

Protein Engineering Symposium

Friday, October 2, 2015 • South San Francisco Conference Center

Schedule

MORNING

- 8:30 AM** Breakfast and Registration
- 8:55 AM** **Welcome Remarks:** Mark Schmeizl, LakePharma
- 9:00 AM – 9:35 AM** **Aaron Sato, Ph.D.** VP of Research, Sutro Biopharma
“The world of antibody discovery & Sutro Biopharma in context”
- 9:35 AM – 10:10 AM** **Brian Zabel, Ph.D.** Principal Investigator, PAVIR
“Antibody-based immunotherapy targeting chemokine receptor CXCR7 in cancer”
- 10:10 AM – 10:40 AM** Morning Break in Exhibition Area
- 10:40 AM – 11:15 AM** **Jacob Glanville, Ph.D.** CSO, Distributed Bio
“Systems analysis and computational engineering of the antibody repertoire from any species”
- 11:15 AM – 11:50 PM** **Nathan Trinklein, Ph.D.** Vice President, OMT Therapeutics
“Antibody discovery in novel transgenic rodents using antibody repertoire sequencing and high-throughput recombinant expression”
- 11:50 PM – 1:30 PM** LUNCH

Breakout Mini Sessions 12:45 PM – 1:15 PM

Dye-free & label-free thermal stability buffer screening of therapeutic antibodies - NanoTemper Technologies
 New products and applications using bio-layer interferometry for analysis of molecular interactions - Pall/ Forte Bio
 Sequencing functional antibody repertoire and thereafter - Panel discussion hosted by Hua Tu
 Introducing one-step selectivity in the purification of biological products – Thermo Fisher Scientific

AFTERNOON

- 1:30 PM – 2:05 PM** **Yan Wu, Ph.D.** Associate Director and Principal Scientist, Antibody Engineering, Genentech
“Therapeutic antibody discovery using multiple tools”
- 2:05 PM – 2:40 PM** **Boyan Zhang, Ph.D.** CSO, Beijing Mabworks
“Mass spec application in antibody drug development”
- 2:40 PM – 3:10 PM** Poster Session and Afternoon Break in Exhibition Area
- 3:10 PM – 3:45 PM** **Rathin C. Das, Ph.D.** CEO, Synergys Biotherapeutics
“Development of a novel targeted antibody fusion protein as a new generation cancer therapeutic”
- 3:45 PM – 4:20 PM** **Hua Tu, Ph.D.** CEO, LakePharma
“Launching integrated solutions for custom applications”
- 4:30 PM – 6:00 PM** Networking and Happy Hour

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Breakout Sessions

12:45 PM – 1:15 PM

Dye-free & label-free thermal stability buffer screening of therapeutic antibodies

NanoTemper Technologies

NanoTemper Technologies will present and discuss nanoDSF, advanced Differential Scanning Fluorimetry technology. nanoDSF detects smallest changes in the fluorescence of tryptophan and tyrosine present in virtually all proteins. The fluorescence of tryptophans and tyrosine in a protein is strongly dependent on close surroundings. By following changes in fluorescence, chemical and thermal stability can be assessed in a truly label-free fashion. The dual-UV technology by NanoTemper allows for rapid fluorescence detection, providing an unmatched scanning speed and data point density. This yields ultra-high resolution unfolding curves which allow for detection of even minute unfolding signals. Furthermore, since no secondary reporter fluorophores are required as in conventional DSF, protein solutions can be analyzed independent of buffer compositions, and over a concentration range of 200 mg/ml down to 5 µg/ml. This allows for the analysis of detergent-solubilized membrane proteins, as well as for highly concentrated antibody formulations.

New products and applications using bio-layer interferometry for analysis of molecular interactions

Pall/ Forte Bio

This session, hosted by Pall ForteBio, will provide a general overview of Bio-Layer Interferometry (BLI) for analysis of molecular interactions, as well as new instrumentation and biosensor products available from Pall ForteBio. Real-time, label-free analysis on the Octet platform provides rapid, sensitive and accurate measurement of kinetics, affinity and activity of biomolecular complex formation. Applications to be discussed will highlight the versatility of the Octet platform in various stages of drug development, including product release and stability testing, glycan analysis, Fc-receptor interactions, and downstream contaminant testing.

Sequencing functional antibody repertoire and thereafter

Panel discussion

This informal discussion panel, hosted by Hua Tu, will discuss various approaches, considerations and developments in sequencing antibody repertoires. Participating in the panel will be speakers Jacob Glanville and Nathan Trinklein, as well as Daniel Emerling of Atreca, and Chun-Nan Chen of Single Cell Technologies. The development of high-throughput DNA sequencing technologies has led to new methods of understanding protective and pathogenic immune responses, and advances in large-scale characterization of functional antibody repertoires and recombinant expression have enabled discovery and development of therapeutics for autoimmune diseases, vaccination, infection and cancer.

Introducing one-step selectivity in the purification of biological products

Thermo Fisher Scientific

This session will review affinity chromatography, one of the most effective methods for purifying protein therapeutics. The CaptureSelect™ ligand technology addresses protein purification challenges and provides a platform approach by introducing a highly selective capture step for primary recovery purification. Affinity resins have been developed specific for domains of immunoglobulins as well as for biotherapeutic molecules, biosimilars and viruses. These solutions offer unprecedented specificity to the target protein ensuring mild elution conditions for sensitive proteins at any scale and independent from the feedstock.

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Speaker Biographies

Aaron K. Sato, Ph.D.

Vice President of Research, Sutro Biopharma

Dr. Sato has more than 10 years of industrial research experience in antibody, protein and peptide engineering. At Sutro, Aaron is Vice President of Research and leads the team in the use of their bacterial extract system to produce high value protein therapeutics, such as ADC, bispecifics, and naked antibodies. Prior to joining Sutro, he was senior director of antibody engineering at OncoMed Pharmaceuticals, where his team discovered several antibodies for its clinical pipeline. Before this, he held director positions at Dyax Corp., where he oversaw multiple external collaborations with major pharmaceutical companies. Dr. Sato holds many patents and is the author of numerous peer-reviewed publications. He received a doctorate in chemistry from Massachusetts Institute of Technology and a bachelor's degree in chemistry from the University of Puget Sound.

Brian Zabel, Ph.D.

Principal Investigator, PAVIR

Dr. Zabel is a Senior Research Scientist and Principal Investigator at the Palo Alto Veterans Institute for Research. Dr. Zabel received B.S. degrees in Biology and Mathematics from the Massachusetts Institute of Technology in 1997 and a Ph.D. in Immunology from Stanford University in 2004. Dr. Zabel has over fifteen years of experience in the field of chemokine receptor biology, including recent work in the field of cancer immunobiology. His laboratory, which is funded by the National Institutes of Health, Department of Defense, Pulmonary Fibrosis Foundation, and Industry sponsors, identified a pathogenic role for chemerin receptor CMKLR1 in demyelinating disease, and discovered a new small molecule drug that can prevent clinical signs of experimental autoimmune CNS inflammation in mice. Current work in his lab focuses on developing and testing antibodies against CXCR7, a chemokine receptor that is selectively expressed by cancer cells and tumor-associated blood vessels.

Jacob Glanville, Ph.D.

CSO, Distributed Bio

Dr. Jacob Glanville received his undergraduate in Genetics, Genomics and Development research at UC Berkeley, and Ph.D. in Computational and Systems Immunology at Stanford University School of Medicine. He is currently the Chief Science Officer and Co-founder of Distributed Bio, where he developed the core algorithms. Within the first year of founding, the company has expanded and gained a wide variety of notable clients and collaborators. He has published multiple defining manuscripts and patents to combine next generation sequencing, protein engineering, immunology, and algorithm development to interrogate antibody repertoires and optimize their responses towards therapeutic applications.

Nathan Trinklein, Ph.D.

Vice President, OMT Therapeutics

Dr. Nathan Trinklein holds over 12 years of experience and publications in the field of functional genomics. He received his Ph.D. at Stanford University, managed the Stanford ENCODE Project, and from there co-founded SwitchGear Genomics in 2005 (now ActiveMotif) where he served as Managing Director of Panoply Bio, a division of ActiveMotif. At OMT Therapeutics, he manages the team developing new antibody and nanobody discovery approaches using next-gen sequencing, bioinformatics, and novel fully human transgenic rats.

Speaker Biographies Cont.

Yan Wu, Ph.D.

Associate Director and Principal Scientist, Antibody Engineering, Genentech

Dr. Yan Wu has 20 years of industrial experience, and is co-inventor of 12 human or humanized antibodies that moved to clinical development including anti-PDL1. Yan started at Genentech as a postdoctoral fellow at the Molecular Oncology department and currently is head of Antibody Discovery Group at Antibody Engineering. The Antibody Discovery Group works on Genentech's large molecule pipeline, including therapeutics and reagents for all disease areas, by utilizing multiple discovery tools in house and also working closely with multiple CROs.

Boyan Zhang, Ph.D.

CSO, Beijing Mabworks

Dr. Boyan Zhang received his Ph.D. in Bioinorganic Chemistry from Nanjing University and postdoctoral work at Colorado State University and University of Albera. He rose from Scientist to Senior Scientist and Group leader at Genentech from 2003 to 2013. He now served as the CSO and VP of Beijing Mabworks, where they specialize in antibody drug development and industrialization. His work specifically focuses on developing novel linker-drug chemistry and antibody based therapeutics.

Rathin C. Das, Ph.D.

CEO, Synergys Biotherapeutics

Dr. Rathin Das is the Founding President and CEO of Synergys Biotherapeutics, Inc., an antibody therapeutics company based in Walnut Creek, CA. Before founding Synergys in 2009, he worked for Affitech AS of Oslo, Norway, an antibody therapeutics company, for 10 years. He served as the Senior Vice President of Corporate Development and Chief Business Officer as well as President of its US operation, Affitech USA, Inc. He holds more than 30 years of experience in big pharma and biotech, including 15 years at Bayer Corporation in the US and Europe, and has published numerous articles in both peer-reviewed and trade journals. He holds both a Ph.D. in Bioorganic Chemistry and an MBA, and has several years of experience in postdoctoral experience in cell and molecular biology at the University of Iowa, Iowa City, and the Cancer Research Center at MIT. Dr. Das also founded the Indiana Section of the Society of Industrial Microbiology, USA in 1986.

Hua Tu, Ph.D.

CEO, LakePharma

Dr. Hua Tu is the Chairman and CEO of LakePharma, the Protein Engineering CRO based in the San Francisco Bay Area. He received his academic training at State University of New York at Stony Brook and Cold Spring Harbor Laboratory. After starting his biotech career as a postdoctoral fellow at Tularik, he continued to work on drug development at Tularik and Amgen. His ongoing aspiration is to bring efficiency to the life science industry.

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Poster Session

2:40 PM – 3:10 PM

Novel Miniprep System for Rapid Purification of Recombinant Proteins and Antibodies on High Capacity Membranes

Sayantan Mitra, Mike Vierra, Boris Levitan, Gia Jokhadze, and Andrew Farmer

Clontech Laboratories, Inc.

High-Throughput Screening of Membrane Transport Proteins in Synthetic Lipid Vesicles

Maen F. Sarhan¹, Philip A. Romero², Adam R. Abate¹

¹Department of Bioengineering and Therapeutic Sciences, UCSF

²Department of Chemical and Biomolecular Engineering, UCLA

Bridging the Gap of Screening and Scale up in Insect, CHO, Hybridoma, HEK293 and Cell Lines: Single Use Optimum Growth Flasks 125mL-5L Flasks with Transfer Caps, and Ports

Sam Ellis

Thomson Instrument Company

Engineering Bacterial Microcompartment Shells: Assembly, Permeability, and Targeting

Fei Cai^{1,2}, Markus Sutter^{2,4}, and Cheryl A. Kerfeld^{*1,2,3,4}

¹Department of Plant and Microbial Biology, University of California, Berkeley

²Physical Biosciences Division, Lawrence Berkeley National Laboratory

³Synthetic Biology Institute, University of California, Berkeley

⁴MSU-DOE Plant Research Laboratory, Michigan State University

Introducing a New BLI Instrument Focused on Throughput and Flexibility: The Octet HTX System

Amrita Yadav, Theresa Harper, Vishal Kamat¹, Danfeng Yao, Angel Angeles, Huddee Ho, Simon Huang, Vasilij Popov, Andrey Klishin, Kevin Courtoy, Jane Chen, Carlos Funes, Spencer Borg, Bruce Ikin, Wen Tian, Lian-She Zhao, Weilei Ma, Sriram Kumaraswamy, Rashi Takkar, Tony Bautista, Bob Collier, Tim Barnabei, Dominic Andrada, Robert Wicke, and Krista Witte

ForteBio Inc., A Division of Pall Corporation

¹Regeneron Pharmaceuticals, Inc.

Analysis of an Antibody Drug Conjugate Model with Ultra-High Resolution Quadrupole Time-of-Flight Mass Spectrometry

Elsa Wagner-Rousset¹, Wolfgang Jabs², Marie-Claire Janin-Bussat¹, Daniel Ayoub¹, Anja Wiechmann², Ralf Hartmer², Guillaume Tremintin³, Alain Beck¹

¹Centre d'Immunologie Pierre Fabre, St Julien-en-Genevois, France

²Bruker, Bremen, Germany

³Bruker, Fremont, CA

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Poster Session Cont.

2:40 PM – 3:10 PM

A Naturally Monomeric Infrared Fluorescent Protein for Protein Labeling *In Vivo*

Dan Yu

Pharmaceutical Chemistry Department, University of California, San Francisco

Reporter Bioassays Facilitate the Development of Therapeutic Antibodies in Immunotherapy Programs

Mei Cong, Zhi-jie Jey Cheng, Jamison Grailer, Pete Stecha, Jun Wang, Jim Hartnett, and Frank Fan

Promega Corporation

Development of Recombinant Antibodies Against Recombinant EPO Using Phage Display

Lara Cobler¹, José A Pascual², Peter Kristensen³

¹HDFCCC, University of California, San Francisco

²Institut Hospital del Mar d'Investigacions Mèdiques, Barcelona

³Department of Engineering, Aarhus, Denmark

Generation of Fut8 Deficient CHO-DG44 Cell Line for the Expression of Afucosylated Protein Products

Aragen Bioscience, Inc.

Transposagen Biopharmaceuticals, Inc.

Building an Efficient Platform for Plasmid DNA Purification and Formulation

LakePharma, Inc.

Proteomic Sequencing and Resurrection of a Monoclonal Antibody

Natalie Castellana¹, Kexin Huang², Jingxing Li², and Hua Tu²

¹Digital Proteomics LLC

²LakePharma, Inc.

Massive and High Content Antibody Screening – One Cell at a Time

Allison Schulkins, Joy Tang, Jim Bowlby, Rich Jorgensen, Dexter Girton, Karen Mao, Karen Shannon, Chun-Nan Chen

Single Cell Technology, Inc.

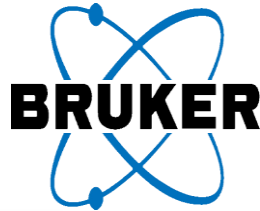
IgG Fc Receptor Function – New SPR Evaluation Facilitates Comparability Assessment

Asa Prostell¹, Nimesh Bhaskran¹, Jerrard Hayes², Pauline Rudd², Robert Karlsson¹

¹GE Healthcare Bio-Sciences

²National Institute for Bioprocessing Research & Training, Dublin

Exhibitors



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