito, Matthew R. Jones, Avi Ma'ayan, Jose A. Morón, Hong Li, and Lakshmi A. Devi*
- 2577 **Structural Basis of GD2 Ganglioside and Mimetic Peptide Recognition by 14G2a Antibody**  
[S] *Irena Horwacik, Przemyslaw Golik, Przemyslaw Grudnik, Michal Kolinski, Michal Zdzalik, Hanna Rokita, and Grzegorz Dubin*
- 2591 **A Pneumococcal Protein Array as a Platform to Discover Serodiagnostic Antigens Against Infection**  
[S] *Alfonso Olaya-Abril, Irene Jiménez-Munguía, Lidia Gómez-Gascón, Ignacio Obando, and Manuel J. Rodríguez-Ortega*
- 2609 **p53-Regulated Networks of Protein, mRNA, miRNA, and lncRNA Expression Revealed by Integrated Pulsed Stable Isotope Labeling With Amino Acids in Cell Culture (pSILAC) and Next Generation Sequencing (NGS) Analyses**  
[S] *Sabine Hüntten, Markus Kaller, Friedel Drepper, Silke Oeljeklaus, Thomas Bonfert, Florian Erhard, Anne Dueck, Norbert Eichner, Caroline C. Friedel, Gunter Meister, Ralf Zimmer, Bettina Warscheid, and Heiko Hermeking*
- 2630 **Characterization of Regenerative Phenotype of Unrestricted Somatic Stem Cells (USSC) from Human Umbilical Cord Blood (hUCB) by Functional Secretome Analysis**  
[S] *Jessica Schira, Heiner Falkenberg, Marion Hendricks, Daniel M. Waldera-Lupa, Gesine Kögler, Helmut E. Meyer, Hans Werner Müller, and Kai Stühler*
- 2644 **The Negative Mode Proteome with Activated Ion Negative Electron Transfer Dissociation (AI-NETD)**  
*Nicholas M. Riley, Matthew J. P. Rush, Christopher M. Rose, Alicia L. Richards, Nicholas W. Kwiecien, Derek J. Bailey, Alexander S. Hebert, Michael S. Westphall, and Joshua J. Coon*
- 2661 **Targeted Proteomics-Driven Computational Modeling of Macrophage S1P Chemosensing**  
[S] *Nathan P. Manes, Bastian R. Angermann, Marijke Koppenol-Raab, Eunkyung An, Virginie H. Sjoelund, Jing Sun, Masaru Ishii, Ronald N. Germain, Martin Meier-Schellersheim, and Aleksandra Nita-Lazar*
- 2682 **Quantitative Proteomics Reveals the Essential Roles of Stromal Interaction Molecule 1 (STIM1) in the Testicular Cord Formation in Mouse Testis**  
[S] *Bo Zheng, Dan Zhao, Pan Zhang, Cong Shen, Yueshuai Guo, Tao Zhou, Xuejiang Guo, Zuomin Zhou, and Jiahao Sha*

On the cover: GD2 ganglioside (GD2) is abundantly present in the outer cell membrane of neuroblastoma. This allows for diagnosis and therapeutic targeting of the neoplasm with GD2-specific antibodies. We show that formation of GD2-antibody (14G2a) complex is accompanied by significant rearrangement within the binding region, along with reorganization of the water network. For details, see the article by Irena Horwacik, *et al.*, pages 2577–2590.

- 2692 **Facile Discovery of Cell-Surface Protein Targets of Cancer Cell Aptamers**  
 [S] *Tao Bing, Dihua Shangguan, and Yinsheng Wang*
- 2701 **Systematic Determination of Human Cyclin Dependent Kinase (CDK)-9 Interactome Identifies Novel Functions in RNA Splicing Mediated by the DEAD Box (DDX)-5/17 RNA Helicases**  
 [S] *Jun Yang, Yingxin Zhao, Mridul Kalita, Xuelling Li, Mohammad Jamaluddin, Bing Tian, Chukwudi B. Edeh, John E. Wiktorowicz, Andrzej Kudlicki, and Allan R. Brasier*
- 2722 **Proteomic Analysis Reveals Distinct Metabolic Differences Between Granulocyte-Macrophage Colony Stimulating Factor (GM-CSF) and Macrophage Colony Stimulating Factor (M-CSF) Grown Macrophages Derived from Murine Bone Marrow Cells**  
 [S] *Yi Rang Na, Ji Hye Hong, Min Yong Lee, Jae Hun Jung, Daun Jung, Young Won Kim, Dain Son, Murim Choi, Kwang Pyo Kim, and Seung Hyeok Seok II*
- 2733 **Post-Transcriptional Coordination of the *Arabidopsis* Iron Deficiency Response is Partially Dependent on the E3 Ligases RING DOMAIN LIGASE1 (RGLG1) and RING DOMAIN LIGASE2 (RGLG2)**  
 [S] *I-Chun Pan, Huei-Hsuan Tsai, Ya-Tan Cheng, Tuan-Nan Wen, Thomas J. Buckhout, and Wolfgang Schmidt*
- 2753 **Integrated Proteomic and Glycoproteomic Analyses of Prostate Cancer Cells Reveal Glycoprotein Alteration in Protein Abundance and Glycosylation**  
 [S] *Punit Shah, Xiangchun Wang, Weiming Yang, Shadi Toghi Eshghi, Shisheng Sun, Naseruddin Hoti, Lijun Chen, Shuang Yang, Jered Pasay, Abby Rubin, and Hui Zhang*
- 2764 **The Epoxyeicosatrienoic Acid Pathway Enhances Hepatic Insulin Signaling and is Repressed in Insulin-Resistant Mouse Liver**  
 [S] \* *Alexander Schäfer, Susanne Neschen, Melanie Kahle, Hakan Sarioglu, Tobias Gaisbauer, Axel Imhof, Jerzy Adamski, Stefanie M. Hauck, and Marius Ueffing*

## Technological Innovations and Resources

- 2775 **Evaluation of Protein Profiles From Treated Xenograft Tumor Models Identifies an Antibody Panel for Formalin-fixed and Paraffin-embedded (FFPE) Tissue Analysis by Reverse Phase Protein Arrays (RPPA)**  
 [S] *Sabine Bader, Magdalena Zajac, Thomas Friess, Elisabeth Ruge, Natascha Rieder, Berthold Gierke, Yvonne Heubach, Marlene Thomas, and Michael Pawlak*
- 2786 **Quantification of HER2 by Targeted Mass Spectrometry in Formalin-Fixed Paraffin-Embedded (FFPE) Breast Cancer Tissues**  
 [S] *Carine Steiner, Jean-Christophe Tille, Jens Lamerz, Sabine Kux van Geijtenbeek, Thomas A. McKee, Miro Venturi, Laura Rubbia-Brandt, Denis Hochstrasser, Paul Cutler, Pierre Lescuyer, and Axel Ducret*
- 2800 **Identification of a Set of Conserved Eukaryotic Internal Retention Time Standards for Data-independent Acquisition Mass Spectrometry**  
 [S] *Sarah J. Parker, Hannes Rost, George Rosenberger, Ben C. Collins, Lars Malmström, Dario Amodei, Vidya Venkatraman, Koen Raedschelders, Jennifer E. Van Eyk, and Ruedi Aebersold*
- 2814 **MStern Blotting–High Throughput Polyvinylidene Fluoride (PVDF) Membrane-Based Proteomic Sample Preparation for 96-Well Plates**  
 [S] *Sebastian T. Berger, Saima Ahmed, Jan Muntel, Nerea Cuevas Polo, Richard Bachur, Alex Kentsis, Judith Steen, and Hanno Steen*
- 2824 **Integrated Microfluidics for Protein Modification Discovery**  
 [S] *Meirav Noach-Hirsh, Hadas Nevenzal, Yair Glick, Evelin Chorni, Dorit Avrahami, Efrat Barbiro-Michaely, Doron Gerber, and Amit Tzur*
- 2833 **A High Through-put Platform for Recombinant Antibodies to Folded Proteins**  
 [S] \* *Michael Hornsby, Marcin Paduch, Shane Miersch, Annika Sääf, Tet Matsuguchi, Brian Lee, Karolina Wypisniak, Allison Doak, Daniel King, Svitlana Usatyuk, Kimberly Perry, Vince Lu, William Thomas, Judy Luke, Jay Goodman, Robert J. Hoey, Darson Lai, Carly Griffin, Zhijian Li, Franco J. Vizeacoumar, Debbie Dong, Elliot Campbell, Stephen Anderson, Nan Zhong, Susanne Gräslund, Shohei Koide, Jason Moffat, Sachdev Sidhu, Anthony Kossiakoff, and James Wells*

## AUTHOR INDEX

- Adamski, Jerzy, 2776  
Aebersold, Ruedi, 2800  
Ahmed, Saima, 2814  
Amodei, Dario, 2800  
An, Eunkyung, 2661  
Anderson, Stephen, 2833  
Angermann, Bastian R., 2661  
Avrahami, Dorit, 2824
- Bachhuber, Teresa, 2550  
Bachur, Richard, 2814  
Bader, Sabine, 2775  
Bailey, Derek J., 2644  
Barbiro-Michaely, Efrat, 2824  
Berger, Sebastian T., 2814  
Bing, Tao, 2692  
Bonfert, Thomas, 2609  
Brasier, Allan R., 2701  
Buckhout, Thomas J., 2733
- Campbell, Elliot, 2833  
Chen, Lijun, 2753  
Cheng, Ya-Tan, 2733  
Choi, Murim, 2722  
Chorni, Evelin, 2824  
Collins, Ben C, 2800  
Coon, Joshua J., 2644  
Cuevas Polo, Nerea, 2814  
Cutler, Paul, 2786
- Devi, Lakshmi A., 2564  
Dislich, Bastian, 2550  
Doak, Allison, 2833  
Dong, Debbie, 2833  
Drepper, Friedel, 2609  
Dubin, Grzegorz, 2577  
Ducret, Axel, 2786  
Dueck, Anne, 2609
- Edeh, Chukwudi B., 2701  
Eichner, Norbert, 2609  
Erhard, Florian, 2609
- Falkenberg, Heiner, 2630  
Friedel, Caroline C., 2609  
Friess, Thomas, 2775
- Gaisbauer, Tobias, 2764  
Gerber, Doron, 2824  
Germain, Ronald N., 2661  
Gesine Kögler, 2630  
Gierke, Berthold, 2775  
Glick, Yair, 2824  
Goodman, Jay, 2833  
Golik, Przemyslaw, 2577  
Gomes, Ivone, 2564
- Gómez-Gascón, Lidia, 2591  
Gräslund, Susanne, 2833  
Griffin, Carly, 2833  
Grudnik, Przemyslaw, 2577  
Guo, Xuejiang, 2682  
Guo, Yueshuai, 2682
- Hauck, Stefanie M., 2764  
Hebert, Alexander S., 2644  
Helmut E. Meyer, 2630  
Hendricks, Marion, 2630  
Hermeking, Heiko, 2609  
Heubach, Yvonne, 2775  
Hipólito, Lucia, 2564  
Hochstrasser, Denis, 2786  
Hoey, Robert J., 2833  
Hogl, Sebastian, 2550  
Hong, Ji Hye, 2722  
Hornsby, Michael, 2833  
Horwacik, Irena, 2577  
Hoti, Naseruddin, 2753  
Hüntten, Sabine, 2609
- Imhof, Axel, 2764  
Ishii, Masaru, 2661
- Jamaluddin, Mohammad, 2701  
Jiménez-Munguía, Irene, 2591  
Jessica Schira, 2630  
Jones, Matthew R., 2564  
Jung, Daun, 2722  
Jung, Jae Hun, 2722
- Kahle, Melanie, 2764  
Kalita, Mridul, 2701  
Kaller, Markus, 2609  
Kentsis, Alex, 2814  
Kim, Kwang Pyo, 2722  
Kim, Young Won, 2722  
King, Daniel, 2833  
Koide, Shohei, 2833  
Kolinski, Michal, 2577  
Koppenol-Raab, Marijke, 2661  
Kossiakoff, Anthony, 2833  
Kudlicki, Andrzej, 2701  
Kuhn, Peer-Hendrik, 2550  
Kux van Geijtenbeek, Sabine, 2786  
Kwiecien, Nicholas W., 2644
- Lai, Darson, 2833  
Lamerz, Jens, 2786  
Lee, Brian, 2833  
Lee, Min Yong, 2722  
Lescuyer, Pierre, 2786  
Li, Hong, 2564  
Li, Xueling, 2701

Li, Zhijian, 2833  
 Lichtenthaler, Stefan F., 2550  
 Liu, Tong, 2564  
 Lu, Vince, 2833  
 Luke, Judy, 2833  
  
 Ma'ayan, Avi, 2564  
 Malmström, Lars, 2800  
 Manes, Nathan P., 2661  
 Matsuguchi, Tet, 2833  
 McKee, Thomas A., 2786  
 Meier-Schellersheim, Martin, 2661  
 Meister, Gunter, 2609  
 Meyer-Luehmann, Melanie, 2550  
 Miersch, Shane, 2833  
 Moffat, Jason, 2833  
 Morón, Jose A., 2564  
 Moraje, Chandrakala, 2564  
 Müller, Hans Werner, 2630  
 Müller, Stephan A., 2550  
 Muntel, Jan, 2814  
  
 Na, Yi Rang, 2722  
 Neschen, Susanne, 2764  
 Nevenzal, Hadas, 2824  
 Nita-Lazar, Aleksandra, 2661  
 Noach-Hirsh, Meirav, 2824  
  
 Obando, Ignacio, 2591  
 Oeljeklaus, Silke, 2609  
 Olaya-Abril, Alfonso, 2591  
  
 Paduch, Marcin, 2833  
 Pan, I-Chun, 2733  
 Parker, Sarah J., 2800  
 Pasay, Jered, 2753  
 Pawlak, Michael, 2775  
 Perry, Kimberly, 2833  
  
 Raedschelders, Koen, 2800  
 Richards, Alicia L., 2644  
 Rieder, Natascha, 2775  
 Riley, Nicholas M., 2644  
 Rodríguez-Ortega, Manuel J., 2591  
 Rokita, Hanna, 2577  
 Rose, Christopher M., 2644  
 Rosenberger, George, 2800  
 Rost, Hannes, 2800  
 Rubbia-Brandt, Laura, 2786  
 Rubin, Abby, 2753  
 Ruge, Elisabeth, 2775  
 Rush, Matthew J. P., 2644  
  
 Sääf, Annika, 2833  
 Sarioglu, Hakan, 2764  
 Schäfer, Alexander, 2764  
 Schmidt, Wolfgang, 2733  
  
 Seok II, Seung Hyeok, 2722  
 Sha, Jiahao, 2682  
 Shah, Punit, 2753  
 Shangguan, Dihua, 2692  
 Shen, Cong, 2682  
 Sidhu, Sachdev, 2833  
 Sjoelund, Virginie H., 2661  
 Son, Dain, 2722  
 Steen, Hanno, 2814  
 Steen, Judith, 2814  
 Steiner, Carine, 2786  
 Steven D. Stockton Jr., 2564  
 Stühler, Kai, 2630  
 Sun, Jing, 2661  
 Sun, Shisheng, 2753  
  
 Thomas, Marlene, 2775  
 Thomas, William, 2833  
 Tian, Bing, 2701  
 Tille, Jean-Christophe, 2786  
 Toghi Eshghi, Shadi, 2753  
 Tsai, Huei-Hsuan, 2733  
 Tzur, Amit, 2824  
  
 Ueffing, Marius, 2764  
 Usatyuk, Svitlana, 2833  
  
 Van Eyk, Jennifer E, 2800  
 Venkatraman, Vidya, 2800  
 Venturi, Miro, 2786  
 Vizeacoumar, Franco J., 2833  
  
 Waldera-Lupa, Daniel M., 2630  
 Wang, Xiangchun, 2753  
 Wang, Yinsheng, 2692  
 Warscheid, Bettina, 2609  
 Wells, James, 2833  
 Wen, Tuan-Nan, 2733  
 Westphall, Michael S., 2644  
 Wiktorowicz, John E., 2701  
 Wohlrab, Felix, 2550  
 Wypisniak, Karolina, 2833  
  
 Yang, Jun, 2701  
 Yang, Shuang, 2753  
 Yang, Weiming, 2753  
  
 Zajac, Magdalena, 2775  
 Zdzalik, Michal, 2577  
 Zhang, Hui, 2753  
 Zhang, Pan, 2682  
 Zhao, Dan, 2682  
 Zhao, Yingxin, 2701  
 Zheng, Bo, 2682  
 Zhong, Nan, 2833  
 Zhou, Tao, 2682  
 Zhou, Zuomin, 2682  
 Zimmer, Ralf, 2609