

15th Annual PEGS Summit Boston 2019

Abstracts

Boston, Massachusetts, USA
8-12 April 2019

ISBN: 978-1-7138-7103-3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2019) by Cambridge EnerTech
All rights reserved.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact Cambridge EnerTech
at the address below.

Cambridge EnerTech
Cambridge Innovation institute
250 First Avenue
Suite 300
Needham, MA 02494
USA

Phone: 781-972-5400
Fax: 781-972-5425

ce@cambridgeenertech.com

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Accelerating the Discovery of Therapeutic Antibodies Using High Throughput Array SPR..... <i>Yasmina Abdiche</i>	1
IgG1 Therapeutic Antibody-Induced IFN- γ Release in Whole Blood Assay is Dependent on Fc γ RIIIa..... <i>Nada Alakhras, Jiabin Qiu, Christopher A. Moreland, Laurent P. Malherbe</i>	2
High-Throughput Kinetic Characterisation of Monoclonal Antibodies <i>Ximena Altamirano, Peter Fechner, Natalie Jahn</i>	3
Llama DNA Immunization: An Effective Strategy for Generating Single Domain Antibodies of High Potency <i>Mehdi Arbabi-Ghahroudi, Martin A. Rossotti, Kevin A. Henry, Henk van Faassen, Jamshid Tanha, Deborah Callaghan, Greg Hussack, C. Roger MacKenzie, Mehdi Arbabi-Ghahroudi</i>	4
Impact of the Expression System on the Final Structure and Function of Recombinant Proteins..... <i>Anna Aris, Laia Gifre-Renom, Jose Vicente Carratala, Julieta Maria Sanchez, Neus Ferrer-Miralles, E. Garcia-Fruitos</i>	5
Anti-Human CXCR4 and Anti-Human IL-7R Antibodies Selected from Non- Immune Repertoires..... <i>Joana Assuncao, Ildiko Toth, Ana Pica-Milho, Silvia Andrade, Fernando Martins, Antonio Barroso, Joana Queiroz, Pedro Canhao, Daniela Teixeira, Maria Gonzalez-Pajuelo</i>	7
Isolation of Cyclic Peptide Binders from Yeast Display Libraries <i>Kaitlyn Bacon, Matthew Burroughs, Abigail Blain, Stefano Menegatti, Balaji Rao</i>	8
Protein Expression in Whole Insect Larvae with Baculovirus <i>Robert Balcerzak</i>	10
Production, Isolation and Characterization of Lactobacillus plantarum Inclusion Bodies <i>Ricardo Balta Foix, Caterina Serrano Adrover, Adria Lopez-Cano, Laia Gifre Renom, Alejandro Sanchez Chardi, Anna Aris, Elena Garcia Fruitos</i>	11
Preclinical Evaluation of Half-Life Extended Affimer Biotherapeutics Targeting the PD-L1 Pathway in Combination with a Novel Pyroptotic Agent PT-100 <i>Amrik Basran, Estelle Adam, Emma Jenkins, Floriane Laurent, Agata Oruba, Viviana Robles, Jyrik Sivula, Jennifer Hillman, Maureen West, Michelle Writer, Emma Stanley, Matthew Vincent, Sarah Poplawski, Jack Lai, David Sanford, Barry Jones, William Bachovchin</i>	12
Adaption of Human Antibody λ and κ Light Chain Architectures to CDR Repertoires <i>Joschka Bauer, Rob van der Kant, Anne R. Karow-Zwick, Sebastian Kube, Patrick Garidel, Michaela Blech, Frederic Rousseau, Joost Schymkowitz</i>	13
Advanced Antibody Analysis of NGS and Sanger Data from Selection and Screening Projects Accelerate Therapeutic Antibody Discovery <i>Jannick Bendtsen, Cecilie Boysen, Geoffrey Gonzalez-Escobedo, Owen Bodley, Megan Kennington, Alan Dragicevich, Thomas Paulin, Alicia Lai, Matt Kearse</i>	14
Construction and Next-Generation Sequencing Analysis of a Large Phage- Displayed VNAR Single-Domain Antibody Library from Six Naïve Nurse Sharks <i>Hejiao Bian, Mingqian Feng, Xiaolin Wu, Tianyun Fu, Ying Fu, Martin Flajnik, Mitchell Ho</i>	15

Evaluating a No-Wash Rapid FcRn Immunoassay to Guide Development of Antibody Therapeutics	16
<i>Michael Bodnaruk, Nidhi Nath, Becky Godat, Mike Rosenblatt, Rod Flemming, Marjeta Urh</i>	
Next-Generation Sequencing of Repertoires Integrated with Serum Proteomics for Antibody Discovery in Rabbit.....	17
<i>Stefano Bonissone, Natalie Castellana, Thiago Lima, Anand Patel</i>	
Discovery of Novel Cyclic Cell Penetrating Peptides via an mRNA Display Library	18
<i>John Bowen, Stefano Menegatti, Balaji Rao</i>	
Where's My Peak?: Separating Truth from Fiction in Label-Free Measurements of Biological Nanoparticles.....	19
<i>Lew Brown, Franklin Monzon, Jean-Luc Fraikin</i>	
Development, Validation and Application of Drug-Tolerant Assays for the Detection of Anti-Drug Antibodies Against Anti-PD-1 and Anti-CTLA-4 Monoclonal Antibodies Used in Combination Therapy in Non-Human Primates During Repeated Dose Toxicity Study	20
<i>Olesia Bulaeva, Evgeniia Gerasimovich, Tatiana Ostroukhova, Alexandr Grachev, Yakov Ustyugov</i>	
Locking the Latency Cage: Anti-LAP Antibodies to Target TGF-Beta in a Context Dependent Manner	21
<i>Randall Burton, Stavros Kopsiaftis, Patricia Rao, Jessie English, Barbara Fox</i>	
Designing a New Particle Technology and pH Gradient Mobile Phase Concentrates for Robust, High Resolution Charge Variant Analysis of mAbs	22
<i>Steven Calciano, Mingcheng Xu, Qi Wang, Susan C. Rzewuski, Hua Yang, Stephan Koza, Mike F. Morris, Justin McLaughlin, Stephen Shiner, Bei Niu, Matthew Lauber</i>	
High-Throughput In-Silico and In-Vitro Developability Analysis of Complex Biopharmaceuticals	23
<i>Alejandro Carpy, Alexander Knaupp, Manuela Machatti, Anton Jochner, Klaus Tandler, Sandra Neuner, Alexander Bujotzek, Hubert Kettenberger</i>	
Using Nanobodies to Determine Whether Deubiquitinases Are Therapeutic Targets	24
<i>Lin Hui Chang, Eric R. Strieter</i>	
High-Throughput Functional Screening of Antibody Libraries.....	25
<i>Bob Chen, Ryan Kelly, Frances Liu, Jennifer R. Cochran</i>	
Fixed Dose Selection Based on Population Pharmacokinetic/Pharmacodynamic Modeling	26
<i>Aleksandra Chertkova, Elena Marnopolskaya, Daria Zhuravleva, Pavel Yakovlev</i>	
A Novel Multiplex Platform for Measuring Low Affinity Protein Interactions	27
<i>Kalidip Choudhury, J.R. Lee, D Bechstein, C. Oi, A. Patel, R. Gaster, E. Ng, L. Gonzalez, S. Wang</i>	
Precision Synthesis of Variant Libraries Enables Comprehensive Interrogation of Single Site Variant Space.....	28
<i>Sonya Clark, Lucy Jia Xu, Helena Perazich, Shastyn Galaang, Weeney Chan</i>	
Overcoming Antibody Discovery Limitations by Deep Mining of Natural Immune Repertoires	29
<i>Kush Dalal, Kevin Heyries, Sherie Duncan, Kathleen Lisaingo, Daniel Da Costa, Oleh Petriv, Amanda Moreira, Mani Hamidi, Ester Falconer, Marta Szabat, Karine Hervé, Jens Ruschmann, Roza Bidshahri, Katherine Lam, Véronique Lecault, Carl L. Hansen</i>	

Selection of First-in-Human Study Dose for Antibodies and Antibody Constructs Using Quantitative Systems Pharmacology Modeling.....	31
<i>Oleg Demin Jr., Dmitry Shchelokov</i>	
T-Cell Receptor-Like Antibodies Directed Against Intracellular Tumor Targets for Immunotherapy of Solid Tumors	32
<i>Galit Denkberg, Ilan Beer, Yael Elbaz Teboul, Reut Segal-Erel, Lyora A. Cohen, Dotan Sela, Daulet Satpayev, Hui Shao, Yoram Reiter, Stewart E. Abbot</i>	
Capture and Display of Antibodies Secreted by Hybridoma Cells Enables Optical On-Cell Screening of Human IgG and IgA mAbs.....	33
<i>Scott K. Dessain, Rama Devudu Puligedda, Rashmi Sharma, Fetweh H. Al-Saleem, Diana Kouivaskaia, Arul Balaji Velu, Chandana Devi Kattala, George C. Prendergast, David R. Lynch, Konstantin Chumakov</i>	
Discovery of New Therapeutic Antibodies to Two Metabolically Relevant Targets - GPCR CB1 and Transporter GLUT4 - Using Virus-Like Particles	34
<i>Benjamin J. Doranz, Tabb Sullivan, Erin Rosenberg, Tom Charpentier, Nicholas Molino, Brad Screnci, Lewis J. Stafford, Chidananda Sulli, David F. Tucker, Ross Chambers, Joseph B. Rucker</i>	
Streamlining the Capture of Membrane Proteins into Peptidiscs	35
<i>Franck Duong, John Young, Harveer Duhpar, Zhiyu Zhao, Irvin Wason, Michael Carlson, James Saville</i>	
Harvesting CHO and HEK293 Cells with the Rapid Clear® Cap Provides 0.2µm Sterile Filtration in a Fraction of the Time Required by Traditional Clarification Methods.....	36
<i>Sam Ellis, Daniel Korostyshevsky, Charles Dillard</i>	
An Enterprise Software Solution for Efficient Analysis of Epitope Binning Assays	37
<i>Renee Emkey, Lope Florez, Juan Florez, Martin Ginkel, Leigh Foster, Stephan Heyse, Stephan Steigele</i>	
Exploring Protein Nanocluster Format to Improve Purification and Delivery of Acute Phase Protein M-SAA3	38
<i>Francesc Fabregas, Ricardo Balta, Laia Gifre-Renom, Anna Aris, Elena Garcia-Fruitos</i>	
Multiparametric Flow Cytometry Analysis of Checkpoint Inhibitors (PD-1 and PD-L1) in Dissociated Tumor and Normal Tissues	39
<i>Shawn P. Fahl, Sarah Luckie, Nathan Henson</i>	
HarvestMax 1000: A Single Step Sterile Filtration of CHO Cell Cultures Producing Therapeutic Proteins.....	40
<i>Peter Florez</i>	
Development of an Advanced CHO Cell Expression System for Increased Transient Protein Production	41
<i>Perrine Friedel, Mathieu Porte, Jonathan Havard, Géraldine Guérin-Peyrou, Patrick Erbacher</i>	
Potential Applications of a New Recombinant Protein Format: Self-Assembling Nanoclusters Produced in <i>Lactococcus lactis</i> for Protein Delivery and Protein Purification Purposes	42
<i>Elena Garcia-Fruitos, Laia Gifre-Renom, Olivia Cano-Garrido, Francesc Fabregas, Ramon Roca-Pinilla, Jose Vicente Carratala, Joaquin Seras-Franzoso, Antonino Nataello, Alejandro Sanchez-Chardi, Neus Ferrer- Miralles, Antonio Villaverde, Alex Bach, Maria Devant, Anna Aris</i>	

A High-Throughput Platform to Develop Highly Potent and Functional Antibodies Against G-Protein Coupled Receptors	44
<i>Pankaj Garg, Emily Sever, Qiang Liu, John Lee, Burcu Hasdemir, Tom Zhiye Yuan, Ana Lujan, Erik Kwan, Erica Keane, Emily Tuscano, Fumiko Axelrod, Ray Tabibiazar, Aaron Sato</i>	
High-Throughput, High-Precision Protein Quantitation with PerkinElmer's ProteinEXact™ Assay	45
<i>Rachel Gelineau, James White, Natalia Rodionova, Zhiyong Peng, Anubhav Tripathi, Brian Gerwe, Erik Miller</i>	
Generation of a Diverse VHH Phage Display Library from Pre-Immunized Llamas	46
<i>Hoa Giang, Lili Liu, Nicole Polewaczyk, Jasmine King, Jason Pratt, Sheryl Goodart, John Miao, Raphael Levy</i>	
Recombinant Protein Nanoclusters: Exploring Their Potential and Immunogenicity In Vivo	47
<i>Laia Gifre Renom, Estefania Ugarte-Berzal, Erik Martens, Lise Boon, Olivia Cano-Garrido, Neus Ferrer-Miralles, Antonio Villaverde, Ghislain Opdenakker, Elena Garcia-Fruitos, Anna Aris</i>	
Novel Agonist Anti-GITR Antibody (BCD-bg6) for Cancer Immunotherapy	49
<i>Aleksandr Gordeev, A. Doronin, S. Ageev, S. Evdokimov, A. Ishutinova, V. Tsympilov, Y. Chernykh, Y. Evdokimovskaya, A. Aleksandrov, V. Solovyev, A. Ulitin, R. Ivanov</i>	
Novel Variants of IL15-Superagonist Immunocytokines	50
<i>Mariia Grefenshtein, Andrey Ulitin, Valery Solovyev, Alexey Kononov, Iuliia Evdokimovskaia, Yana Smirnova, Sergei Ageev, Stanislav Evdokimov, Julia Putintceva, Dina Zaripova, Elena Kolosova, Iakov Ustiugov, Roman Ivanov</i>	
Antibody Validation and Antigen Discovery by Combining Protein and Peptide Microarrays	51
<i>Carsten Haber</i>	
Improving ERTs with CodeEvolver® Protein Engineering Technology to Improve Serum Stability, In Vivo Half Life and Reduced Immune Response	52
<i>William C. Hallows, Kristen Skvorak, Cynthia Zhu, Antoinette Sero, Rachel Botham, Nick Agard, Chinpung Chng, Nikki Dellas, Matt Miller, Jinsong Shen, Judy Viduya, Xiyun Zhang, Raphael Schiffmann, Gjalt Huisman, Hicham Alaoui</i>	
FlowCam® Nano Provides Counts, Sizes and Images of Nano-and Microparticles: Application to a Therapeutic Protein Pumping Study	53
<i>Dave Hamel, Cheng Her, Christian Sieracki, Kent Peterson, Chris Mills, John Carpenter</i>	
Engineering of Candidate Therapeutic Molecules Using Mammalian Surface Display	54
<i>Andrew Hammet, Sabine Rauth, Chao-Guang Chen, Shirley Taylor, Catherine Tarlinton, David Leong, Rodrigo Morales, Kirsten Edwards</i>	
Discovery of Anti-C5aR Antibodies for Cancer Immunotherapy	55
<i>Jack Han, Fei Peng, Xiaohui Shao, Yu Zhang, Teddy Yang, Qing Duan</i>	
Half-Life Extension Technology Using Semi-Synthetic Fc-Fusions	56
<i>Shigeo Hirasawa, Yoshiro Kitahara, Yoriko Okamatsu, Akira Nakayama, Satoko Ueno, Masumi Taki</i>	
Isolation of Cross Species Camel Single-Domain Antibodies Specific for Human and Mouse Mesothelin	57
<i>Jessica Hong, Nan Li, Hua Ren, Madeline Torres, Ira Pastan, Mitchell Ho</i>	

Extracellular Matrix-Binding Immunotherapies Show Enhanced Antitumor Efficacy and Reduced Adverse Events.....	58
<i>Jun Ishihara, Ako Ishihara, Kazuto Fukunaga, Lambert Potin, Peyman Hosseinchi, Melody Swartz</i>	
NEOscan: AI Deep Learning of MD Simulation Conformers for MHC Peptide Binding Affinity	59
<i>Jongsun Jung, Jonghui Hong</i>	
Maurice CE-SDS PLUS Performance Characterization: Enhanced Data Quality for Size-Based Protein Analysis.....	60
<i>Irina Kazakova, Hui Xu, Uyen Nguyen, Will McElroy, Chris Heger, Annegret Boge, Jessica Dermody</i>	
Applications for Hyperimmune, Autoimmune DiversimAb™ Mice in Antibody Discovery	61
<i>Ryan Kelly</i>	
Accelerated Discovery of Unique Anti-PD-L1 Antibodies from Spleen Versus Bone Marrow of Immunized Mice by Single Plasma B Cell Cloning on the Beacon® Platform	62
<i>Shireen Khan, Ye Jin, Dandan Lv, Lina Xu, Rui Wang, Shaoping Hu, Vincent Pai, Minha Park, Ravi Ramenani, Maryam Shansab, Po-Yuan Tung, Amanda Goodsell, Adrienne Higa</i>	
Selection of mAbs Targeting MERS-CoV Through a Human Synthetic Fab Phage Display Library Panning and Their Characterization	63
<i>Dae Young Kim, Yoonji Kim, Hansaem Lee, Keunwan Park, Jooyeon Lee</i>	
Engineering of Potent Interleukin-4 Receptor Alpha Antibodies	64
<i>Jung-Eun Kim, Keunok Jung, Yong-Sung Kim</i>	
Novel Transposase Tools for Cell-Line Development.....	65
<i>Justin Kittell, Ferenc Boldog, Jeremy Minshull, Mark Welch</i>	
Therapeutic Anti-Cancer Activity of Antibodies Targeting RON Receptor Tyrosine Kinase.....	66
<i>Xin Yu Koh, Xiao Hui Koh, Le-ann Hwang, Siti Aishah Binte Rahmat</i>	
Selection and Affinity Maturation of Cyclic Peptide Against CTLA4 with PUREfexRD	67
<i>Carsten Haber</i>	
Natural and Fully Human Antibodies for Therapy	68
<i>Jonas Kuegler</i>	
Novel, Improved Cell-Based Assays to Enable Immunotherapy Drug Development for Checkpoint Receptors.....	69
<i>Jane E. Lamerdin, Mimi Nguyen, Hyna Dotimas, Ai Shih, Alpana Prasad, Jennifer Lin-Jones</i>	
A Robust NGS-Based Method for the Isolation of Affinity Matured Fab Antibody Clones with Cross-Species Specificity	70
<i>Rose Lewis, Julie Silverman, Colby Souders, Stuart Nelson, Dina Wassaf, Kudzai Chikwamba, Joe Tilitky, Elizabeth Dreher, Greg Conley, Stephan Kontos</i>	
A New LC-MS Approach for Enhancing Subunit-Level Profiling of mAbs and ADCs.....	71
<i>Xiaoxiao Liu, Jennifer Nguyen, Jacquelynn Smith, Olga V. Friese, Jason C. Rouse, Daniel P. Walsh, Ximo Zhang, Nilini Ranbaduge, Matthew Lauber</i>	
Development of IgG Like Bispecific Antibodies by Computer Aided Design.....	72
<i>Yue Liu, Ashley Cai, Zhejun Jia, Brian Christie, Jiadong Shi, Min Chen, Qi Meng, Jianbo Dong, Yue Liu</i>	

Development of a New Type of Immunostimulants for Animal Production	73
<i>Adria Lopez Cano, M. Blanch, A. Bach, J.J. Pastor, G. Tedo, S. Morais, E. Garcia-Fruitos, A. Aris</i>	
Optimization of Therapeutic Discovery Strategies for Human Antibody Transgenic Animal Platforms	74
<i>Joshua Lowitz, Glen Lin, Jennifer Somera, Leonel Santibanez-Vargas, Catherine Vo, Edgar Rodriguez, Billy Nguyen, Michael Trang, John Nichols, John S. Kenney</i>	
Facilitating the Capture of Consistently Structured Experimental Data While Enabling Scientists to Continue Standard Experimental Data Recording Workflows	75
<i>Ryan Luce, Kevin Krouse, Susan Hert, Randal R. Ketchem, J. Alex Taylor, Russell E. Williams</i>	
Rapid Discovery of Synthetic Affinity Reagents Using Fiber Optic Array Scanning Technology (FAST).....	76
<i>Peter B. Madrid, Michal Avital-Shmilovici, Xiaohe Liu, Thomas Shaler, Claire Repellin, Janey Snider, Andrew Lowenthal, Lidia Sambucetti, Nathan Collins</i>	
An Automated Approach for Comprehensive Characterization and Quantification of Low-Abundance Sequence Variants in a Standard Monoclonal Antibody.....	77
<i>John McCarter, Joe Shambaugh</i>	
A Rational Affinity Maturation Platform.....	78
<i>Leona McGirr, Richard Buick, Darragh MacCann, Hugh Morgan, Natasha Campbell, Nicola Doran, Devon Crawley, Anthony O'Kane, Christopher Scott</i>	
Cancer-Specific Intracellular Delivery of Therapeutic Antibodies Against RAS.....	79
<i>Michael J. McGuire, Susan Li, Claire Gormley, Curtis Allred, Indu Venugopal, Kathlynn C. Brown</i>	
Increasing the Sensitivity of IgG Purity and Heterogeneity Assay on PA 800 Plus by Using Fluorescent Labels.....	80
<i>Quincy Mehta, Marcia R. Santos</i>	
Assessment of Antitumor T Cell Activity Using Heterogeneous Three- Dimensional Culture Assays.....	81
<i>Amer Najjar Glauco Souza</i>	
Reproducible, MoA-Reflecting Reporter-Based Bioassays to Enable Drug Development of Biosimilars and Biobetters	82
<i>Jeff Nelson, Richard Moravec, Dun Li, Jennifer Wilkinson, Frank Fan, Mei Cong</i>	
Tumor Microenvironment Monitoring: Isolation and Flow Cytometric Immunophenotyping of Exosomes from Human Plasma.....	83
<i>Thanh-Long M. Nguyen, Dominic E. Warrino, Joyce G. Slusser</i>	
Automated Plasmid Prep and Optimized Protein Separation Using PhyTip Columns.....	84
<i>Shadie Nimri, Jonathon Grambow, Carrie Huynh, Lee Hoang, Chris Suh, Doug Gjerde</i>	
A Case Study on Immunogenicity Assay Strategies for Endogenous Homologous Proteins	85
<i>Hongmei Niu, Theresa Goletz, Qiang Qu</i>	
Complete N- and O- Deglycosylation of Biopharmaceuticals	86
<i>Philip Onigman, Maria Nordgren, Stephan Björk, Helen Nyhlen, Fredrik Olsson</i>	

Use of Epitope Diversity to Elucidate Trends in Function Among Monoclonal Antibodies Raised Against the Immunogenic Marker B7H6	87
<i>Steven J. Orcutt, Thai Dinh, Stuart Emanuel, Jennifer Furman, Mark Richter, Gordon Powers, Sam Wu, Jennifer Nemeth-Seay</i>	
Lead Stage In Vitro Assessment of Immuno-Oncology Candidates	89
<i>Amin Osmani, Thibaut Janss, Juliette Lamy, Jana Schockaert, Severine Giltaire, Sofie Pattijn, Mayuko Oh, Chloe Ackaert</i>	
Efficient Selection of Single-Domain Antibodies from a Naive Synthetic Library Using Phage Display and Yeast Two-Hybrid Screening	91
<i>Brent Passer, Sandrine Moutel, Selma Djender, Alexis Arrial, Veronique Battaglia, Celine Reverdy, Aurelien Olichon, Franck Perez, Jean-Christophe Rain</i>	
Novel Crystallization Screening Method for Proteins and Protein-Complexes.....	92
<i>Belinda Pastrana, Adalberto Diaz Casas, Sherly Nieves, Selena Larkin</i>	
Detecting, Counting and Characterizing Sub-Visible Protein Aggregates with Holographic Video Microscopy	93
<i>Laura A. Philips, Annemarie Winters, Fook C. Cheong, David B. Ruffner, Jaroslaw M. Blusewicz, Priya Kasimbeg</i>	
Control Strategies for Fc Effector Function in Therapeutic Antibodies	95
<i>Diana Pippig, Alexander Knaupp, Christian Spick, Thomas Kraft, Florian Cymer, Tilman Schlothauer</i>	
Driving Robust and Reproducible ADCC and T Cell Redirection with Single Donor-Derived KILR CD16 Effector Cells	96
<i>Alpana Prasad, Lisa Blackwood, Laura McAleer, Hanako Daino-Laizure, Jane E. Lamerdin</i>	
Antibodies Targeting AXL for Cancer Therapy.....	97
<i>Khian Hong Pua, Hwang Le-Ann, David Philip Lane</i>	
T-ACPA Development Candidate Has Enhanced Therapeutic Properties and Inhibits NET Formation In Vitro and In Vivo	98
<i>Jos Raats, Renato Chirivi, Jos van Rosmalen, Maarten van der Linden, Jonas Hahn, Quinte Braster, Oliver Soehnlein, Markus Hoffmann, Helmuth van Es, Jos Raats</i>	
Structure-Guided Design Fine-Tunes Pharmacokinetics, Tolerability, and Anti-Tumor Profile of Multi-Specific Frizzled Antibodies	100
<i>Swetha Raman, Melissa Beilschmidt, Minh To, Kevin Lin, Francine Lui, Yazen Jmeian, Mark Ng, Minerva Fernandez, Ying Fu, Keith Mascal, Alejandro Duque, Xiaowei Wang, James Pan, Stephane Angers, Jason Moffat, Sachdev S. Sidhu, Jeanne Magram, Angus M. Sinclair, Johan Fransson, Jean-Philippe Julien</i>	
The Journey to "The" Antibody: Accessing a Versatile Toolbox	101
<i>Diana Ramos, Joana Assuncao, Antonio Barroso, Joana Queiroz, Debora Pinto, Fernando Martins, Andrew Kelly, Joao Santos, Daniela Teixeira, Maria Gonzalez-Pajuelo</i>	
Analytical Comparison of Infliximab and Related Biosimilars.....	102
<i>Brian Rivera, M. Christina Malinao, Morgan Kramer, Chad Eichman, Sean Orlowicz</i>	
Recombinant Antimicrobial Multidomain Polypeptides: Novel Biotechnological Tools Against Antibiotic Resistance.....	103
<i>Ramon Roca-Pinilla, Adria Lopez-Cano, Elena Garcia-Fruitos, Anna Aris</i>	

Side Effect-Free Protein Sample Preparation for Peptide Mapping	104
<i>Sergei Saveliev, Chris Hosfield, Mike Rosenblatt, Marjeta Urh</i>	
Increasing Throughput of INTip Affinity Purification for Larger Sample Volume.....	105
<i>Nikki Sitasuwan, Todd Mullis, Huey J. Nguyen, Casey Snodgrass, L. Andrew Lee</i>	
Selecting Novel and Developable Antibodies by Mammalian Display	106
<i>Peter Slavny, K. Parthiban, E. Masters, R. Perera, J. Syrjanen, M. Sattar, R. Leah, M. Dyson, J. McCafferty</i>	
Assessment of Statistical Significance of Minor Changes in HOS Using Circular Dichroism - A New Approach.....	107
<i>Darek Sliwa</i>	
Use of Mammalian Virus Display to Select Antibodies Specific for Complex Membrane Antigens	108
<i>Ernest S. Smith, Maria Scrivens, Leslie Balch, Wei Wang</i>	
High-Throughput Preparation of Released N-Glycans from Biotherapeutics Using Waters Technologies GlycoWorks RapiFluor-MS Automation Kit on the Hamilton Microlab STAR.....	109
<i>Casey Snodgrass, Danielle Cullen, Paula Orens, Steven Calciano</i>	
A Novel Engineered Fusion Protein Effectively Targets and Expands Disease Specific Anti-Tumor T-Cells	110
<i>Jonathan-Andrew N. Soriano, Joey Lee, Melissa M. Kemp, Dharma R. Thapa, Kelly Malone, Maria Hackett, Luke Witt, Jessica Ryabin, Aaron Zannini, Paige L. Ruthardt, Alyssa Nelson, Lauren D. Kraemer, Emily Christie, Xiang Pan, Ahmet S. Vakkasoglu, Samantha Povlich, Natasha Girgis, Saso Cemerski, Mark Haydock, Emily Spaulding, Steven N. Quayle, Mary C. Simcox, Simon Low, Rodolfo Chaparro, Anish Suri, John F. Ross, Ronald D. Seidel</i>	
Immunocapture-LC/MS Based Assay Platform to Evaluate the Target Engagement and Pharmacodynamics of Antibody-Drug Conjugates	111
<i>Hiroshi Sugimoto, Dhimankrishna Ghosh, Susan Chen, Michael D. Smith, Adnan O. Abu-Yousif, Mark G. Qian</i>	
Big Tuna, Uncle and Stunner Together Make Protein Formulation Selection a Breeze	112
<i>Robin Sweeney, Lisa Adamiak, Donna Chen, Joe Barco</i>	
Applications of Raman Spectroscopy for Biotherapeutics Characterization.....	113
<i>Michelle Tai, Bingchuan Wei, Nicholas Woon, Raphael Fish, Yan Chen</i>	
ExpiSf™ Expression System: A Chemically Defined Baculovirus-Based Expression System for Enhanced Protein and Virus Production in Sf9 Cells	114
<i>Kenneth Thompson, Maya Yovcheva, Sara Barnes, Mark Bundy, Katie Irvin, Melissa Cross, Natasha Lucki, Henry Chiou, Jonathan Zmuda</i>	
IL22R as Antibody Target in Atopic Dermatitis, Characterizing the Indication and Drug.....	115
<i>Birgitte Ursoe, Tine Skak, Malene Bertelsen, Britta Martel, Christophe Blanchetot</i>	
Efficient Use of Multi-Omic Biomarkers to Improve Clinical Trial Outcomes in Immuno-Oncology	117
<i>Marcell Veidner, Nadezda Masloboeva-Siwach, Lilia Abtroun, Marisa Fernandez, Kevin Teburi, Marc Flesch, Tamas Rujan</i>	
Which Antibody Source Leads to Success? A Comparison Study Between Immune, Synthetic, and Naive Libraries for Phage Display Antibody Discovery	118
<i>Emmanuelle Vigne, Klervi Desrumeaux, Melody Shahsavarian, Marie Gagnaire, Rival Pierrick, Pierre-Francois Berne, Qing Zhou-Liu, Nicolas Mouz</i>	

A High-Throughput, Multiplexed Antibody Internalization Assay	119
<i>Caroline Weldon, John O'Rourke</i>	
High-Resolution Epitope Mapping Reveals Antibody Mechanism of Action and Strengthens Intellectual Property	120
<i>Darek Sliwa</i>	
Development and Characterization of Potent Neutralizing Nanobody Against SFTSV Infection	121
<i>Xilin Wu, Waqas Nawaz, Xiaohua Ma, Yanlei Li, Zhiwei Wu</i>	
Twist Bioscience's Silicon-Based DNA Synthesis Platform Enables the Construction of Focused Variant Libraries with Unprecedented Precision	122
<i>Lucy Jia Xu, Dagney Cooke, Nicholas Hutchins, Tony Cox</i>	
Circumventing Challenges with Providing Actionable PK/PD/Efficacy Relationships with mAb Construct Origin and Design	123
<i>Yvonne M. Yannoni, Kalyan Chakravarthy, Padmanabhan Eangoor, Ghassan Fayad, Heping Lin, Renee Moore, Jennifer O'Neil, Hussam Hisham Shaheen, Shahriar Shane Taremi, Vincenzo Pucci, Tao Wang, Yingwen Xiao</i>	
Rapid Optimization and Humanization of an Anti-PD1 Antibody	124
<i>Tom Zhiye Yuan, Eric Kwan, Qiang Liu, Pankaj Garg, Fumiko Axelrod, John Lee, Burcu Hasdemir, Ana Lujan, Erica Keane, Emily Tuscano, Emily Sever, Ray Tabibiazar, Aaron Sato</i>	
Optimized Expression of Membrane Proteins in the Expi293 and ExpiCHO Expression Systems: New Tools for Difficult to Express Proteins	125
<i>Jonathan Zmuda, Wanhua Yan, Chao Yan Liu, Elodie Desuzinges Mandon, Sebastien Igonet, Anass Jawhari, Natasha Lucki, Henry Chiou</i>	
Modeling 10000 Antibodies in About an Hour: Leveraging the Power of the Amazon Cloud	126
<i>Steven Acoca, Essam Metwally, Paul Labute</i>	
Knock Out Protein Quantification and Quality in One Shot	127
<i>Lisa Adamiak, Robin Sweeney, Kirsten Jackson, Dina Finan</i>	
Site-Specific Conjugation of Metal-Chelating Polymers for Radioimmunotherapy Applications	128
<i>Brian J. Agnew, Penny Le, Valerie Facca, Elsa Lu, Mitchell A. Winnik, Raymond M. Reilly</i>	
Identification of VHH Against Bacterial Targets Using Synthetic VHH Yeast Display Library and Llama Immunization	130
<i>Alla Amcheslavsky, Matteo Stoppato, Conor McMahon, Jessica R. Pondish, Monir Ejemel, Zachary Schiller, K. Sullivan, Andrew C. Kruse, Mark Klempner, Lisa A. Cavacini, Yang Wang</i>	
A Novel Method for Constructing Diverse Variant Libraries with Precise Codon Ratio Control	131
<i>Kimberly Arnold, Yifan Li, Kevin Chen, Cedric Wu, Iris Feng, Irene Song, Heidi Huang</i>	
Advances in the Use of Sortases for Protein Labelling	132
<i>Zoe Arnott, Holly Morgan, Bruce Turnbull, Michael Webb</i>	
An Automated Immunoaffinity Purification and CE MS (IA-CE-MS) Workflow for Catabolite Identification and Quantification of Therapeutic Proteins.....	133
<i>Noor S. Bala, Mei Han, Dan A. Rock, Brooke M. Rock</i>	
Modulating Complement Dependent Cytotoxicity of a Bispecific Therapeutic IgM by FcMu Engineering	134
<i>Ramesh Baliga, Dean Ng, Paul Hinton, Keyu Li, Marigold Boe, Madeline Tran, Sachi Rahman, Bruce Keyt</i>	

sFIDA - Novel Technology for Counting and Sizing of Single Protein Aggregates.....	135
<i>Oliver Bannach, Oliver Bannach, Christian Zafiu, Andreas Kulawik, Dieter Willbold</i>	
Maytansine-Bearing ADCs Induce In Vitro Hallmarks of Immunogenic Cell Death Selectively in Antigen-Positive Target Cells.....	136
<i>Robyn M. Barfield, Maxine Bauzon, Penelope M. Drake, Brandon M. Cornali, Igor Rupniewski, David Rabuka</i>	
High Yield Transient Production of Antibody and Protein Products with the Quality Required for Use in Preclinical Program Development.....	137
<i>Sarah Barker, Lori Moffat, Lei Chen, Galina Khutoreskaya, David Martynowicz, Kaajal Nagar, Sheng Xue, Ghadeer Shubassi</i>	
Use of CODV-Format as a Platform to Address Diverse Biology.....	138
<i>Christian Beil, Joerg Birkenfeld, Thorsten Schmidt, Ercole Rao</i>	
Developing a PCSK9-Competitive Inhibitor as a Therapeutic Agent for Reducing Blood Cholesterol Levels.....	139
<i>Lital Ben-Naim, Lital Ben-Naim, Niv Papo, Isam Khalaila</i>	
Making Room for Two Paratopes on an Fv: Introducing the DutaFab Platform.....	140
<i>Davide Bertoldo, Sebastian Fenn, Marlon J. Hinner, Katrin Krause, Anastasia Meier, Claudia T. Mandler, Melanie Roeth, Janina Speck, Barbara Weiser, Roland Beckmann</i>	
Comparative Analysis of Immunoglobulin IGHD Genes in Vertebrates.....	141
<i>Vinnu Bhardwaj, Yana Safonova, Massimo Franceschetti, Ramesh Rao, Pavel Pevzner</i>	
Challenges and Potential Solutions for Development of Successful Potency Assay in mRNA Therapeutics	142
<i>Hari Bhaskaran, Jared Davis, Pad Chivukula</i>	
Assessing Adverse Immune Reactions to Biopharmaceuticals and Aggregated Monoclonal Antibodies in Both a Human In Vitro Skin Explant Assay and Clinical	143
<i>Louis A. Bibby, Ana Ribeiro, Asif Tulah, Shaheda Ahmed, Anne Dickinson</i>	
Engineering Multi-Specific Antibodies for Prophylactic Treatment of Allergies.....	145
<i>Dimitri Bieli, Natascha Wuillemin, Rahel Scheibling, Bettina Mathis, Tiziana Sonati, Chiara Arena, Renate Repke, Sandra Götschi, Alcide Barberis, Adriano Aguzzi</i>	
Screening Next Generation ADAPTIR™ Bispecific Proteins for Manufacturability and Function.....	146
<i>David L. Bienvenue, Mollie Daugherty, Brian Woodruff, Megan Aguilar, Kelsey Huntington, Franz Gruswitz, Peter Pavlik, Lynda Misher, Danielle Mitchell, Cathy McMahan, Gabriela Hoyos, Jane Gross</i>	
Statistical Design for Effector Function Engineering of Hexameric Fc Domains.....	147
<i>James Birtley</i>	
Achieving Unique Synergies in Antibody Expression when Combining GPEx® Cell Line Development Technology with the Beacon® Platform for Clonal Cell Line Selection	148
<i>Greg Bleck, Rachel Kravitz, Wendy Vrendenburgh, Victoria Chrostowski</i>	
Pharmacophore-Based Protein Surface Patch Searching and Its Application to In Silico Antibody Engineering	149
<i>Tanggis Bohnuud, Andrew Wollacott, Karthik Viswanathan</i>	
A Synthetic Cell-Mediated Immunotherapy for Treatment of Lung and Breast Cancer	150
<i>Kathlynn C. Brown, Indu Venugopal, Claire Gormley, Susan Li, Michael J. McGuire</i>	

Unlocking Biological Discovery at the Single Cell Level.....	151
<i>Ciara Buchanan, Paul Leonard, Paul Cahill</i>	
Addressing Large-Scale Therapeutic Virus Production Using High Quality Grade PEI-Based Transfection Reagents	152
<i>Brian Bulsak, Mathieu Porte, Alengo Nyamay'Antu, Perrine Friedel, Géraldine Guérin-Peyrou, Patrick Erbacher</i>	
Generating Potent and Selective Inhibitors of Kv1.3 Ion Channel by Fusing Venom Derived Mini Proteins into Peripheral CDR Loops of Antibodies.....	153
<i>Neil Butt, Aneesh Karratt-Vellatt, Damian Bell, Edward Masters, Sachin Surade, John McCafferty</i>	
Novel Antibody Discovery Through DNA Approaches	154
<i>Xiaohui Cai, TingTing Wu, Joseph Chen, Catherine Yang, Ping Yang</i>	
A Platform Approach to Manage Developability and Manufacturability Risks of Biologics Molecules	155
<i>Guido Cappuccilli, Christoph Freiburg, Carl Bruder, Christopher Smith, Karine Maillard, Hans Peter Fischer</i>	
Antibody-Based Targeted Detection of Potato Virus Y and Rhynchosporium Commune.....	156
<i>Arabelle Cassedy, Caroline Murphy, Anne Parle-McDermott, Richard O'Kennedy</i>	
High-Throughput Characterization of Residual Hydrogen Peroxide in Drug Product.....	157
<i>Maria Monica Castellanos, Harley Quinn, Nicole Payton, Jiang Qian, Adele Schmitt, Vanessa Jully</i>	
Development of a Novel Membrane-Protein Specific Mammalian Display System.....	158
<i>Ryan Cawood, Nathan Robertson, Nancy Lopez Anton, Shalom Gurjar, Richard Parker-Manuel, Tom Payne, Tim Jones</i>	
ImmTAC™: Engineering Soluble Bispecific TCRs, with High Specificity and Affinity, to Treat Cancer.....	159
<i>Jonathan Chamberlain, Keir Barnbrook, Vijaykumar Karuppiyah, Adam McCarthy, Elena Nomerotskaia, Vieri del Sorbo, Annelise Vuidepot, Bent Jakobsen</i>	
The Next Generation Transgenic Chicken for Bispecific Antibody Applications	161
<i>Kathryn H. Ching, Kimberley A. Berg, Yasmina N. Abdiche, Jacqueline A. Morales, Ellen J. Collarini, Darlene Pedersen, Marie-Cecile van de Lavoie, William D. Harriman, Philip A. Leighton</i>	
Development of a Novel Staphylococcal Enterotoxin B Vaccine Candidates Using Protein Structure Modeling	162
<i>Jun Young Choi, Na Young Kim, Sung Hyun Hong, Won Rak Son, Chi Ho Yu, Gyeong Haeng Hur, Sungyool Hong, Young Kee Shin</i>	
Deciphering Protein O-Glycosylation: Solid-Phase Chemoenzymatic Cleavage and Enrichment	163
<i>John F. Cipollo, Shuang Yang, Philip Onigman, Wells W. Wu, Jonathan Sjogren, Helen Nyhlen, Rong-Fong Shen</i>	
ADAPTING CDR-H3: Re-Engineering H3 Loops With Germline Derived Sequences	164
<i>Christopher R. Corbeil, Traian Sulea, Jason Baardsnes, Enrico O. Purisima</i>	
Rapid Single-Chain Based Engineering for the Creation of a Flexible Anti- HER2 x Anti-CD3ε Bispecific T-Cell Engager (BiTE)	165
<i>Aoife Crawley, Jenny Fitzgerald, Richard O'Kennedy</i>	

A Case Study: Addressing Assay Curve Shifts in a Bioassay for a Late Stage Therapeutic Antibody.....	166
<i>Tongyun Dang, Patrick Niven, Peter Gray</i>	
Structure-Guided Molecular Cloning for Improving Site-Directed Mutagenesis and Stability in Protein Design.....	167
<i>Steven J. Darnell, Matthew R. Larson, Constantin Tivis, Martin Riese, Matthew Keyser, Katie Maxfield, Frederick R. Blattner</i>	
A Novel CD19 x CD3 Bispecific Antibody that Promotes Tumor Cell Lysis with Minimal Cytokine Release	168
<i>Laura Davison, Brian Avanzino, Aarti Balasubramani, Andrew Boudreau, Ben Buelow, Roland Buelow, Starlynn C. Clarke, Kevin Dang, Shelley Force Aldred, Katherine E. Harris, Brett Jorgensen, YuPing Li, Kyle Lorentsen, Harbani Malik, Harish Medlari, Duy Pham, Kirthana Prabhakar, Udaya S. Rangaswamy, Preethi Sankaran, Ute Schellenberger, Harshad S. Ugamraj, Nathan D. Trinklein, Wim Van Schooten</i>	
C-Tag Affinity Tag, from Routine Protein Purification to Use in a cGMP Production Process	169
<i>Bruce Dawson, Pim Hermans</i>	
Novel ImmTAV™ Molecules for the Treatment of HBV.....	170
<i>Marcin Dembek, Zoë Wallace, Carole Perot, Richard Suckling, Anshuk Sarkar, Andrew Knox, Sarah Leonard, Ruth Martinez-Hague, Katrin Wiederhold, Bent Jakobsen</i>	
Assessing T Cell Receptor Engineered T Cells for Antigen Specificity and Alloreactivity	172
<i>Alessandra De Riva, Xiaoling Li, Michael Coccozza, Namir Hassan</i>	
Engineering Antibody Conjugation	173
<i>Susanna Elledge, Hai Tran, Jim Wells</i>	
Rapid Assembly of Synthetic DNA Libraries for Generating Antibody Diversity	174
<i>Jennifer Elliott, Kurt R. Klimpel, Steven Thomas</i>	
Microfluidic Diffusional Sizing (MDS) for Protein Characterization - Latest Results and Next Steps	175
<i>Jonathan Faherty, Maren Butz, Maya Wright, Luca Gross, Georg Meisl, Magdalena A. Czekalska, Sean Devenish</i>	
Fully Murine Knobs-into-Holes Bispecific as Surrogate Molecule for Drug Development Models.....	176
<i>Michael Fiebig, Catherine Bladen, Nicola Moore, Stephen Anderson, Ian Wilkinson</i>	
Bispecific Target Discovery by High Throughput Functional Screening of Hundreds of Combinations of Different Target Pairs	177
<i>Helene Finney</i>	
End-to-End Workflow Platform for Integrated Biopharmaceutical Development.....	178
<i>Amanda Fitzgerald, Martin Moravec, Christoph Freiburg, Joylon Terragni, Andrew Lynch, Hans Peter Fischer</i>	
Metabolomic-Based Biomarker Approaches to Understand Human Exposure to Potent Carcinogenic Fresh Water Toxins.....	179
<i>Jenny Fitzgerald, Richard O'Kennedy</i>	
Broadly Neutralizing Antibodies Against HCV Use a CDRH3 Motif to Recognize a Conserved Site in HCV E2 Glycoprotein.....	180
<i>Andrew Flyak, Stormy Ruiz, Michelle Colbert, Tiffany Luong, James E. Crowe Jr., Justin R. Bailey, Pamela J. Bjorkman</i>	

SMAB (Single-Domain Antibody Fused to Monoclonal Antibody) Bispecific Antibody: From Rational Design to Preclinical Development.....	181
<i>John Fong, Cuiying Shao, Liusong Yin, Timothy Xia, Li Chen, Lan Tang, Sasidhar Murikinati, Leon Song</i>	
Efficient In Vivo Tumor Clearance and Minimal Cytokine Release with a Novel T-Cell Engaging Bispecific Antibody Platform	182
<i>Shelley Force Aldred, Nathan D. Trinklein, Duy Pham, Ute Schellenberger, Ben Buelow, Andrew Boudreau, Priya Choudhry, Starlynn C. Clarke, Kevin Dang, Katherine E. Harris, Suhasini Iyer, Brett Jorgensen, Payal P. Pratap, Udaya S. Rangaswamy, Harshad S. Ugamraj, Omid Vafa, Arun P. Wiita, Wim van Schooten, Roland Buelow</i>	
Improving Cancer Screening with a Novel Protein Energetics Model and Microfluidics.....	183
<i>Zachary Fritz, Lawrence Williams, Rene Schloss, Anil Shrirao, Martin Yarmush</i>	
Releasing the Brakes: Quantitative Cell-Based Bioassays to Advance Individual and Combination Immune Checkpoint Immunotherapy	185
<i>Julia Gilden, Jamison Grailer, Pete Stecha, Denise Garvin, Jim Hartnett, Frank Fan, Mei Cong, Zhi-jie Jey Cheng</i>	
Value Proposition of Integrated ADC Manufacturing Processes – Use of Economic Modelling	186
<i>Jon S. Gingrich, Rob Noel</i>	
Bridging MOA-Based Reporter Bioassays with PBMC Based ADCC for Immunotherapy Drug Development	187
<i>Manuela Grassi, Pete Stecha, Denise Garvin, Jamison Grailer, Jim Hartnett, Aileen Paguio, Brock Binkowski, Frank Fan, Mei Cong, Zhi-Jie Jey Cheng</i>	
KN046: A Novel Bispecific Antibody that Preferentially Targets CTLA-4 on PD-L1 High Expressing Tumor Microenvironment.....	188
<i>Kangping Guo, Xiaoxiao Wang, Pilin Wang, Ting Chen, Yan Huang, Dong Yang, Yanrong Dong, Yuhao Jin, Ting Xu</i>	
Machine Learning for Predictive Antibody Design and Humanization.....	189
<i>Claes Gustafsson, Sridhar Govindarajan, Melvin Cesares, Jeremy Minshull</i>	
Engineering of a Bispecific Antibody Tuned for Tissue Selective Binding of a Ubiquitously Expressed Antigen.....	190
<i>Haralambos Hadjivassiliou, Dan Zhu, David Mikolon, Sharmistha Acharya, Jeff Johnson, Kyle Hughes, Mahan Abbasian, Jonathan Lloyd, Andy Beck, Afshin Mahmoudi, Wei Fang, Gustavo Fenalti, Philip Chamberlain, Jeonghoon Sun, Hari Hariharan</i>	
Utilizing Bioorthogonal Chemistry for Improving the Pharmacokinetic Properties and Inhibitory Activity of N-TIMP2.....	191
<i>Hezi Hayun, Hezi Hayun, Eyal Arbely, Niv Papo</i>	
A Novel, Bioluminescent Assay for the Selective Detection of Target Cell Killing in Mixed Cultures	192
<i>Chris Heid, Aileen Paguio, Christopher Eggers, Peter Stecha, Braeden Butler, Michael Beck, Zhi-Jie Jey Cheng, Mei Cong, Brock Binkowski, Frank Fan</i>	
HERA-CD40L: A Unique Hexavalent CD40 Agonist for Cancer Immunotherapy.....	193
<i>Karl Heinonen, Christian Merz, Jaromir Sykora, Viola Marschall, David M. Richards, Katharina Billian-Frey, Mauricio Redondo Mueller, Meinolf Thiemann, Julian P. Sefrin, Harald Fricke, Christian Gieffers, Oliver Hill</i>	

CRISPR-Based Engineering of CHO Cell Lines.....	195
<i>Joan Hilly Foster, Kelvin Lee, Nathaniel Hamaker, Rama Shivakumar, Krista Steger, James Brady</i>	
Screening the Membrane Proteome to Determine Antibody Specificity and Discover New Immuno- Oncology Targets.....	196
<i>Duncan Huston-Paterson, Jennifer M. Pfaff, Rachel H. Fong, Rona Wilf, Charles Azuelos, Tabb Sullivan, Benjamin J. Doranz</i>	
Development and Validation of Affimer-Based Adalimumab-TNF α Complex Specific Reagents.....	197
<i>Matt Johnson, Rob Ford, Alex Davidson</i>	
Rapid Purification and Characterization of Recombinant Proteins and Antibodies: Capture High- Capacity Membranes	198
<i>Gia Jokhadze, Christian Hoppmann, Michael T. Vierra, Boris Levitan, Mandy Li, Andrew A. Farmer</i>	
Overcoming Limitations of Conventional Tag Systems - Strep-Tactin XT Applications.....	200
<i>Dennis Karthaus, Uwe Carl, Lilia Batz, Stefanie Kramer, Friederike Mueller, Sandra Koenig, Thomas Schmidt</i>	
A Rapid Recombinant Murine IgG Productivity Screen Based on Prepacked Protein A Columns	201
<i>Chris Kemp, Jean Burgee, Kerrie Kenefick</i>	
Biophysical Characterization of the F(ab') ₂ and Fab Fragments Along with the Intact Molecule of a Therapeutic IgG ₁ by Sedimentation Velocity Analytical Ultracentrifugation and Size-Exclusion Chromatography Multi- Angle Light Scattering.....	202
<i>Brent Kennedy, Luke Deters, Devin Stickel</i>	
TrueRepertoire™: High-Fidelity NGS-Based Antibody Sequencing and Repertoire Analysis.....	203
<i>Okju Kim, Yushin Jung, Jinsung Noh, Ki Hyun Kim, Sangil Kim, Jaeseong Park, Sanghyub Lee, Jaejun Park, Euijin Kwon, Hyori Kim, Jung-Eun Kim, Junho Chung, Sunghoon Kwon, Taehoon Ryu</i>	
The Signal Peptide Effect on Antibody Production.....	204
<i>Sungsub Kim, Jin-Hyuk Lee, Seung-Jin Ma, Wan-Woo Park</i>	
Simplified Sample Preparation of Antibodies for Purity Determination by SEC-HPLC	205
<i>Daniel Korostyshevsky, Sam Ellis, Charles Dillard</i>	
A Platform Engineering Approach for the Design of Recycling Therapeutic Antibodies	206
<i>Andrew Kroetsch, Dhaval K. Shah, Sheldon Park</i>	
High-Sensitivity HDX-MS to Identify Modification-Induced Conformational Changes of Biopharmaceuticals	207
<i>Felix Kuhne, Felix Kuhne, Lea Bonnington, Sebastian Malik, Marco Thomann, Michael Mormann, Patrick Bulau</i>	
Challenges in an ADA Assay Design to Support Gene Therapy Programs	208
<i>Leslie Kuiper, Kristen Gaffney, Jessica St. Charles, Amy Smith</i>	
Unlocking the Power of the Immune Repertoire: Functional Annotation of Repertoire Antibody Sequence Data by Overlaying Functional Information from Single B Cell Screening	209
<i>Katherine Lam, Kathryn Westendorf, Georgia Mewis, Krithika Muthuraman, Daniel Da Costa, Sherie Duncan, Amanda Moreira, Mani Hamidi, Maia Smith, John Zhu, Stefanie Zentelis, Roza Bidshahri, Yuri Hwang, Jens Ruschmann, Ester Falconer, Carl L. Hansen</i>	

Watching Drug Stabilizers Misbehave: Real-Time Monitoring and Characterization of Trehalose Crystallization Using the ProteinMentor 2D IR Platform	210
<i>Selena Larkin, Sherly Nieves, Belinda Pastrana</i>	
Hitting the Gas: Quantitative Cell-Based Bioassays to Advance Immunotherapy Programs Targeting Co-Stimulatory Immune Checkpoint Receptors.....	211
<i>Tim Larson, Jun Wang, Michael Beck, Jamison Grailer, Jim Hartnett, Julia Gilden, Frank Fan, Mei Cong, Zhi-jie Jey Cheng</i>	
Investigation of Non-Specific Binding in Antibody-Polymer Conjugates Used for Theranostic Radioimmunoconjugates	212
<i>Penny Le, Shane Miersch, Yijie Lu, Matthew W. Forbes, Anthony Ku, Sachdev S. Sidhu, Raymond M. Reilly, Mitchell A. Winnik</i>	
Expanding Functionality of Automated Liquid Handling Systems by Incorporating INTip Chemistries for High Throughput Protein Purification	213
<i>L. Andrew Lee, P. Nikki Sitasuwan, Amanda Campbell, Todd Mullis</i>	
Cell-Based Screening to Identify a Lead Humanised Antibody-Drug Conjugate	214
<i>Siobhan Leonard, Laura Murch, Kathryn Armour, Cecilia Valvo, Rachel Forfar, Rachel Evans, Michael Osborn, Tobias Haas, Ruggero De Maria Marchiano, Preeti Bakrania</i>	
High-Throughput, Transfection-Grade Plasmid Purification Without Centrifugation Using Paramagnetic Particles.....	215
<i>Claire Leroy, Nans Bodet, Barry Kiley, Maryline Blemont, Frederic Bosco, Kevin Kershner, Trista Schagat</i>	
Alternatives to Protein A for Capturing of Fc-Containing Bispecific Antibodies	216
<i>YuPing Li, Brett Jorgensen, Harshad Ugamraj, Payal P. Pratap, Ute Schellenberger</i>	
Strategies for High-Titer Protein Expression Using the ExpiCHO and Expi293 Transient Expression Systems	217
<i>Chao Yan Liu, Jian Liu, Wanhua Yan, Kyle Williston, Katy Irvin, Henry Chou, Jonathan Zmuda</i>	
Engineering Modification Enzymes for Biologics and Nucleic Acid Applications with CodeEvolver® Protein Engineering Technologies	218
<i>Joyce Liu, Goutami Banerjee, Jie Yang, Xiyun Zhang, Melissa Mayo, Stephan Jenne, Xiang Yi, Jovana Nazor, James Riggins, Matt Miller, Chinping Chng, Jonathan Penfield, Scott Baskerville, Nikki Dellas, David Elgart, Sandy Gomes, Vesna Mitchell, Jonathan Vroom, Oscar Alvizo, Anke Krebber, Jim Lalonde, Gjalt Huisman</i>	
High Density Expression Platform, One Stop Solution for Recombinant Antibody Production from GenScript.....	219
<i>Bowu Luan, Ellie Lu, Brady Wu</i>	
Design, Generation, and Evaluation of TCR-, TCR Mimetic- and CARBased Therapeutics for Cancer Immunotherapy	220
<i>Andrew Lynch, Karine Maillard, Christopher Smith, Guido Cappuccilli, Hans Peter Fischer, Christoph Freiburg</i>	
Development of a Novel Chemical Site-Specific Antibody Drug Conjugate (ADC) Conjugation Platform-AJICAP™ Technology	221
<i>Yutaka Matsuda, Kei Yamada, Tomohiro Fujii, Takuya Seki, Yuri Ooba, Takahiro Narita, Akira Nakayama, Yoshiro Kitahara, Natsuki Shikida, Kazutaka Shimbo, Kunio Nakata, Michiya Kanzaki, Yuji Ito, Brian A. Mendelsohn, Tatsuya Okuzumi</i>	

Designing an Affinity Maturation Library for Trastuzumab.....	222
<i>James McClory, Richard Buick, Darragh MacCann, Leona McGirr, Chris Scott, Hugh Morgan, Nicola Doran, Devon Crawley, Anthony O'Kane, Jordan Beggs</i>	
CB307, a Novel T-Cell Costimulatory Humabody Therapeutic for PSMAPositive Tumours.....	223
<i>Brian McGuinness, JW Legg, B. Archer, S. Archer, P. Bland-Ward, V. Brucklacher, J. Craigen, E. Hames, J. Majithiya, L. Murch, P. Pisa, B. Revi, N. Royle, Y. Sanders, A. Sette, Y. Teng, L. Thompson, W. Wang, C. Wilson, C. Wyre, V. Zelenay, C. Rossant</i>	
Preclinical Safety and Efficacy of a Tumor-Directed 4-1BB x 5T4 ADAPTIR™ Bispecific Antibody.....	224
<i>Catherine J. McMahan, Anna Dahlman, Starrla Johnson, Michelle Nelson, Doreen Werchau, Anneli Nilsson, Lill Ljung, Gabriele Blahnik-Fagan, Robert Bader, Adnan Deronic, Peter Ellmark, Maria Askmyr, Sara Fritzell, Gabriela Hernandez-Hoyos</i>	
Intelligent Biophysical Screening and Characterization for Fragments and Biologics at Scale with the Bruker Sierra SPR-32	226
<i>Adam Miles, Sven Malik</i>	
Affimer Anti-Idiotypic Binders: Critical Reagents for Clinical Ligand Binding Assays.....	227
<i>Fran Mullen, Rob Ford, Alex Wignall, Alex Davidson, Helen Curd, James Nuttal, Amanda Nicholl</i>	
Consistent Anti-Idiotypic Antibody Discovery Enabled by Hyperimmune Mouse Technology	228
<i>Tracey Mullen</i>	
GMP Plasmid and Virus Production for CAR-T Cell Therapy.....	229
<i>Sasidhar Murikinati</i>	
Enhancing the Performance of Recombinant Antibodies Against Rhyncosporium Commune and Potato Virus Y Using Computational Analysis and In Vitro Techniques.....	230
<i>Caroline Murphy, Arabelle Cassedy, Richard O'Kennedy</i>	
Engineering Single-Chain Antigen-Binding Fragment Domains for Intracellular Targeting and Therapeutic Cellular Engineering.....	231
<i>Duy P. Nguyen, Yannick D. Muller, Zachary Hill, Alexander J. Martinko, Mengqi Zhong, Michelle R. Arkin, Qizhi Tang, James A. Wells</i>	
Synthetic mRNA Designs for the Enhancement of the Chaperone-Mediated Solubilization of Recombinant Proteins in Escherichia coli	232
<i>Thi Thuy Nguyen, Cho Heun Lee, Yee Jin Yun, Sun Chang Kim</i>	
Tumor Selective Cytotoxicity by TAA x CD3 Bispecifics Utilizing a 2:1 Mixed-Valency Format	233
<i>Alex Nisthal, Gregory L. Moore, Matthew J. Bernett, Yoon Kim, Sung-Hyung Lee, Rumana Rashid, Erik W. Pong, Duc-Hanh T. Nguyen, Jonathan Jacinto, Araz Eivazi, Juan E. Diaz, Seung Y. Chu, Umesh S. Muchhal, John R. Desjarlais</i>	
Development and Validation of a Sensitive Immunoassay for Monitoring Second Messenger 2'3'-cGAMP.....	234
<i>Liz Nolff, Daniel J. Tew, James Mobley, Tanya Maxey, Matthew D. Fountain</i>	
Utilising GS PiggyBac™ Transposon Technology to Enhance the Performance of the Lonza GS Gene Expression System® in Stable CHO Pool Construction.....	235
<i>Peter O'Callaghan, Alison Porter, Andy Racher, Robert Young</i>	
Stealth Targeted Nano Coatings for Oncolytic Viruses for Repeat Systemic Administration	236
<i>Inanc Ortac, Jeff Sturgis</i>	

Epitope, Paratope and HOS Comparability: Complete Analysis by High- Resolution HDX-MS.....	237
<i>Jason Jingxi Pan, Sara Zhang, Lisa Chang</i>	
The PD-L1 x 4-1BB Bispecific Antibody ABL503 Shows Potent Anti-Tumor Effect Through Tumor-Directed T Cell Activation.....	238
<i>Eun Young Park, Eunsil Sung, Hyejin Chung, Yangsoon Lee, Jiseon Yoo, Minji Park, Eunjung Kim, Yong-Gyu Son, Hyuju Choi, Jaeho Jung, Weon-Kyoo You, Sang Hoon Lee, Lei Fang, Wenqing Jiang</i>	
Development of Conformational Antibodies Targeting Glaucoma-Associated Myocilin	239
<i>Athena C. Patterson-Orazem, Ahlam Qerqez, Shannon E. Hill, Yemo Ku, Jennifer A. Maynard, Raquel L. Lieberman</i>	
Early Immunogenicity Risk Assessment: A Suite of Assays to Guide Lead Candidate Selection.....	240
<i>Sofie Pattijn, Jana Schockaert, Chloe Ackaert, Amin Osmani, Mayuko Oh</i>	
Stable Episomal Expression System in CHO Cells to Accelerate Non-GMP Production of Therapeutic Antibodies.....	241
<i>Lauri Peil, Mart Ustav Jr., Kadri Kangro, Margit Ool, Radi Tegova, Karl Mumm, Anne Kalling, Kerittu Murumets, Gaily Kivi, Kristiina Karro, Tiiu Männik, Andres Tover, Andres Männik, Urve Toots, Mart Ustav</i>	
Establishing a High-Throughput Protein Production Platform for Rapid Antigen Screening	242
<i>Dongjun Peng, Ankita Balsaraf, Jason Laliberte, Karen Matsuoka, Sumana Chandramouli, Matthew James Bottomley, Ying Huang</i>	
HORIZON - High Throughput Low Volume Subvisible Particle Analysis	243
<i>John Proctor, Colby Ashcroft, Brian DiPaolo, Gjergji Konica, Xiangning Li, Caitlin Wood, Jane Gosling, Stephen Voellinger, Rick Gordon, Bernardo Cordovez, Robert Hart</i>	
Antibody-Drug Conjugate Proteomic and Calorimetric Characterization Following Divergent Preparation Paths.....	244
<i>Colette Quinn, Shawn Owen, Keith Arlotta</i>	
Innovative Preclinical Assessment Tools for Safety and Efficacy of Protein and Peptide Therapeutics...Of Peptides and P-ANDAS.....	245
<i>Brian J. Roberts, Frances Terry, Lenny Moise, Christine Boyle, William Martin, Anne S. DeGroot</i>	
RUBY™ - A Novel Recombinant Universal Bispecific Antibody Format for Generation of Bsab with Outstanding Stability, Manufacturability and Shorter Development Timelines	246
<i>Anna Saell, Mattias Levin, Barnabas Nyesiga, Maria Martensson, Sara Fritzell, Karin Hagerbrand, Christina Furebring, Laura von Schantz</i>	
Novel Solutions for HTP Antibody Purification Using Magnetic Beads.....	247
<i>Nishant Saxena, Ruina He, Jinxin Zhu, Tao Bai, Hong Qian</i>	
Selection of Antibodies Specific for Simple and Complex Membrane Antigens Using Mammalian Virus Display	248
<i>Maria Scrivens, Leslie Balch, Wei Wang, Angelica Cornelison, Ernest S. Smith</i>	
Employing the MS-Based Multi-Attribute Method (MAM) for Automated Quality Monitoring of Biotherapeutics	249
<i>Joe Shambaugh, John McCarter, Per Rigler, Dominik Mertens, Albert Van Wyk, Peter Haberb</i>	
Single Cell Microfluidics System Enables Direct Functional Screening of Therapeutic Antibodies	250
<i>Yonglei Shang, Yonglei Shang, Vivian Wang, Aude Segaliny, Hamed Shadpour, G. George Wu</i>	

Optimization of Heparan Sulfate Expression and Purification in Batch Shake-Flask Studies	251
<i>Susan T. Sharfstein, Vijay Tejwani, Pujhitha Ramesh, Marina Danielle Infantado, Trent R. Gemmill, Bryan E. Thacker, Charles A. Glass</i>	
Measuring T-Cell Avidity and Enrichment Using Acoustic Force-Based Technology	252
<i>Trey Simpson, Trillian Gregg, Ernie Au, Andrea Candelli, Willem Peutz, Ton Schumacher, Wouter Scheper</i>	
Commercial Cell Line and Process Development - Biologics IND Application: CMC Platform by GenScript.....	253
<i>Leon Song</i>	
Quantifying the Intracellular Degradation Rate of Stimuli-Responsive Drug Carriers	254
<i>Michelle Sorkin, Joshua A. Walker, Sneha R. Kabaria, Nicole P. Torosian, Christopher A. Alabi</i>	
Overcoming Limitations of Current Antibody-Drug Conjugates (ADCs) by a Novel Linker Technology	255
<i>Philipp R. Spycher, Philipp R. Spycher, Julia C. Frei, Jöri E. Wehrmüller, Isabella Attinger-Toller, Dragan Grabulovski, Torsten Hechler, Michael Kulke, Andreas Pahl, Martin Behe, Roger Schibli</i>	
Over the BBB and into the Cell - Pursuing Intracellular Targets for Immunotherapy of Parkinson's Disease	256
<i>Sofia Stenler, Sahar Roshanbin, Canan Yilmaz Ugur, Jinar Rostami, Ximena Aguilar, Anna Erlandsson, Dag Sehlin, Stina Syvänen, Greta Hultqvist</i>	
Towards an Oral Immunoprophylaxis: The Effect of Formulation on Secretory IgA Stability	257
<i>Matteo Stoppato, Aaron Wallace, K. Sullivan, Melissa Gawron, Jessica Pondish, David Baxley, Lisa Cavacini, Yang Wang</i>	
Removable Nanolayer Coatings for Oncolytic Viruses for Improved Freeze/Thaw Stability and Shelf Life.....	258
<i>Jeff Sturgis, Inanc Ortac</i>	
Quantification and Modeling of Lysine Conjugation Susceptibilities in ADCs	259
<i>Traian Sulea, Christopher R. Corbeil, Enrico O. Purisima, Tammy-Lynn Tremblay, Jennifer J. Hill</i>	
Structure-Based Engineering of pH-Dependent Antibody Binding for Selective Targeting of Tumor Microenvironment	260
<i>Traian Sulea, Jason Baardsnes, Christopher R. Corbeil, Christophe Deprez, Yuneivy Cepero-Donates, Alma Robert, Marie Parat, Mélanie Duchesne, Maria L. Jaramillo, Enrico O. Purisima, John C. Zwaagstra</i>	
Implementation of Simple Protein Quality Control Guidelines to Improve Scientific Data Quality and Reproducibility	261
<i>Sabine Suppmann, Nick Berrow, Mario Lebendiker, Maria Garcia-Alai, Stefan Knauer, Blanca Lopez-Mendez, Andre Matagne, Annabel Parret, Kim Remans, Stephan Uebel, Bertrand Raynal</i>	
The P4EU (Protein Production and Purification Partnership in Europe) Network.....	262
<i>Sabine Suppmann, Peggy Stolt-Bergner, Mario Lebendiker, Nick Berrow</i>	

Fc Gamma RIIIA Affinity Chromatography, A Novel Analysis Method for the Quality of Therapeutic Antibody	263
<i>Toru Tanaka, Kosuke Araki, Yoshiharu Asaoka, Yosuke Terao, Seigo Ooe, Teruhiko Ide, Kazuaki Muranaka</i>	
Exploring the Ever-Evolving Bioanalytical Strategy for ADCs from Discovery to the Clinic.....	264
<i>Edit Tarcsa</i>	
High-Throughput Screening, Design, Production, and Evaluation of Bispecific Antibodies	265
<i>Joylon Terragni, Guido Cappuccilli, Karine Maillard, Christopher Smith, Hans Peter Fischer, Christoph Freiburg</i>	
More than α -Helix and β -Sheet: Expanding the Role of Circular Dichroism.....	266
<i>Martin Textor</i>	
Predicting Protein-Protein Binding Sites and Epitope Mapping	267
<i>Nels Thorsteinson, Alain Ajamian, John Gunn, Paul Labute</i>	
A High Throughput Approach to Construct Generation and Expression Screening for Recombinant Protein Production	268
<i>Shu Ti, Stephanie Shriver, Tia Arena, Bobby Brillantes, George Dutina, Peter Harms, Christine Kugel, Isabelle Lehoux, Zhong Rong Li, Lee Lior-Hoffmann, Michal Maciejewski, Lynn Martin, Kyle Mortara, Kristen Nailor, Idris Mustafa, Honorio Sampang, Kurt Schroeder, Lovejit Singh, Christine Tam, Alice Tsou, Trisha Dela Vega, Justin Win, Inna Zilberleyb, Edward Kraft, Yvonne Franke</i>	
Development of VHH Antibodies to Biomarkers of Hematological Malignancies for BITE and CAR-T Therapies	269
<i>Hiep Tran, Carla Campbell, Christine Prokopowitz, Rolf Swoboda, Ashka Pandya, Fouad Moussa, Singh Rajesh</i>	
Construction of a Molecular ON-Switch for Controlling CAR T Cells with an Orally Available Small Molecule.....	270
<i>Michael W. Traxlmayr, Charlotte U. Brey, Markus Dobersberger, Irene Schaffner, Georg Mlynek, Dominic Pühringer, Benjamin Salzer, Kristina Djinović-Carugo, Christian Obinger, Wolfgang Holter, Manfred Lehner</i>	
Tri-Mannosyl Antibody: A Novel Site-Specific and Dual Payload Glycoengineering Antibody Drug Conjugation Platform by Glycoengineering	271
<i>Shih-Chong Tsai, Meng-Sheng Lee, Ching-Yao Chen, Ting-Wei Sun, Huang Yu-Han Huang, Hsu Chuan-Lung, Yi-Jen Chen, Chung Shih-Hsien</i>	
Cytoplasmic Delivery of Inhibitory Antibodies.....	273
<i>Andrew Tsourkas, Hejia Henry Wang</i>	
Determining Immunogenicity of Anti-Viral Specific T Cells Using a Human In Vitro Skin Explant Model	275
<i>Asif S. Tulah, Marsela Qesari, Shaheda S. Ahmed, Anne M. Dickinson</i>	
Thiolation of Q295: A Simple Strategy for the Site-Specific Conjugation of Hydrophobic Payloads to Native Antibodies	277
<i>L. Nathan Tumey</i>	
Selection of the Right Cell-Based Potency Assays - Analysis of Proliferation by Dye-Dilution vs 3H-Thymidine Incorporation.....	278
<i>Annelies W. Turksma, Gijs van Schijndel, Iris Cleassen, Josine Van Beek, Anja ten Brinke</i>	

The Native Antibody Glycan as Attachment Site for Cytotoxic Payloads Contributes to the Superiority of GlycoConnect™ ADCs	279
<i>Remon Van Geel, Inge C.J. Hurkmans, Brian M.G. Janssen, Jord van Schaik, Jorge M.M. Verkade, Jorin Hoogenboom, Marloes A. Wijdeven, Sander S. van Berkel, Floris L. van Delft</i>	
HybriFree: A Robust and Rapid Method for the Development of Therapeutic Antibodies from Rabbit and Chicken	280
<i>Birgit Viira, Gaily Kivi, Raini Pert, Erkki Juronen, Tiiu Männik, Mart Ustav, Andres Männik</i>	
Effect of Antibody Isotype, Multimerization, and Variable Region Evaluated Using an In Vitro Gastrointestinal Stability Assay	281
<i>Aaron Wallace, Matthew Schneider, Serena Giuntini, Matteo Stoppato, Jessica Pondish, K. Sullivan, Melissa Gawron, Mark Klempner, Yang Wang, Lisa Cavacini</i>	
Post-Hoc Assessment of the Immunogenicity of Three Antibodies Reveals Distinct Immune Stimulatory Mechanisms	282
<i>Robin E. Walsh, Christopher A. Moreland, Jill Willency, Megan Lannan, Yi Wen, Michael D. Knierman, Angela Nix, Nada S. Alakhras, Ling Liu, Wei Zeng, Robert Siegel, Guilherme V. Rocha, Victor Obungu, Andrea Ferrante, Jirong Lu, Laurent P. Malherbe</i>	
WHAT A CELL WANTS, WHAT A CELL NEEDS - Optimizing Protein Expression Using Xell's Culture Media and Comprehensive Spent Media Analysis Platform	283
<i>Frederik Walter, Tim Steffens, Anica Schmidt, Christoph Heinrich</i>	
Microfluidic Modulation Spectroscopy Analysis of a Monoclonal Antibody in Two Different Buffers	284
<i>Libo Wang, Ioannis A. Papayannopoulos, Shannon Renn-Bingham, Jeffrey Zonderman</i>	
Strategies for Improved Protein Expression, Production Timelines and Laboratory Productivity Using CHO Cell Transient Expression	285
<i>Weili Wang, James Brady, Rama Shivakumar, Krista Steger</i>	
Generation of a Modular Landing Pad Cell Line for T Cell Receptor Exchange and Screening	286
<i>Stacey Ward, Ethan Patterson, Jason Gustin</i>	
Functional and Biophysical Characterization of a Novel, Monovalent Tri- Specific Antibody-Based Molecule that Simultaneously Modulates PD-L1 and 4-1BB and Exhibits Potent Anti-Tumoral Activity In Vivo	287
<i>Stefan Warmuth, Christopher Weinert, Tea Gunde, Matthias Brock, Alexandre Simonin, Christian Hess, Eva Oswald, Julia Tietz, Dania Diem, Julia Zeberer, Simone Muntwiler, Belinda Wickihalder, Sebastian Meyer, Timothy Egan, David Urech</i>	
TrypCo® Technology: A Versatile Enzymatic Tool for Site-Specific Generation of ADCs	289
<i>Rene Wartner, Marcus Boehme, Andreas Simon, Christoph Meyer, Felix Dittrich, Sandra Liebscher, Frank Bordusa</i>	
Implementation of a Novel Western-Based Approach for the Identification of Anti-Drug Antibody Responses Against Camelid VHH Biologics (Nanobodies) by Capillary Electrophoresis (WESADA)	290
<i>Derek Wiswell, Divas Neupane, Minchao Chen, Sophia Esther Elie, Edward P. Bowman, Douglas Linn, Vaishnavi Ganti, Huiping Ma, Anandi Sawant, Alissa Chackerian, Shuli Zhang, Enrique Escandon</i>	

Functional Screening of Immunotherapeutics Using Innovative AmberFlow Single Cell Platform Technology	291
<i>George Wu, Aude Segaliny, Guideng Li, Lingshun Kong, Hamed Shadpour, David Baltimore, Weian Zhao</i>	
Rapid Automated Scaffolding for Antibody Characteristics Improvement	292
<i>Pavel Yakovlev, Bogdan Neterebskii, Vladimir Morozov, Sofia Kochkova, Maxim Koltsov</i>	
Raising the Capacity of Adeno-Associated Virus Capsid by the Capsomere Point Mutations.....	293
<i>Pavel Yakovlev, Anna Strelkova, Pavel Gershovich, Aleksandr Karabelskii, Aleksandr Prokofiev, Marina Shalievskaaia, Sergey Legotsky</i>	
Case Study for Developability Assessment of Three Therapeutic Antibodies.....	294
<i>Zhiping Yao, Tao Bi, Paul Phelan, David Gae, Yesenia Aguilar, Anjali Patel, Wen-Rong Jiang, Henry Yong, Tao He</i>	
T Cell Engaging Bispecific Antibodies for Cancer Immunotherapy	295
<i>Aerin Yoon</i>	
Immatics' Discovery and Validation Platform for Tumor-Specific T Cell Receptors	296
<i>Sara Yousef, Leonie Alten, Sebastian Bunk, Carsten Reinhardt, Dominik Maurer, Claudia Wagner</i>	
Computational Protein Expression Environments by mRNA Translation Simulation	298
<i>Barbara Zanandreiz de Siqueira Mattos, Barbara Zanandreiz de Siqueira Mattos, Anton Semenchenko</i>	
Automated Workflow for Identifying Neoantigens for Personalized Cancer Vaccines by Personalized De Novo Peptide Sequencing.....	299
<i>Wen Zhang, Rui Qiao, Hieu Tran, Lei Xin, Xin Chen, Zac Anderson, Baozhen (Paul) Shan, Ming Li</i>	
Functional TCR-T Cell Screening Using Single-Cell Droplet Microfluidics.....	301
<i>Weian Zhao, Aude I. Segaliny, Guideng Li, Lingshun Kong, Chih Chun Yu, Ci Ren, Jack Chong, Xiaoming Chen, Qiwei Fu, David Baltimore, Gukai Wu</i>	

Author Index