

Minireview

- 1 **Extracellular Protein Phosphorylation, the Neglected Side of the Modification**
[S] *Eva Klement and Katalin F. Medzihradszky*

Research

- 8 **Nano-liquid Chromatography-orbitrap MS-based Quantitative Proteomics Reveals Differences Between the Mechanisms of Action of Carnosic Acid and Carnosol in Colon Cancer Cells**
[S] *Alberto Valdés, Virginia García-Cañas, Konstantin A. Artemenko, Carolina Simó, Jonas Bergquist, and Alejandro Cifuentes*
- 23 **Quantitative Proteomic Analysis of Replicative and Nonreplicative Forms Reveals Important Insights into Chromatin Biology of *Trypanosoma cruzi***
[S] *Teresa Cristina Leandro de Jesus, Simone Guedes Calderano, Francisca Nathalia de Luna Vitorino, Ricardo Pariona Llanos, Mariana de Camargo Lopes, Christiane Bezerra de Araújo, Otavio Henrique Thiemann, Marcelo da Silva Reis, Maria Carolina Elias, and Julia Pinheiro Chagas da Cunha*
- 39 **Quantitative Proteomics Reveals Fundamental Regulatory Differences in Oncogenic HRAS and Isocitrate Dehydrogenase (IDH1) Driven Astrocytoma**
[S] *Sophia Doll, Anatoly Urisman, Juan A. Oses-Prieto, David Arnott, and Alma L. Burlingame*
- 57 **Human Spermatozoa Quantitative Proteomic Signature Classifies Normo- and Asthenozoospermia**
[S] *Mayank Saraswat, Sakari Joenväärä, Tushar Jain, Anil Kumar Tomar, Ashima Sinha, Sarman Singh, Savita Yadav, and Risto Renkonen*
- 73 **Quantitative GTPase Affinity Purification Identifies Rho Family Protein Interaction Partners**
[S] *Florian Paul, Henrik Zauber, Laura von Berg, Oliver Rocks, Oliver Daumke, and Matthias Selbach*
- 86 **Multi-omics Analysis of Serum Samples Demonstrates Reprogramming of Organ Functions Via Systemic Calcium Mobilization and Platelet Activation in Metastatic Melanoma**
[S] *Besnik Muqaku, Martin Eisinger, Samuel M. Meier, Ammar Tahir, Tobias Pukrop, Sebastian Haferkamp, Astrid Slany, Albrecht Reichle, and Christopher Gerner*
- 100 **Global Dynamic Proteome Study of a Pellicle-forming *Acinetobacter baumannii* Strain**
[S] *Takfarinas Kentache, Ahmed Ben Abdelkrim, Thierry Jouenne, Emmanuelle Dé, and Julie Hardouin*
- 113 ***Escherichia coli* Proteome Microarrays Identified the Substrates of ClpYQ Protease**
[S] *Chih-Hsuan Tsai, Yu-Hsuan Ho, Tzu-Cheng Sung, Whei-Fen Wu, and Chien-Sheng Chen*

On the cover: Isocitrate dehydrogenase 1 (IDH1) mutation is observed in nearly all secondary glioblastomas and suppresses the biochemical ability of IDH1 to convert isocitrate into α -Ketoglutarate (α -KG) by further converting α -KG into 2-hydroxyglutarate (2-HG). As a result, the 2-HG oncometabolite accumulates at high levels in IDH1 mutant tumors and inhibits α -KG-dependent histone and DNA demethylases, affecting epigenetic regulation and associated gene expression. Using targeted mass spectrometry the article by Doll *et al.* (This Issue) reports the quantification of significant histone methylation (Me), acetylation (Ac), and butyrylation (Bu) site occupancy changes related to IDH1 mutation in a cellular model of secondary glioblastoma. For more details, see the article by Sophia Doll *et al.*, pages 39–56.

121



Proteome Profiling Outperforms Transcriptome Profiling for Coexpression Based Gene Function Prediction

Jing Wang, Zihao Ma, Steven A. Carr, Philipp Mertins, Hui Zhang, Zhen Zhang, Daniel W. Chan, Matthew J. C. Ellis, R. Reid Townsend, Richard D. Smith, Jason E. McDermott, Xian Chen, Amanda G. Paulovich, Emily S. Boja, Mehdi Mesri, Christopher R. Kinsinger, Henry Rodriguez, Karin D. Rodland, Daniel C. Liebler, and Bing Zhang

135



Enzyme Kinetics for Complex System Enables Accurate Determination of Specificity Constants of Numerous Substrates in a Mixture by Proteomics Platform

Zhenzhen Deng, Jiawei Mao, Yan Wang, Hanfa Zou, and Mingliang Ye

AUTHOR INDEX

- Arnott, David, 39
Artemenko, Konstantin A., 8
- Ben Abdelkrim, Ahmed, 100
Bergquist, Jonas, 8
Bezerra de Araújo, Christiane, 23
Boja, Emily S., 121
Burlingame, Alma L., 39
- Calderano, Simone Guedes, 23
Carr, Steven A., 121
Chagas da Cunha, Julia Pinheiro, 23
Chan, Daniel W., 121
Chen, Chien-Sheng, 113
Chen, Xian, 121
Cifuentes, Alejandro, 8
- da Silva Reis, Marcelo, 23
Daumke, Oliver, 73
Dé, Emmanuelle, 100
Deng, Zhenzhen, 135
Doll, Sophia, 39
- Eisinger, Martin, 86
Elias, Maria Carolina, 23
Ellis, Matthew J. C., 121
- García-Cañas, Virginia, 8
Gerner, Christopher, 86
- Haferkamp, Sebastian, 86
Hardouin, Julie, 100
Ho, Yu-Hsuan, 113
- Jain, Tushar, 57
Joenväärä, Sakari, 57
Jouenne, Thierry, 100
- Kentache, Takfarinas, 100
Kinsinger, Christopher R., 121
Klement, Eva, 1
- Leandro de Jesus, Teresa Cristina, 23
Liebler, Daniel C., 121
Llanos, Ricardo Pariona, 23
Lopes, Mariana de Camargo, 23
- Ma, Zihao, 121
Mao, Jiawei, 135
McDermott, Jason E., 121
- Medzihradzsky, Katalin F., 1
Meier, Samuel M., 86
Mertins, Philipp, 121
Mesri, Mehdi, 121
Muçaku, Besnik, 86
- Oses-Prieto, Juan A., 39
- Paul, Florian, 73
Paulovich, Amanda G., 121
Pukrop, Tobias, 86
- Reichle, Albrecht, 86
Renkonen, Risto, 57
Rocks, Oliver, 73
Rodland, Karin D., 121
Rodriguez, Henry, 121
- Saraswat, Mayank, 57
Selbach, Matthias, 73
Simó, Carolina, 8
Singh, Sarman, 57
Sinha, Ashima, 57
Slany, Astrid, 86
Smith, Richard D., 121
Sung, Tzu-Cheng, 113
- Tahir, Ammar, 86
Thiemann, Otavio Henrique, 23
Tomar, Anil Kumar, 57
Townsend, R. Reid, 121
Tsai, Chih-Hsuan, 113
- Urisman, Anatoly, 39
- Valdés, Alberto, 8
Vitorino, Francisca Nathalia de Luna, 23
von Berg, Laura, 73
- Wang, Jing, 121
Wang, Yan, 135
Wu, Whei-Fen, 113
- Yadav, Savita, 57
Ye, Mingliang, 135
- Zauber, Henrik, 73
Zhang, Bing, 121
Zhang, Hui, 121
Zhang, Zhen, 121
Zou, Hanfa, 135