Cell Culture Engineering XIV

Poster Presentations

Novel Protein Biologics Development

1. **Characterization of a novel protein antiviral from Lonomia obliqua using bioinformatics tools and activity analysis by real time**
   Ana Carmo, Butantan Institute, Brazil

2. **Advantages and challenges of developing bispecific antibody biotherapeutics**
   David Zhao, YZY Biopharma, China

3. **Optimization of HIV-1 virus-like particles production in CAP-T cell system**
   Francesc Godia, Universitat Autonoma de Barcelona, Spain

4. **Development of an expression platform for alternative scaffold therapeutics**
   Kevin D. Smith, Janssen, USA

5. **A scalable in vitro system for the generation of large quantities of stem cell derived hepatocytes**
   Ravali T. Raju, University of Minnesota, USA

6. **Identification of a novel antiviral protein from Phyllocaulis boraceiensis mucus, and activity analysis by real time PCR**
   Ronaldo Mendonca, Laboratorio de Parasitologia Instituto Butantan, Brazil

7. **A serum-free adapted CV-1 cell line as a potential host cell line for an oncolytic vaccinia virus production**
   Shuchang Liu, University College London, United Kingdom

Cell Line Engineering

8. **Impact of LC:HC ratio of stable IgG expression and quality**
   Steven Ho, BTI, Singapore

9. **Parallelized construct screening and scale-up of full-length membrane protein expression for biophysical studies**
   Georg Schmid, Roche Diagnostics GmbH, Switzerland

10. **Improving product safety profiles: Host cell lines deficient in CMP-N-acetylneuraminic acid hydroxylase (CMAH) and alpha-1-3-galactosylttransferase (GGTA1)**
    Joaquina Mascarenhas, SAFC, USA

11.

12. **Engineering the expression of "difficult-to-express" recombinant monoclonal antibodies in Chinese hamster ovary cells**
    Leon Phillip Pybus, University of Sheffield, United Kingdom

13. **Improvement of recombinant protein production in insect cells: New host endogenous Sf21 promoters and fast generation of tailored cell lines**
Maren Bleckmann, Helmholtz Center, Germany

14. **Fed-batch cultivation of PYC2-expressing cells: An integrated cellular and process engineering approach to enhance cell culture performance**
Olivier Henry, Ecole Polytechnique de Montreal, Canada

15. **Generating a novel cell line suitable for effective production of biopharmaceuticals using high-energy irradiation**
Satoshi Terada, University of Fukui, Japan

16. **Characterization of alternative promoters to stagger protein expression using the baculovirus-insects cell system**
Steve George, University of Waterloo, Canada

17. **Assessment of hybrid CMV promoters in site-specific integration and random integration CHO cell lines**
Tom Payne, Lonza Biologics, United Kingdom

18. **Analysis of chromosome number and its application to antibody production in Chinese hamster ovary cells**
Toshitaka Kumamoto, The University of Tokushima, Japan

19. **Plasmid-based rapid recombinant protein production in insect cells**
Xiao Shen, Ecole Polytechnique Federale de Lausanne, Switzerland

20. **Localization and non-apoptotic action of Bcl-xL in chinese hamster ovary cells**
Abasha Lewis, IRP NIH-NIDA, USA

21.

22. **High-level recombinant protein production in CHO cells using the cumate gene-switch**
Adeline Poulain, Universite de Montreal, Canada

23. **Comparing furin expression and proprotein convertases activity in CHO and HEK cells**
Aileen Zhou, University of Toronto, Canada

24. **Integrated cell line and process development for a difficult to express protein**
Alan Gilbert, Biogen Idec, Inc., USA

25. **An unexpected design solution to mAb aggregation**
Alice Furgeson, Pfizer, USA

26.

27. **Genome editing with novel CRSPR-Cas system for reduced lactate production in CHO cells**
Camila A. Wilkens, University of Chile, Chile

28. **Production of sialylated antibodies in CHO cells**
Celine Raymond, National Research Council of Canada, Canada

29. **Metabolic engineering of protein production using an in silico platform**
Edwige Arnold, Ecole Polytechnique de Montreal, Canada

30. **Case study: Implementation of a novel cell line development strategy using a single round of facs cloning to accelerate project timelines**
Eileen M. Higham, Medimmune, USA

31. **RMCE-based cell line development: towards predictable and reproducible transgene expression?**
Elisabeth Bludau, Fraunhofer ITEM, Germany

32. **Polyisoprenylated methylated protein methyl esterase activity is vital for cell proliferation and survival**
Felix Amissah, Florida A&M University, USA

33. **A long non-coding RNA, which is abnormally overexpressed in high titer cells, can improve mAB yield and have efficacy in transgene co-overexpression**
Hisahiro Tabuchi, Chugai Pharmaceutical Co., Ltd., Japan

34. **Production of VSV-G VLPs by transient transfection of HEK 293 suspension cell culture and application in nucleic acid delivery**
Igor Slivac, Universite de Laval and PROTEO and THECELL, Canada

35. **Expression of difficult to express proteins in the human CAP cell line**
Jens Woelfel, Cevec Pharmaceuticals GmbH, Germany

36. **Impact of a signal peptide on mAb product quality**
Jill Cai, Wuxi AppTec Co., Ltd., China

37. **CHippO: Manipulation of the Hippo signaling pathway in CHO to produce a superior host for recombinant protein expression**
John Follit, Biogen Idec, Inc., USA

38. **Transcriptomics-guided design of synthetic regulatory elements**
Joseph K. Cheng, The University of Texas at Austin, USA

39. **Detection and quantification of the misspliced form transcribed from an antibody heavy chain gene and inhibition of missplicing by changing the codon of a single amino acid**
Kenji Masuda, Daiichi Sankyo Co., LTD, Japan

40. **Use of site-direct integration to study genomic and transcriptional stability of different promoters**
Mario Pereira, University of Manchester, United Kingdom

41. **PEI-based transient gene expression in CHO cells using the cumate gene-switch**
Mathias Mangion, Universite de Laval and PROTEO and THECELL, Canada

42. **A commonly used signal peptide has a major impact on protein expression in mammalian cells**
Paula Ravnikar, Life Technologies, Inc, USA

43. **Utilizing Chinese hamster ovary cell population heterogeneity for the isolation of new host cell lines with enhanced performance**
Peter M. O'Callaghan, Lonza Biologics, United Kingdom

44. **Generation of high-producing cell lines by cell cycle checkpoint engineering in CHO cells**
Rima Matsuyama, The University of Tokushima, Japan

45. **Characterisation of the secretory bottleneck in recombinant erythropoietin (EPO) production in Chinese hamster ovary (CHO) cells.**
Rodrigo Maldonado-Agurto, University of Manchester, United Kingdom

46. **Secretion augmentation via host cell engineering to improve CHO cell productivity**
Scott D. Estes, Biogen Idec, Inc., USA

47. **Comparison of PiggyBac mediated cell pool generation with different CHO host systems**
Sowmya Balasubramanian, SV-IBI-LBTC/EPFL, Switzerland

48. **High throughput RNA interference for improved functional expression of neurotensin receptor**
Su Xiao, Johns Hopkins University/ National Institutes of Health, USA

Process Development And Scale-Up

49. **Improvement and simplification of fed batch bioprocesses with chemically modified cysteine and tyrosine derivates**
Aline Zimmer, Merck KGaA, Germany

50. **High throughput cell culture to evaluate the relationship between antibody titre and host cell protein levels**
Alma Mona Antemie, University College London, United Kingdom

51. **Control of galactosylated glycoforms distribution in cell culture system**
Anli Ouyang, Eli Lilly, USA

52. **Evolving pilot plant flexibility & capacity - Key lessons learned during the implementation of single-use bioreactors**
Arthi Narayanan, Genentech, Inc., USA

53. **Challenges and solutions of continuous, scalable cultivation for anchorage dependent cells in single-use bioreactors**
Brian Lee, PBS Biotech, Inc., USA

54. **Evaluation of Single-Use Bioreactors for Perfusion Processes**
Christopher Martin, EMD Millipore, USA

55. **Development of high cell density fed-batch culture process to improve productivity of influenza virus for vaccine manufacturing**
Chun Fang Shen, National Research Council of Canada, Canada

56. **Characterization of production bioreactors and media preparation tanks for process development and manufacturing**
Chung Chun, Boehringer Ingelheim, USA

57. **UNICAN: Dual capability in single use bioreactors**
Ekta Mahajan, Genentech, Inc., USA

58. **Using a directed evolution approach to identify CHO host cell lines with improved characteristics**
Fay Saunders, Fujifilm Diosynth Biotechnologies, United Kingdom

59. **Implementing adventitious agent barriers for small-volume media preparations for a commercial cell culture process**
Fikret Kulenovic, Genentech, USA

60. **Evolution in our understanding of raw materials variability and management of the impact on upstream processes throughout commercial product lifecycle**
Hang Yuan, Biogen Idec, Inc., USA

61. **Efficacy and toxicity of three recombinant Trypsins when compared to porcine Trypsin in MRC-5, MDCK and Vero cell lines**
Hans Huttinga, Kerry, USA

62. **The integration of upstream process development, technology transfer, and clinical manufacture enabled by Multivariate Data Analysis (MVDA)**
Hao Chen, Merck, USA

63. **The effects of supplement and cell culture process on monoclonal antibody and recombinant protein productivity improvement**
Hui-Chun Li, EirGenix, Taiwan

64. **Development of large-scale fed-batch process for production of recombinant influenza vaccine**
Jamal Meghrous, Protein Sciences, USA

65. **Troubleshooting of a commercial cell culture production process**
Jason Goodrick, Genentech, USA

66. **Sheff-Vax supplement removes the requirement of FBS for the culture of Vero, MDCK and BHK21 cells**
John F. Menton, Kerry, USA

67. **Evaluation of culture conditions and productivity enhancers in a CHO cell-based perfusion process**
Juliana Coronel, Federal University of Rio de Janeiro, Brazil

68. **Impact of raw material variability on commercial CHO cell culture manufacturing**
Jun Luo, Genentech, Inc., USA

69. **Serum-free suspension culturing of human cells: Adaptation and cryopreservation**
Kamilla Swiech, School of Pharmaceutical Sciences of Ribeirao Preto, Brazil

70. **Extended growth and enhanced productivity in CHO-K1 and CHO DG44 cultures upon application of a chemically defined feeding strategy**
Karen A. Benedict, Kerry, USA

71. **High throughput cell culture media component screening**
Kelley M. Heffner, MedImmune, USA

72. **Development of a scalable, high performance bio-production process using scale down culture systems**
Kimesha Hammett, BDAB, USA

73. **Evaluation of Chinese hamster ovary host cell protein expression over varied cultivation duration**
Kristin N. Valente, University of Delaware, USA

74. **Reliable mAb production in CHO – quite a challenge in the light of raw material lot to lot variations**
Marco Jenzsch, Roche Pharma Biotech, Germany

75. **Scale-down tools for evaluation of perfusion cultivations**
Martin Heitmann, Novo Nordisk, Denmark

76. **Poor recovery from thaw troubleshooting**
Meg Tung, Genentech, Inc., USA

77. **Challenges and lessons learned during scale up and tech transfer of a non-platform NS0 process**
Mei Shao, AstraZeneca, USA

78. **Evaluation and characterization of the ambr250 system for use with stable cell and transient protein production**
Melisa Carpio, Takeda California, USA

79. **Trouble-shooting scale-up challenges for a pH-sensitive cell line during process development and clinical manufacturing**
Melissa S. Mun, Genentech, Inc., USA

80. **Use of high-throughput media design and novel components to increase monoclonal antibody titer and maintain product quality**
Michael Gillmeister, Life Technologies, Inc, USA

81. **Challenges to produce effective mixing for powder media formulations used for CHO cell growth and mab production**
Michael Hippach, Agensys, Inc, USA

82. **Gas transfer characterization methodology to improve bioreactor scale-down performance**
Michael Mollet, MedImmune, USA

83. **Insights into the metabolism of CHO cells under key nutrient limitations**
Nuno Carinhas, IBET/ITQB-UNL, Portugal

84. **Scale free manufacturing model using perfusion**
Olivier Berteau, APIcells Inc., USA

85. **Use of multivariate prediction to determine optimal endpoint of a bioreactor process**
Patrick O. Gammell, Amgen, USA

86. **Monte Carlo simulations: A practical tool for setting process proven acceptable ranges for a Mab producing cell culture process.**
Ronald Eimers, Merck Sharp & Dohme, The Netherlands

87. **Development of a chemically defined platform media for MAb production**
Shinobu Kuwae, Takeda Pharmaceutical Company, Japan

88. **Impact of metabolic characteristics of a cell line on process scale-up**
Sigma Mostafa, KBI Biopharma Inc., USA

89. **Viral barriers for upstream cell culture processes: UV-C media treatment combined with gamma irradiated Donor Bovine Serum**
Sofie Goetschalckx, Genzyme, Belgium

90. **Spectroscopic tools for an automated suspension cell culture screening system**
Sven Markert, Roche Diagnostics GmbH, Switzerland

91. **From DNA to 1 kg in 80 days**
Taymar E. Hartman, AbbVie Biotherapeutics Inc., USA

92. **Towards a single chemically defined medium for combining transfection and cultivation of HEK and CHO cell lines**
Tim Beckmann, Xell AG, Germany

93. **Development and characterization of an orbitally shaken disposable 12 L bioreactor suitable for mammalian and microcarrier cultures**
Tim Burgin, Kuhner Shaker, Switzerland

94. **Simultaneous measurement of CO2 and O2 mass transfer coefficients for modeling of dissolved carbon dioxide and oxygen across bioreactor scales**
Vijay Janakiraman, Biogen Idec, Inc., USA

95. **The effect of selected amino acid supplements on monoclonal antibody production by using CHO cell in scale-down bioreactors**
Wei-Kuang Chi, Development Center for Biotechnology, Taiwan

96. **Bioproduction using large-scale transient transfection: From >1 gram/l antibody titers via transient gene expression to rapid, high-yield stable cell line generation**
Madhusudan V. Peshwa, MaxCyte, USA

97. **Ambr as a qualified scale down model for process development and process characterization**
Yao-Ming Huang, Biogen Idec, Inc., USA

98. **Condensed inoculating process aiming enhancing productivity and simplifying operation**
Yasufumi Imamoto, Kyowa Hakko kirin Co., Ltd., Japan

99. **Addressing changes to critical raw materials**
Yuval Shimoni, Bayer, USA

Cell Culture Process Intensification

100. **Culture supplement obtained from natural products for improving productivity in serum-free culture of mammalian cells**
Akiko Ogawa, Suzuka National College of Technology, Japan

101. **Investigating the impact of sparger design on fouling to address sialic acid content variability in large scale perfusion cultures**
Benjamin Youn, BMRN, USA

102. **Model-based optimization toward cell death suppression in a fed-batch culture of GS-NS0 cell line for production of monoclonal antibody**
Chonlatep Usaku, Imperial College London, United Kingdom

103. **Use of an alternating tangential flow system (ATF) for the production of fusion proteins in high density CHO cells cultures**
Cristian Paillet, Zelltek S.A., Argentina

104. **Achieving long-term, high-density cell cultures with alternating tangential flow (ATF) cell separation technology**
Jason Walther, Genzyme, A Sanofi Company, USA

105. **Hyperosmolality and its effects on antibody producing CHO cells**
Jennifer Pfizenmaier, University of Stuttgart, Germany

106. **Exploiting the dielectric properties of CHO cells to monitor apoptotic events in a bioprocess**
Katrin Braasch, University of Manitoba, Canada

107. **Robust high yielding platform for biopharmaceutical protein production**
Kiyoshi Hirakawa, Ajinomoto, Japan

108. **Strategies to sustain long term high cell density culture for the production of monoclonal antibodies**
Marcella Yu, Genzyme, A Sanofi Company, USA

109. **Improving culture performance and antibody production in CHO cell culture processes by reducing the Warburg effect**
Maria Buchsteiner, University of Queensland, Australia

110. **Simulation of a hydrocyclone specially designed for animal cell separation: Comparison of different computational models**
Ricardo A. Medronho, Federal University of Rio de Janeiro (UFRJ), Brazil

111. **The importance of media selection and scale-down models for high-titer expression in CHO cells**
Sebastien Ribault, Merck, France

112. **Intracellular metabolic flux balance analysis of CHO cells supplemented with wheat hydrolysates for improved mAb production and cell-growth**
Seongkyu Yoon, University of Massachussetts Lowell, USA

113. **Improved manufacturability of fed-batch systems employing highly concentrated feeds**
Shawn Barrett, Life Technologies, Inc, USA

114. **Extreme cell densities of CHO cells in perfused stirred tank bioreactor**
Veronique Chotteau, KTH - Royal Institute of Technology, Sweden

115. **Perfusion seed cultures improve biopharmaceutical fed-batch production capacity and product quality**
William C. Yang, Biogen Idec, Inc., USA

116. **A method to optimize the cell specific perfusion rate in perfusion process**
Ye Zhang, KTH - Royal Institute of Technology, Sweden

117. **A streamlined single-use solution for intensified high-density cell culture processes**
Zhou Jiang, GE Healthcare, USA

Process Impacts On Product Quality

118. **Product quality control during late stage cell culture process development**
Ana Veronica Carvalhal, Genentech, Inc., USA

119. **The variable glycosylation profiles generated for IGG1 and chimeric camelid antibodies and their modifications through lowered culture redox potential**
Benjamin Dionne, University of Manitoba, Canada

120. **Uncovering methods for the prevention of protein aggregation and improvement of product quality in a transient expression system**
Bram Estes, Amgen, USA

121. **Effects of low glucose and glutamine concentrations on the glycosylation of CHO EG2-hFc monoclonal antibody**
Carina Villacres Barragan, University of Manitoba, Canada

122. **Characterization of the influence of cultivation parameters on extracellular modifications of antibodies during fermentation**
Christian Hakemeyer, Roche Diagnostics GmbH, Switzerland

123. **Effect of media supplements on the glycosylation profile in MAbs**
Devesh Radhakrishnan, University of Delaware, USA

124. **Supplementing glycosylation, metabolomics of enhanced feeding strategies**
Eric J.M. Blondeel, University of Waterloo, Canada

125. **Digital multiplexed mRNA analysis of N-glycosylation-related genes in recombinant Chinese hamster ovary cells treated with sodium butyrate**
Yeon-Gu Kim, KRIBB, Korea

126. **Red-colored IgG4 caused by vitamin B12 from cell culture media combined with disulfide reduction at harvest**
Gayle E. Derfus, Gilead, USA

127. **Increasing high mannose glycan species of recombinant proteins through glucose limitation and alternative carbon sources**
Jian Wu, Amgen, USA

128. **Product quality optimization (including ADCC activity) of bio-therapeutics via cell culture optimization**
Jincai Li, WuxiAppTec Co., Ltd., China

129. **Influence of osmolality in culture medium on galactosylation**
Jun Jung, LG Life Sciences, Korea

130. **Approaches to screening and characterization of cloned CHO cell lines containing sequence variants**
Karin Anderson, Pfizer, USA

131. **Controlling host-cell based proteolytic activity in CHO cultures**
Kunal Aggarwal, Novartis Vaccines and Diagnostics, USA

132. **Product quality lessons learned from developing and implementing a chemically-defined CHO platform cell culture process**
Martin Gawlitzek, Genentech, Inc., USA

133. **Improved quality and productivity in pseudo-perfusion cultures of self-degradation protein**
Masami Yokota, Astellas Pharma Inc., Japan

134. **In vitro modification of monoclonal antibody glycans using glycosylation inhibitors: Effects on production, activity and stability**
Maureen Spearman, University of Manitoba, Canada

135. **Evaluating and minimizing sequence variants during recombinant protein production**
Michael W. Laird, Genentech, Inc., USA

136. **Optimization and control of monoclonal antibody product quality using a media and process toolbox approach**
Min Zhang, Fujifilm Diosynth Biotechnologies, USA

137. **Effect of N-glycosylation on the structure and function of a heavy chain monoclonal antibody**
Natalie J. Krahn, University of Manitoba, Canada

138.

139. **Systematic evaluation of commonly-used and uncommonly-used cell culture media compounds for the targeted shifting of protein glycosylation profiles of recombinant antibodies and dual-variable domain immunoglobulins**
Patrick M. Hossler, AbbVie Biotherapeutics Inc., USA

140. **Reactive oxygenated species can initiate apoptosis in CHO cells, disrupt the lysosome membrane and trigger the release of cathepsin d into the cytosol**
Sumitra Nadarajah, BioMarin Pharmaceutical, USA

141. **Effect of glutamine substitution by TCA cycle intermediates on the production and sialylation of Fc-fusion protein in Chinese hamster ovary cell culture**
Tae Kwang Ha, KAIST, Korea

142. **Analysis of anti-aggregation effect in trehalose-supplemented CHO cell culture**
Takeshi Omasa, The University of Tokushima, Japan

143. **The role of glucose and glutamine regulated metabolic pathways on glycosylation of a heavy chain monoclonal antibody in CHO cells**
Venkata Tayi, University of Manitoba, Canada

144. **Deciphering factors that have impacts on glycosylation of mAb and its biophysical properties**
Zhimei Du, Amgen, USA

Big Data 'omics and New Technologies

145. **Interpretation and prediction of cell culture performance utilizing a combination of metabolic flux analysis and statistical methods**
Amber Broadbent, Bend Research, Inc., USA

146. **Metabolomic profiling as a tool for feed development**
Anne Kantardjieff, Alexion Pharmaceuticals, USA

147. **Using dielectric spectroscopy to non-invasively measure cell physiological properties in a bioreactor**
Brandon, J. Downey, Bend Research, Inc., USA

148. **A systems biology approach to improve host cells for biopharmaceutical production**
Camila Orellana, University of Queensland, Australia

149. **Elucidating the impact of copper limitation on energy metabolism in Chinese hamster ovary cells using 13C-metabolic flux analysis**
Chetan Goudar, Amgen Inc., USA

150. **Improved understanding and control of low fucose content of mAbs expressed in glycoengineered CHO cell lines**
Christine Jung, Roche Diagnostics GmbH, Switzerland

151. **Gaining optimized cell-level observability and data-driven process guidance by leveraging on-line technologies such as dielectric spectroscopy and at-line tools such as the modular automated sampling technology (MAST-TM) platform**
Clinton B. Pepper, Bend Research, Inc., USA

152. **Live-cell imaging of baculovirus-infected insect cells**
David Hidalgo, Instituto de Biotecnologia, UNAM, Mexico

153. **Use of ITRAQ and free-labeling proteomics to study CHO antibody expressing cell lines**
Deniz Baycin Hizal, MedImmune, USA

154. **Translatome of CHO cells: Towards bridging the gap between transcriptome and proteome**
Dong-Yup Lee, National University of Singapore, Singapore

155. **Dielectric spectroscopy as real-time monitoring tool for critical phases of cell viral production.**
Emma Petiot, CPE-Lyon Engineer School, France

156. **Implementation of a small scale, medium throughput microRNA screening assay based on mimics for Chinese hamster ovary cells**
Gerald Klanert, Austrian Center of Industrial Biotechnology, Austria

157. **A genome-scale model of Chinese hamster ovary cell metabolism for multiomic data analysis and optimal bioprocess design**
Hooman Hefzi, University of California, San Diego, USA

158. **Characterization of biological variance in time-series metabolomic data of cultured mammalian cells**
Huong Le, Amgen, USA

159. **Molecular markers of CHO cells phenotype changes during prolonged culture**
Imelda Juniarsih, The University of Manchester, United Kingdom

160. **Quantification of genomic rearrangements in CHO cell lines by AFLP**
Inmaculada Hernandez Lopez, Austrian Center of Industrial Biotechnology, Austria

161. **13C flux analysis of metabolic phenotypes associated with peak productivity and apoptotic resistance in CHO cells**
Jamey D. Young, Vanderbilt University, USA

162. **Single cell omics**
Jeff Chalmers, The Ohio State University, USA

163. **High-throughput process development strategy for biologics DS manufacturing**
Jongchan Lee, Bristol-Myers Squibb, USA

164. **Monoclonal antibody producing CHO cells fed-batch-batch cultures assisted by an in silico metabolomic platform**
Julien Robitaille, Ecole polytechnique de Montreal, Canada

165. **Production and purification of biotin-tagged ectodomains of FcγRs, by co-transfection of BirA enzyme plasmid in mammalian cells**
July Dorion-Thibaudeau, Ecole Polytechnique de Montreal, Canada

166. **Genetic contrasts at the genomic level in CHO cell lines**
Kyoung Ho Lee, University of Minnesota, USA

167. **In situ Raman spectroscopy for bioreactor characterization by simultaneous real-time monitoring of multiple process parameters**
Lada Laenen, Genzyme, A Sanofi Company, USA

168. **Comparative transcriptome dynamics in CHO cell lines**
Liang Zhao, University of Minnesota, USA

169. **Metabolite profiling of a host CHO-S cell line adapted to different culture media: An experimental platform to dissect metabolite requirements to fuel cell growth, viability and potential productivity**
Mark Elvin, The University of Manchester, United Kingdom

170. **Ambr48 as a tool for process development and key process parameter identification for the manufacture of a biosimilar in CHO cells**
Matthew Zustiak, Gallus Biopharmaceuticals, USA

171. **Using systems approaches to assess impacts of genomic variation in chinese hamster ovary cell lines**
Nathan Lewis, University of California, San Diego, USA

172. **Differential iTRAQ proteomics to identify protein networks pertinent to mAB production in CHO cell lines**
Brendan McConkey, University of Waterloo, Canada

173. **Using gabor wavelet features and multivariate image analysis techniques to assess the impact of culture medium on myoblast morphology observed under phase contrast microscopy**
Pierre-Marc Juneau, Laval University, Canada

174. **A process analytical technology (PAT) strategy to improve manufacturing excellence of a perfusion per.C6® cultivation process**
Sarah Mercier, University of Wageningen, The Netherlands

175. **Exploring the promoter landscape of the Chinese hamster by next-generation RNA sequencing**
Thomas Noll, Bielefeld University, Germany

176. **Integrative -OMICS data approachon the road to understand MIRNA-engineered CHO cell phenotypes**
Vaibhav Jadhav, BOKU University, Austria

177. **Profiling deacetylase activities in cell lysates with peptide arrays and SAMDI mass spectrometry application to CHRF cell megakaryocytic differentiation**
William M. Miller, Northwestern University, USA

178. **Global study of metabolic shift using an extended genome scale model for mammalian cells**
Ziomara P. Gerdtzen, University of Chile, Chile

Cell Therapy

179. **Enhanced effector function of human t lymphocytes grown *ex vivo* in serum-free medium**
Angel Varela-Rohena, Life Technologies, Inc, USA

180. **Development and optimization of agitation in microcarrier-based cell therapy cultures in stirred-tank bioreactors**
Biren Mistry, Celgene Cellular Therapeutics, USA

181. **Development of a xeno-free environment for human keratinocyte culture**
Imad Debbah, Universite de Laval, Canada

182. **Bioreactor control algorithms and process developments for improved stem cell expansion**
Sarah W. Harcum, Clemson University, USA

183. **Cell therapy bioprocess economics and optimization**
Suzanne Farid, University College London, United Kingdom

Biosimilars

184. **Rapid Development and Scale-up of a Biosimilar**
Claudia Berdugo, CookPharmica LLC, USA

185. **Biosimilar development: A tale of two models**
Mark Melville, Epirus Biopharmaceuticals, USA

Other

186. **Development of a dual cassette viral reporter vector to model endothelial progenitor cell adhesion and differentiation using live cell imaging**
Marieve Boulanger, Universite Laval, Canada

187. **Effects of increased osmolarity on growth, productivity, intracellular osmolytes, and gene expression in industrial fed-batch CHO cell cultures**
Matthew DeSieno, SUNY College of Nanoscale Science and Engineering, USA

188. **Varied CHO cell responses to amino acid limitations**
Navid Ghaffari, University of British Columbia, Canada

189. **Evaluation of siRNA technology as a tool for transient cell line engineering**
Neha Dhami, UCB/University of Manchester, United Kingdom

190. **Investigation of tricarboxilic acid cycle intermediates to control ammonia generation and to enhance cell culture performance**
Oscar Lara-Velasco, GlaxoSmithKline, USA

191. **The characterization of disposable large-scale orbitally shaken bioreactors for mammalian cell cultivation**
Dominique T. Monteil, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

192. **Case Studies for Utilization of Conventional and CFD approaches for successful scale up and scale down of bioreactor processes for monoclonal antibodies**
Michelle LaFond, Regeneron Pharmaceuticals