

Biochemical Engineering XV Poster Session B

SESSION 8: HIGH THROUGHPUT AND OMICS TECHNOLOGIES

- 8.1 **Screening of apoptosis inducible short peptides from TRAIL-derived sequence**
Mina Okochi, Nagoya University, Japan
- 8.2 **Development of morphological process-control analysis for the automation of processes in regenerative medicine**
Ryuji Kato, Nagoya University, Japan
- 8.3 **Development of high-throughout flow-cytometry techniques for prokaryotic cell culture analysis**
Bryan P. Tracy, Northwestern University, USA
- 8.4 **Alkaloid and proteome profiles of *Eschscholzia californica* cell cultures treated with yeast elicitor**
Carolyn W.T. Lee-Parsons, Northeastern University, USA
- 8.5 **Quantitative genomic and proteomic analysis of NSO cells in high density perfusion cultures**
Mohamed Al-Rubeai, University College Dublin School of Chemical and Bioprocess Engineering, Ireland
- 8.6 **Transcriptional orchestration and control of clostridial sporulation**
Shawn W. Jones, Northwestern University, USA
- 8.7 **Tissue culture in a microfluidic bioreactor array**
Yuan Wen, The Ohio State University, USA
- 8.8 **The extracellular proteomes of *Escherichia coli* B and K-12 strains and their application in the secretory production of recombinant proteins**
Xiao-Xia Xia, Korea Advanced Institute of Science and Technology, Korea
- 8.9 **High-throughput detection of clinically predominant pathogen and evaluation of antibiotics effect by using DNA microarray**
Seung Min Yoo, Korea Advanced Institute of Science Technology, Korea
- 8.10 **A novel feature selection method which incorporates ontology information to identify functionally relevant genes regulating processes of interest**
Christina Chan, Michigan State University, USA
- 8.11 **A study of the transcriptional dynamics of free fatty acids in liver cells**
Christina Chan, Michigan State University, USA
- 8.12 **Proteomic and genomic studies of mammalian cell physiology to optimize production of therapeutic and diagnostic proteins**
Susan T. Sharfstein, Rensselaer Polytechnic Institute, USA
- 8.13 **Application of molecular barcoding to proteomics**
S. Patrick Walton, Michigan State University, USA

SESSION 9: THE BIOLOGY CHEMISTRY INTERFACE: MATERIALS AND NANOTECHNOLOGY

- 9.1 **Synthesis of nanobiomaterials using recombinant rotavirus vp6 protein as template for chemical deposition and functionalization**
Germán Plascencia-Villa, Universidad Nacional Autónoma de México, Mexico
- 9.2 **EQCM platform for real-time detection of DNA hybridization and polymorphisms in flow processes.**
J.M. Encarnação, IBB- Institute for Biotechnology and Bioengineering, Centro de Biomedicina Molecular e Estrutural, Portugal
- 9.3 **Piezoelectric sensors for biorecognition analysis and detection of protein analytes in complex liquid mixtures: biomedical application to detect HIV1 vif**
Guilherme N.M. Ferreira, IBB- Institute for Biotechnology and Bioengineering, Centro de Biomedicina Molecular e Estrutural, Portugal
- 9.4 **Bioactive protein-based hydrogels for functional bioelectrode construction**
Scott Banta, Columbia University, USA
- 9.5 **Design of a nanoscale protein scaffold for targeted molecular delivery**
Szu-Wen Wang, University of California at Irvine, USA
- 9.6 **Controlled particle deposition by design of an electrochemical adsorption cell**
Fatemeh Abniki, National Petrochemical Company, Iran
- 9.7 **Whey protein as a tissue regeneration scaffold**
James Henry, Louisiana State University, USA
- 9.8 **More about DNA**
Kakha Nadiradze, Biotechnology Center of Georgia, Georgia
- 9.9 **Controlled liposomal systems for photodynamic therapy and pharmaceutical applications**
Isabelle Noiseux, INO - Institut National d'Optique, Canada
- 9.10 **Simple patterning of cells on a biocompatible nonchemically amplified resist**
So Young Yoo, Medigenes Co., Ltd, Republic of Korea
- 9.11 **Surfactant effect on biocatalysis: a mechanistic approach**
Loddie Hagar, University of California, Berkeley, USA
- 9.12 **Probing the surface orientation of a silver-binding designer protein by SERS**
François Baneyx, University of Washington, USA
- 9.13 **Influence of surface fluidity on cell binding and integrin clustering**
A. Sofia Garcia, Northwestern University, USA

SESSION 10: VACCINES

- 10.1 **Strategy for preparation of non-viral vectors for therapy and vaccination**
*Dr E. Keshavarz-Moore, UCL- Department of Biochemical Engineering
Torrington place, london, London, UK*
- 10.2 **Optimization of adenovirus production in perfusion cultures**
Olivier Henry, École Polytechnique de Montréal, Canada
- 10.3 **New disposable fixed-bed bioreactor for cell culture and virus production based on a proprietary agitation and aeration system**
Nicolas Havelange, Artelis, Belgium
- 10.4 **Process development for the production of recombinant adeno-associated vectors for gene therapy applications exploiting baculovirus technology**
Alejandro Negrete, National Institutes of Health, USA

SESSION 11: ANALYTICS AND PRODUCT QUALITY STUDIES IN BIOCHEMICAL PROCESSES

- 11.1 **Whole protein LCMS - multivariate analysis for product quality control and cell culture profiling**
François-Thomas Michaud, Laval University, Canada
- 11.2 **Glycosylation of influenza A virus hemagglutinin**
Jana Schwarzer, Max Planck Institute for Dynamics of Complex Technical Systems, Germany
- 11.3 **Estimation of cell concentration in plant cell suspensions from an industrial bioprocess development perspective**
Joel Sirois, University of Sherbrooke, Canada
- 11.4 **Improved glycosylation in perfusion cultures of recombinant CHO cells**
Dhinakar S. Kompala, University of Colorado, USA
- 11.5 **A survival strategy of *Escherichia coli* against oxidative stress**
Yoshihiro Ojima, Osaka University, Japan
- 11.6 **An intracellular analysis of the glycosylation process in CHO cells**
Niki SC Wong, Bioprocessing Technology Institute, Singapore
- 11.7 **Cell culture efforts to reduce glycation in recombinant humanized antibody**
Inn Yuk, Genentech, Inc, USA
- 11.8 **Application of multivariate analysis towards biotech processes: case study of a cell-culture unit operation**
Alime Ozlem Kirdar, Amgen, USA

- 11.9 **Optimization of bioreactor conditions to improve product quality in fed-batch CHO cell culture**
Chengbin Lin, Centocor R&D, Inc, USA
- 11.10 **Effect of sparge rate and mixing on scale-up of GS-NS0 cell culture for monoclonal antibody production**
Derek Adams, Alexion Pharmaceuticals, Inc., USA

SESSION 12: BIOCHEMICAL ENGINEERING EDUCATION

- 12.1 **Recruiting and educating the next generation of leaders in bioprocessing**
Matt Croughan, Amgen Bioprocessing Center at Keck Graduate Institute, USA

SESSION 13: BIOCHEMICAL ENGINEERING OF PRODUCT FORMULATION (IN)STABILITY AND PRESERVATION

- 13.1 **Kinetic study of beta-amyloid residue accessibility by reductive alkylation and mass spectrometry**
Theresa Good, University of Maryland, USA

SESSION 14: BIOMOLECULAR TRANSFORMATION AND BIOCATALYSIS

- 14.1 **Zero growth product formation in industrial micro-organisms**
Jeroen Hugenholtz, Kluiver Centre; Wageningen Centre for Food Sciences; NIZO Food Research, The Netherlands
- 14.2 **Catalytic mechanism and improvement of hyperthermophilic L-threonine dehydrogenase based on the crystal structure**
Noriko Higashi, Osaka University, Japan
- 14.3 **Low-cost specific arsenic accumulation and removal by engineered bacteria expressing *Fucus vesiculosus* metallothionein**
Shailendra Singh, University of California, Riverside, USA
- 14.4 **Accelerating biocatalytic process design: Integrating new tools from biology, chemistry and engineering**
Lye, G.J., University College London, UK
- 14.5 **The relationship between hydrodynamic forces and the cell cycle: implication to bioprocessing**
Jeffrey Chalmers, The Ohio State University, USA
- 14.6 **Detection and quantification of low expressing surface markers using magnetic nanoparticles**
Jeffrey Chalmers, The Ohio State University, USA
- 14.7 **Applications of a thermostable nitrilase superfamily amidase with unusual substrate selectivity**
Stephanie G Burton, University of Cape Town, South Africa

- 14.8 **Tuneable protein expression in *Pichia pastoris***
Franz S. Hartner, Research Centre Applied Biocatalysis, Austria
- 14.9 **Promising biocatalysts for preparing natural medicinal glycosides**
M.Dyumaev, All-Russian Research Institute of Medicinal and Aromatic Herbs, Russia
- 14.10 **Developing hybrid metabolic flux models for applications in industrial recombinant protein production in *Escherichia coli***
Adam Meadows, Genentech, USA
- 14.11 **Expanded application of hydroxynitrile lyases to the synthesis of optically active cyanohydrins**
Christopher Roberge, Merck Research Laboratories, USA

SESSION 15: BIOENERGY

- 15.1 **Biodiesel production by enzymatic transesterification of used olive oil**
Palligarnai T Vasudevan, University of New Hampshire, USA
- 15.2 **Hydrogen and methane production from biomass by a two-stage fermentation process**
Yuan Lu, Tsinghua University, China
- 15.3 **Enzyme stabilization for biofuel cells**
Jungbae Kim, Pacific Northwest National Laboratory, USA
- 15.4 **Enzymatic production of biodiesel in organic-aqueous two phase system**
Md. Mahabubur Rahman Talukder, Institute of Chemical and Engineering Sciences, Singapore
- 15.5 **Enhanced biomass-bioenergy conversion through enzyme engineering**
Rajat Sapra, Sandia National Laboratories, USA
- 15.6 **Discovery of novel routes for the biosynthesis of industrial chemicals: 3-hydroxypropanoate**
Vassily Hatzimanikatis, Ecole polytechnique fédérale de Lausanne, Switzerland
- 15.7 **High yield hydrogen production from starch and water by synthetic enzymatic pathway**
Y-H Percival Zhang, Virginia Tech, USA
- 15.8 **Genome shuffling of *Saccharomyces cerevisiae* for resistance to inhibitors from lignocellulosic substrates**
Vincent Martin, Concordia University, Canada
- 15.9 **Thermodynamic metabolic flux analysis with the group contribution method**
Christopher Henry, Northwestern University, USA

SESSION 16: DOWNSTREAM PROCESSING

- 16.1 **Development of a monoclonal antibody harvest protocol**
Judy Glynn, Pfizer Inc, USA
- 16.2 **Process development acceleration and in-process monitoring for reovirus type 3 manufacturing**
Amine Kamen, Biotechnology Research Institute/National Research Council, Canada
- 16.3 **Bioengineering strategies for the development of novel processes to high value biological products recovery**
Marco Rito-Palomares, Tecnológico de Monterrey, Mexico
- 16.4 **Separation of PEGylated RNase A proteins from unmodified protein using a mild hydrophobic interaction chromatography with polyethylene glycol on sepharose**
Marco Rito-Palomares, Tecnológico de Monterrey, Mexico
- 16.5 **Understanding the role of quaternary self-association during the affinity purification of viral LEGOTM proteins**
Daniel I Lipin, University of Queensland, Australia

SESSION 17: COMPLEX BIOLOGICAL SYSTEMS – TISSUE, MULTICELLULAR, ORGANISMS AND MICROBIAL COMMUNITIES

- 17.1 **Application of mesenchymal stem cell sheets constructed by using magnetite nanoparticles and magnetic force to bone tissue engineering**
Kazunori Shimizu, Nagoya University, Japan
- 17.2 **Glucans as biological response modifiers in treatment of murine tumors and metastases**
Korolenko Tatyana A., Institute of Physiology RAMS, Russia
- 17.3 **Lysosomal proteases and their inhibitors as targets for cancer therapy**
Korolenko Tatyana A., Institute of Physiology RAMS, Russia
- 17.4 **Regulation of the fatty acid pathway in thraustochytrids to increase production of EPA and DHA**
Gabrielle S. Girouard, Ocean Nutrition, Canada
- 17.5 **The fungal response to carbon starvation**
Mark R. Marten, University of Maryland Baltimore County, USA
- 17.6 **Quantitative proteomic analysis of a soil bacterium under different levels of cadmium stress**
Kenneth F. Reardon, Colorado State University, USA
- 17.7 **Active community profiling of microbial communities remediating acid mine drainage**
Kenneth F. Reardon, Colorado State University, USA

- 17.8 **Poly (lactic-co-glycolic acid) hollow fibre membranes for use as a tissue engineering scaffold**
Julian B Chaudhuri, University of Bath, UK
- 17.9 **Nicotinamide (vitamin B3) increases the ploidy and proplatelet production of human megakaryocytes: phenotypic characterization and mechanism of action**
William M. Miller, Northwestern University, USA
- 17.10 **A novel data mining method to identify assay-specific signatures in functional genomic studies**
Ramon Gonzalez, Rice University, USA
- 17.11 **A new paradigm for glycerol fermentation in *Escherichia coli* and other enteric bacteria: implications for the production of biofuels and biochemicals**
Ramon Gonzalez, Rice University, USA