



SOCIETY OF TOXICOLOGY 2017

Baltimore, Maryland

March 12-16, 2017

Exhibitor-Hosted Sessions

Tuesday, March 14

10:30 AM to 11:30 AM

CC Room 337

Exhibitor-Hosted Session: Neurotox and Cardiac Safety Assessment: Case Studies Employing iPS Cell Lines, MEA, and Optogenetic Techniques

Presented by: Axiogenesis AG and Axion BioSystems

Discover the predictive power of Axiogenesis iPS cardiomyocytes and neurons with Axion BioSystems' Maestro multiwell MEA platform. Experts in the field will present their case studies in neurotoxicology (HESI NeuTox) and cardiac safety (CiPA) in conjunction with innovative new products that control in vitro assays through optogenetic techniques.

Wednesday, March 15

1:30 PM to 2:30 PM

CC Room 338

Exhibitor-Hosted Session: iPSC-Derived Glutamatergic Neurons: Something to Get Excited About!

Presented by: Cellular Dynamics Intl, a FUJIFILM Company

iCell Glutamatergic Neurons are human excitatory neurons that form spontaneously bursting networks modulated by pro-consultant and neuroactive molecules, thus adding a new dimension to the toxicologist's toolbox. This workshop will illustrate the attributes of these neurons, provide case studies highlighting their use, and illustrate potential analyses for pro-seizurogenic investigations.

Posters

Monday, March 13

1:15 PM to 4:30 PM

CC Exhibit Hall

Poster Session: Bioinformatics and Tox Databases

#1391 **QSAR Analysis of Chemical Neurotoxins Using Human Neuronal Stem Cell Microelectrode Array Measurements (MEA) and Tox21 High-Throughput Data.**

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J.M. Gearhart¹, Y. Chushak¹, S. Hinckley², A.G. Bang², D.K. Ott³, and H.A. Pangburn³.

¹The Henry M. Jackson Foundation For Military Medicine, Wright-Patterson AFB, OH;

²Sanford- Burnham Prsby, La Jolla, CA; and ³USAFSAM, Wright-Patterson AFB, OH.

1:15 PM to 4:30 PM

CC Exhibit Hall

Poster Session: Neurotoxicology: Microelectrode Arrays (MEAs)

#1409 **Concentration-Response Assessment of Toxcast Phase Ii Compounds on Spontaneous Neural Network Activity In Vitro.**

P214

J. Strickland¹, K. Wallace², M.T. Martin², K. Houck², J. Ross¹, and T. Shafer².

¹Axion Biosystems, Atlanta, GA; and ²US EPA, Research Triangle Park, NC.

#1410 **A Multivariate Extension of Mutual Information in Developing Neural Networks Is a Discriminative Measure of Compound Effects on Network Activity.**

P215

K. Ball¹, C. Grant¹, W.R. Mundy², and T. Shafer².

¹ORAU, Oak Ridge, TN; and ²US EPA, Research Triangle Park, NC.

#1411 **Evaluating Flame Retardant-Induced Changes in Cortical Network Ontogeny Using Microelectrode Arrays.**

P216

J.P. Brown, K.A. Wallace, C. Frank, C. Grant, W.R. Mundy, and T.J. Shafer.

US EPA, Research Triangle Park, NC.

#1412 Defining Toxicological Tipping Points with Microelectrode Array Recordings of Developing Neural Networks.

P217

C.L. Frank, J.P. Brown, K. Wallace, W.R. Mundy, I. Shah, and T.J. Shafer.

US EPA, Durham, NC.

#1413 Loperamide Inhibits the Spontaneous Activity of Neural Networks.

P218

I. Curry-Chisolm¹, K. Wallace², C. Mack³, and T. Shafer³.

¹North Carolina Central University, Durham, NC; ²US EPA, Research Triangle Park, NC; and ³US EPA, Durham, NC.

#1415 Hazard Characterization of Illicit Drugs and New Psychoactive Substances (NPS) Using Microelectrode Array Recordings and a Novel Fluorescence-Based Neurotransmitter Transporter Assay.

P220

A. Zwartsen^{1,2}, A.H. Verboven¹, S. Drega¹, S. Schmeink¹, G. van Kleef¹, F.M. Wijnolts¹, A. de Groot¹, L. Hondebrink², and R.H. Westerink¹.

¹Utrecht University, Utrecht, Netherlands; and ²University Medical Center Utrecht, Utrecht, Netherlands.

1:15 PM to 4:30 PM

CC Exhibit Hall

Poster Session: Stem Cell Biology and Toxicology

#1445 Non-Integrating, Transient Optogenetic Modification of Human iPSC-Derived Cardiomyocytes Using GCaMP6f and Channel Rhodopsin 2 mRNAs.

P315

B. Wolters¹, R. Kettenhofen¹, J. D'Angelo², H. Horai³, E. Dragicevic⁴, G. Luerman¹, and H. Bohlen¹.

¹Axiogenesis AG, Cologne, Germany; ²Hamamatsu Photonics, Massy, France; ³Hamamatsu Photonics, Hamamatsu, Japan; and ⁴Nanion Technologies GmbH, Munich, Germany.

Tuesday, March 14

9:30 AM to 12:45 PM

CC Exhibit Hall

Poster Session: Neurotoxicology: General Neurotoxicity

#1733 Assessment of Excitotoxicity Risk Using Human iPSC-Derived Glutamatergic Neurons.

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Y. Chen, A. Ndifor, and J. McDuffie.

Janssen Research & Development LLC, San Diego, CA.

Thursday, March 16

8:30 AM to 11:45 AM

CC Exhibit Hall

Poster Session: Emerging Technologies

#3226 Excitatory Pharmacology Induces Seizurogenic Phenotypes in iPSC-Derived Neuronal Cultures In Vitro.

P194

K. Kim, C. Carlson, T. Feaster, C. Kannemeier, B. Swanson, B. Anson, and K.P. Mangan.

Cellular Dynamics International, Madison, WI.

8:30 AM to 11:45 AM

Hall A

Poster Session: Late-Breaking Poster Session

#3346 CiPA Phase 2 as a context for development and cross-site validation of automated MEA approaches for cardiomyocytes.

P316

J.D. Heidmann¹, D.C. Millard², A.M. Nicolini², S.A. Chvatal², M. Tabrizid¹, J.D. Ross², M. Brock¹

¹Genentech Inc., 1 DNA Way, South San Francisco, CA 94080; ²Axion Biosystems, Inc., Atlanta, GA, USA

#3348 **Evaluating the Arrhythmic Potential of Vanoxerine in Human iPSC Derived Cardiomyocytes on a Multiwell MEA.**

P318

C.J. Strock.

Cyprotex US, LLC. Watertown, MA.

#3481 **In Vitro Astrocyte Model to Assess Tetramethylene-disulfotetramine (TETS)-Induced Neuroinflammation.**

P454

K.M Truong, I.N. Pessah

Department of Molecular Biosciences, School of Veterinary Medicine, University of California, Davis, CA, USA.



#3484 **Human Induced Pluripotent Stem Cell-derived Glutamatergic Neurons: Evaluating Maturation and Neurotoxic Predictability in the Presence or Absence of GABAergic Neurons and Astrocytes Using a Microelectrode Array Platform.**

P457

J.A. Bradley¹, K. Magnin², C. Kannemeier², B. Swanson², C.J. Strock¹.

¹Cyprotex US, LLC. Watertown, MA; ²Cellular Dynamics International, A FujiFilm Company, Madison, WI