

17th Symposium on the Practical Applications of Mass Spectrometry in the Biotechnology Industry (Mass Spec 2020)

Symposium Co-chairs:

Jason Rouse, *Pfizer, Inc.*

John Valliere-Douglass, *Seattle Genetics, Inc.*

September 14-17, 2020

Organized by



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Acknowledgements

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John Valliere-Douglass, *Seattle Genetics, Inc.*

Scientific Organizing Committee:

Chris Chumsae, *Bristol-Myers Squibb Company*

Jonathan (JJ) Josephs, *Sanofi*

Ingo Lindner, *Roche Diagnostics GmbH*

Anders Lund, *Synlogic*

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Mass Spec 2020

Scientific Program Summary

Monday, September 14, 2020

07:30 – 08:00 **Sign-on, Virtual Coffee, Visit Exhibitor Showcase**

08:00 – 08:15 **Welcome and Introduction – Day 1**
John Valliere-Douglass, *Seattle Genetics, Inc., Bothell, WA USA*

Keynote Session 1

Session Chairs: Chris Chumsae, *Bristol-Myers Squibb Company, Devens, MA USA* and Jason Rouse, *Pfizer, Inc., Andover, MA USA*

08:15 – 09:15 **TBD**
Cathy Costello, *Boston University Medical School, Boston, MA USA*

09:15 – 09:45 **Technical Seminar**

Sponsored by Thermo Fisher Scientific

Session I – Molecular Design, Developability and Biotransformation

Session Chairs: Jonathan (JJ) Josephs, *Sanofi, Waltham, MA USA* and Douglas Richardson, *Merck & Co., Inc., Kenilworth, NJ USA*

09:45 – 09:50 **Introduction**

09:50 – 10:20 **Structure, Heterogeneity and Developability Assessment of Therapeutic Antibodies**
Alain Beck, *Pierre Fabre Laboratories, Saint-Julien en Genevois, France*

10:20 – 10:50 **Direct Quantitation of Therapeutic Antibodies for Pharmacokinetic Studies using Immuno-purification and Intact Mass Analysis**
Kevin Bateman, *Merck & Company, Inc., Kenilworth, NJ USA*

10:50 – 11:05 **Virtual Networking**

Session II – Product Characterization and Comparability

Session Chairs: Yelena Lyubarskaya, *Sanofi, Westborough, MA USA* and Frances Namuswe, *CDER, FDA, Silver Spring, MD USA*

11:05 – 11:10 **Introduction**

Monday, September 14 *continued*

- 11:10 – 11:40 **Evolving Analytical Comparability Strategies for Protein
Biotherapeutics and Gene Therapy Products**
Lisa Marzilli, *Pfizer, Inc., Andover, MA USA*
- 11:40 – 12:10 **Challenges of Host Cell Protein Assessment in Process Development
and Comparability**
Zhongyu Xie, *Sanofi, Framingham, MA USA*
- 12:10 – 12:40 **TBD**
TBD
- 12:40 – 13:00 **Visit Exhibitor Showcase and Posters – Live Chat**

Tuesday, September 15, 2020

07:30 – 08:00 **Sign-on, Virtual Coffee, Visit Exhibitor Showcase**

08:00 – 08:05 **Welcome – Day 2**
John Valliere-Douglass, *Seattle Genetics, Inc., Bothell, WA USA*

Keynote Session II

Session Chairs: Richard Rogers, *Juno Therapeutics, A Bristol-Myers Squibb Company, Seattle, WA USA* and John Valliere-Douglass, *Seattle Genetics, Inc., Bothell, WA USA*

08:05 – 09:05 **Spontaneous Modifications in Long-Lived Proteins: Structural and Biological Implications**
Ryan Julian, *University of California, Riverside, Riverside, CA USA*

09:05 – 09:35 **Technical Seminar**

Sponsored by SCIEX

Session III – Protein Structure and Conformation

Session Chair: Chris Chumsae, *Bristol-Myers Squibb Company, Devens, MA USA* and Ingo Lindner, *Roche Diagnostics GmbH, Penzberg, Germany*

09:35 – 09:40 **Introduction**

09:40 – 10:10 **Mass Spectrometry-based Higher Order Structure Characterization of Protein Therapeutics in Design, Optimization and Development of Biopharmaceuticals**
Jun Zhang, *Amgen Inc., Newbury Park, CA USA*

10:10 – 10:40 **TBD**
Kasper Rand, *University of Copenhagen, Copenhagen, Denmark*

10:40 – 10:55 **Virtual Networking**

Session IV – Informatics, Data Processing, Results

Session Chair: John Valliere-Douglass, *Seattle Genetics, Inc., Bothell, WA USA* and Christopher Yu, *Genentech, a Member of the Roche Group, South San Francisco, CA USA*

10:55 – 11:00 **Introduction**

11:00 – 11:30 **The Expanding Hyphenation of LC Techniques to MS for Intact Mass Characterization of Biopharmaceuticals During Development - Lessons Learned and The Road Ahead**
Dan Bach Kristensen, *Symphogen A/S, Ballerup, Denmark*

Tuesday, September 15 *continued*

11:30 – 12:00

TBD

Mitul Patel, *GlaxoSmithKline, Stevenage, United Kingdom*

12:00 – 12:30

TBD

Zhiqi Hao, *Genentech, a Member of the Roche Group, South San Francisco, CA USA*

12:30 – 13:00

Visit Exhibitor Showcase and Posters – Live Chat

Wednesday, September 16, 2020

07:30 – 08:00 **Sign-on, Virtual Coffee, Visit Exhibitor Showcase**

08:00 – 08:05 **Welcome – Day 3**
John Valliere-Douglass, *Seattle Genetics, Inc., Bothell, WA USA*

Keynote Session III

Session Chair: Da Ren, *Amgen Inc., Thousand Oaks, CA USA* and Douglas Richardson, *Merck & Co., Inc., Kenilworth, NJ USA*

08:05 – 09:05 **TBD**
Jennifer Van Eyk, *Cedars-Sinai Medical Center, Los Angeles, CA USA*

09:05 – 09:35 **Technical Seminar**

Sponsored by Intabio, Inc.

Session V – ‘Omics

Session Chairs: Chris Chumsae, *Bristol-Myers Squibb Company, Devens, MA USA* and Richard Rogers, *Juno Therapeutics, A Bristol-Myers Squibb Company, Seattle, WA USA*

09:35 – 09:40 **Introduction**

09:40 – 10:10 **TBD**
Lihua Huang, *Eli Lilly and Company, Indianapolis, IN USA*

10:10 – 10:40 **Enhancing Host-Cell Protein Detection in Biotherapeutics Using HILIC Enrichment and Proteomic Analysis**
Thomas Slaney, *Bristol-Myers Squibb Company, Bloomsbury, NJ USA*

10:40 – 11:10 **Metabolomic and Proteomic Characterization of CHO Media and Lysate during the Production of Biotherapeutics**
Erin Weisenhorn, *Just Evotech Biologics, Seattle, WA, United States*

11:10 – 11:25 **Virtual Networking**

11:25 – 12:30 **Roundtable Discussion**

12:30 – 13:00 **Visit Exhibitor Showcase and Posters – Live Chat**

Thursday, September 17, 2020

07:30 – 08:00 **Sign-on, Virtual Coffee, Visit Exhibitor Showcase**

08:00 – 08:05 **Welcome – Day 4**
John Valliere-Douglass, *Seattle Genetics, Inc., Bothell, WA USA*

Keynote Session IV

Session Chair: Anders Lund, *Synlogic, Cambridge, MA USA* and Jason Rouse, *Pfizer, Inc., Andover, MA USA*

08:05 – 09:05 **Multiplexing the Orbitrap to Readout Individual Ion Mass Spectra of Virus-Like Particles**
Neil Kelleher, *Northwestern University, Evanston, IL USA*

09:05 – 09:20 **Virtual Networking**

Session VI – Young Scientist

Session Chairs: Ingo Lindner, *Roche Diagnostics GmbH, Penzberg, Germany* and Sarah Rogstad, *CDER, FDA, Silver Spring, MD USA*

09:20 – 09:45 **The Impact of Immunoglobulin G1 Fc Sialylation on Backbone Amide H/D Exchange**
Felix Kuhne, *Roche Diagnostics GmbH, Penzberg, Germany*

09:45 – 10:10 **Integrating Mass Spectrometry-Based Footprinting Approaches and Molecular Docking for Protein Binding Interfaces Analysis**
Mengru Zhang, *Washington University in St. Louis, St. Louis, MO USA*

10:10 – 10:35 **Competitive SEC Affinity Separation for Identification of Antibody Modifications Impacting Binding to Target Proteins**
Rachel Shi, *Amgen Inc., Thousand Oaks, CA USA*

Session VII – New Modalities, Technologies, Approaches and Methods

Session Chairs: Da Ren, *Amgen Inc., Thousand Oaks, CA USA* and Christopher Yu, *Genentech, a Member of the Roche Group, South San Francisco, CA USA*

10:35 – 10:40 **Introduction**

10:40 – 11:10 **Characterization of Adeno-associated Virus Capsids Proteins in Gene Therapy Development**
Yi Pu, *Biogen, Cambridge, MA USA*

11:10 – 11:40 **TBD**
TBD

Thursday, September 17 *continued*

- 11:40 – 12:10 **Building a Sensitive MS-Based Proteomic Approach to Better Characterize CAR-T Cell Therapies**
Camille Lombard-Banek, *NIST, Rockville, MD USA*
- 12:10 – 12:15 **Wrap Up**
Jason Rouse, *Pfizer, Inc., Andover, MA USA*
- 12:15 – 13:00 **Visit Exhibitor Showcase and Posters – Live Chat**