## Symposium and Nanosymposiums

### Tuesday, November 6

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<th>Session</th>
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<td>447.05</td>
<td>Reduction of Alpha-Synuclein in Human iPSC-Derived Dopaminergic Neurons Harboring the A53T Mutation as a Therapeutic Strategy for Parkinson’s Disease</td>
<td>J. D. Graef, V. Villegas, A. M. Cacace</td>
<td>Fulcrum Therapeut., Cambridge, MA</td>
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### Tuesday, November 6

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<th>Session</th>
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Wednesday, November 7

8:00 AM to 11:30 AM | SDCC 30E

SESSION 624 – STEM CELLS AND DISEASE MODELING: NEURODEVELOPMENT

624.04 High Throughput Screening of hiPSC-Derived Brain Organoids to Probe for Phenotypes in Idiopathic Autism

8:45-9:00


The Hussman Inst. for Autism, Baltimore, MD; Hussman Inst. for Autism, Baltimore, MD; The Hussman Inst. For Autism, Sykesville, MD

624.09 Network and Molecular Changes During Neuronal Differentiation in iPSC Derived from Idiopathic Autism Patients

10:00-10:15

Y. Kim, D.N. Amatya, S.B. Linker, C. Marchetto, F.H. Gage

Child Adolescent Psychiatry, Natl. Ctr. for Mental Hlth., Seoul, Korea, Republic of; Lab. of Genet., LOG-G, Salk Inst., La Jolla, CA; Lab. of Genet., Salk Inst. For Biol. Studies, La Jolla, CA

624.10 Altered Network Connectivity in Rett Syndrome Stem Cell-Derived Cortical Neuron Networks

10:15-10:30

R. S. Mok, L. Duong, M. Mufteev, D. C. Rodrigues, L. Dejong, W. Wei, A. Piekna, P. Pasceri, J. C. Martinez-Trujillo, J. Ellis

Developmental & Stem Cell Biol., Hosp. for Sick Children, Toronto, ON, Canada; Robarts Res. Inst., London Ontario, ON, Canada; Physiol. and Pharmacol., Univ. of Western Ontario, London, ON, Canada; Developmental & Stem Cell Biol., The Hosp. for Sick Children, Toronto, ON, Canada
Poster Sessions

Saturday, November 3

1:00 PM – 5:00 PM | SDCC Halls B-H
SESSION 040 – EPILEPSY: NETWORKS, DYNAMICS, AND COMPUTATION

# 040.05/F16  Hesi-Neutox Pilot Study: Seizure Liability Assessment Using hiPSC-Derived CNS-like Neural Co-cultures
1:00–2:00  C. Fleming, D. Hess, M. Kennedy, T. Palm, G. C. Luerman
Ncardia Inc, Plymouth Meeting, PA; Ncardia AG, Cologne, Germany; Ncardia AG, Cologne, Germany

# 040.09/F20  Dysregulation and Restoration of Homeostatic Network Plasticity in Fragile X Syndrome Mice
1:00-2:00  D.-C. Liu, K. A. Jewett, K. Lee, S. Soriano, D. E. Eagleman, N.-P. Tsai
Neurosci., Univ. of Illinois Urbana-Champaign, Champaign, IL; Dept. of Mol. and Integrative Physiology, Sch. of Mol. and Cell. Biol., Neurosci. Program, Univ. of Illinois at Urbana-Champaign, Champaign, IL

Saturday, November 3

1:00 PM – 5:00 PM | SDCC Halls B-H
SESSION 052 - NEUROMUSCULAR DISEASES: MOTOR NEURON DISEASE: IN VITRO STUDIES

# 052.16/X6  Phenotypic Functional In Vitro Screening of Patient iPSC-Derived Motor Neurons Used for In Vitro HTS Disease Modeling with AI-based Analysis of Microelectrode Array Data
4:00-5:00  B.M. Bader, M. Segura Castell, K. Juegelt, M.L. Hendrickson, L. Schultz, O.H.-U. Schroeder
NeuroProof GmbH, Rostock, Germany; BrainXell, Inc., Madison, WI
Sunday, November 4

8:00 AM – 12:00 PM | SDCC Halls B-H

SESSION 123 - SODIUM CHANNELS

# 123.13/F21 Enhancement of Multi-Electrode Array “Pain-in-a-Dish” Assays by Adding Optogenetic Stimulation
8:00-9:00 M. R. Estacion, T. Adi, P. Zhao, L. Macala, S. D. Dib-Hajj, S. G. Waxman

Neurol, Dept. of Neurol., Yale Univ. Sch. of Med., New Haven, CT; Ctr. for Neurosci. and Regeneration Res., Veterans Affairs Med. Ctr., West Haven, CT; Dept Neurol, Yale Univ. Med. Sch., West Haven, CT; Neurol., Yale Univ., New Haven, CT; Dept Neurol, Yale Sch. of Med. and VAMC, West Haven, CT; Neurol., Yale University, Neurosci. and Regeneration Res. Ctr., West Haven, CT

# 123.19/G1 A Novel Gain-of-Function Nav1.7 Mutation in a Carbamazepine-Responsive Patient with Adult-Onset Non-Length-Dependent Small Fiber Neuropathy
10:00-11:00 T. Adi, M. Estacion, S. Vernino, S. D. Dib-Hajj, S. G. Waxman


Sunday, November 4

1:00 PM – 5:00 PM | SDCC Halls B-H

SESSION 196 – STEM CELLS AND NEURAL DIFFERENTIATION

# 196.05/B1 Spontaneous Functional Network Activity in Organoids Resembles Programmed Early Human Brain Development
1:00-2:00 C.A. Trujillo, R. Gao, P. Negraes, I.A. Chaim, A. Domissy, M. Vandenbarghe, A. Devor, G.W. Yeo, B. Voytek, A.R. Muotri

Pediatrics, Cognitive Sci., Cell. & Mol. Med., ✂ Radiology, Univ. of California - San Diego, La Jolla, CA
# 196.14/B10 Network Activity Development of Cultured Cortical Neurons: Comparison Between Embryonic Rat and Human Pluripotent Stem Cell-Derived Systems

2:00-3:00  T. Hyvarinen, A. Hyysalo, E. Kapucu, L Yla-Outinen, S. Narkilahti

BioMediTech and Fac. of Med. and Life Sci., Univ. of Tampere, Tampere, Finland; Dept. of Biomedicine, Danish Res. Inst. of Translational Neurosci. - DANDRITE, Aarhus Univ., Aarhus, Denmark

Sunday, November 4

1:00 PM – 5:00 PM | SDCC Halls B-H

SESSION 198 – GLUTAMATE TRANSPORT AND SIGNALING

# 198.03/C11 Nordihidroguairaetic Acid (NDA) Increases Hippocampal Synaptic Density and Enhances Excitatory Amino Acid Transporter 2 (EAAT2) Function

3:00-4:00  L. Fourgeaud, A.W. Harrington, Q. Wang, G. Woodruff, N. Phillips, P. Bonaventure, A. Bhattacharya

Neurosci., Janssen Res. And Develo., San Diego, CA

Sunday, November 4

1:00 PM – 5:00 PM | SDCC Halls B-H

SESSION 255 – PHYSIOLOGICAL METHODS: OPTOGENETICS II

# 255.13/JJJ10 Simultaneous Multiwell Optogenetic Stimulation and Microelectrode Array Recording for Evaluating Functional Network Electrophysiology In Vitro

1:00-2:00  H.B. Hayes, A.M. Nicolini, C.A. Arrowood, I.P. Clements, D.C. Millard

Axion BioSystems, Atlanta, GA
Monday, November 5

8:00 AM – 12:00 PM | SDCC Halls B-H
SESSION 279 – STEM CELLS AND REPROGRAMMING: NEURAL STEM CELLS: IN VITRO STUDIES

# 279.19/C1 Quantification of Functional Network Electrophysiology from Stem Cell-Derived Neurons with Multiwell Microelectrode Array Technology
10:00-11:00
D.C. Millard, H.B. Hayes, A.M. Nicolini, C.A. Arrowood, M. Clements
Axion BioSystems, Atlanta, GA

Monday, November 5

8:00 AM – 12:00 PM | SDCC Halls B-H
SESSION 301 – PAIN MODELS: PHYSIOLOGY

#301.10/AA6 Modeling Nav1.7 Channelopathies Using CRISPR/Cas9
9:00-10:00
Neurobio., Boston Children’s Hospital/Harvard Med. Sch., Boston, MA; Neurol., VA CT Healthcare Syst., West Haven, CT; Neurol., Yale Univ., West Haven, CT; Dept Neurol, Yale Sch. of Med. and VAMC, West Haven, CT; Neurol., Yale University, Neurosci. and Regeneration Res. Ctr., West Haven, CT; Neurobio., Children’s Hosp. Boston, Boston, MA

Monday, November 5

1:00 PM – 5:00 PM | SDCC Halls B-H
SESSION 366 – STEM CELLS AND DISEASE MODELING II

#366.21/B6 New Methods for Studying Network Activity in Human Induced-Pluripotent Stem Cell (iPSC) Derived Neural Cultures for Modeling Diseases
1:00-2:00  K. Padmanabhan, C. Marchetto, R. Santos, F.H. Gage

Neurosci., Univ. of Rochester, Rochester, NY; LOG-G, Salk Inst., La Jolla, CA; Inst. of Psychiatry and Neurosci. of Paris, INSERM U894 - Univ. Paris Descartes, Paris, France

#366.23/B8  An Epilepsy-Associated Slack Mutation Increases K_{Na} Currents and Enhances Excitability of Human iPSC-Derived Neurons

3:00-4:00  I.H. Quraishi, K.P. Mangan, Y. Zhang, M. Mercier, S. Stern, M.C. Marchetto, F.H. Gage, L.K. Kaczmarek

Dept. of Neurol., Dept. of Pharmacol., Departments of Pharmacol. and Cell. and Mol. Physiol., Yale Sch. of Med., New Haven, CT; Cell. Dynamics, Intl., Madison, WI; Lab. of Genet., Salk Inst., La Jolla, CA

Monday, November 5

1:00 PM – 5:00 PM | SDCC Halls B-H
SESSION 379 – ALS MECHANISMS

#379.14/K4  Synaptic Deficits in c9orf72-als/ftd Patient-Derived Human Stem Cell Differentiated Neurons and In Vivo Models of c9orf72

2:00-3:00  I. Lorenzini, L. Ghaffari, D. Lall, J. Levy, C. Burciu, D. Bhatia, N. Twishime, D. Shenoy, R. H. Baloh, R. G. Sattler


Monday, November 5

1:00 PM – 5:00 PM | SDCC Halls B-H
SESSION 431 – PHYSIOLOGICAL METHODS: ELECTROPHYSIOLOGY: ELECTRODE ARRAYS I

#431.27/MMM1  Electrode Array Platform for Transcutaneous Neural Recording and Stimulation

3:00-4:00  I.P. Clements, A.B. Harrison, A.C. Willsie, A.J. Preyer, A. Brown, J.D. Ross

Axion BioSystems, Atlanta, GA
Tuesday, November 6

8:00 AM – 12:00 PM | SDCC Halls B-H

SESSION 460 – EPILEPSY: ION CHANNELS

# 460.11/C37 Dyshomeostatic Mechanisms of KCNQ2-Related Epileptic Encephalopathy in Patient-Specific iPSC-Derived Excitatory Neurons

10:00-11:00 D. Simkin, T.J. Searl, J.J. Millichap, B.N. Piyevsky, G.L. Robertson, M. Forrest, P. Penzes, A.L. George Jr., E. Kiskinis

Pharmacol., Neurol., Epilepsy Ctr. and Div. of Neurology, Department of Pediatrics and Neurology, Ann & Robert H., Physiol., Northwestern University, Feinberg Sch. of Med., Chicago, IL

Tuesday, November 6

8:00 AM – 12:00 PM | SDCC Halls B-H

SESSION 474 – NEUROTOXICITY, INFLAMMATION, AND NEUROPROTECTION: MECHANISMS OF NEUROTOXICITY I

# 474.04/S9 Evaluation of hiPSC-Derived Neuronal Cultures for Safety Assessment of Potential Therapeutic Compounds Against Zika Virus

11:00-12:00 F. Zanella, I. Slavin, S. Dea, S. Montefusco, J. Siqueira-Neto, C. Carromeu

Stemonix, San Diego, CA; Vertex Pharmaceuticals, San Diego, CA; Stemonix, San Diego, CA; UCSD, San Diego, CA

Tuesday, November 6

8:00 AM – 12:00 PM | SDCC Halls B-H

SESSION 520 – NEW BEHAVIORAL, IN VIVO, AND IN VITRO PHYSIOLOGICAL METHODS
# 520.19/JJJ63 Highly Homogenous and Highly Functional 3-Dimensional Human Cortical Spheroids Applied to High Throughput and High Content Screening Platform in Drug Discovery
10:00-11:00 C. Carromeu, S. Dea, S. Biesmans, S. Mora-Castilla, S. Romero, A. Saleh, F. Zanella

*Stemonix, San Diego, CA*

**Tuesday, November 6**

**1:00 PM – 5:00 PM | SDCC Halls B-H**

**SESSION 550 – NEUROGENESIS AND GLIOGENESIS: NEURONAL DEVELOPMENT II**

# 550.24/A24 Hippocampal Neurons from Human Pluripotent Stem Cells Enables Modeling of Connectivity *In Vitro*
4:00-5:00 A. Sarkar, A. Mei, S. Stern, A. C. M. Paquola, M. Sokhirev, H. Kim, F. H. Gage

*Lab. of Genetics-Gage, Salk Inst., La Jolla, CA*

**Tuesday, November 6**

**1:00 PM – 5:00 PM | SDCC Halls B-H**

**SESSION 563 – MECHANISMS OF SEIZURE GENERATION AND EPILEPSY**

# 563.26/L3 Aberrant Network Activities in Neural Cultures from Patients with Chronic Mountain Sickness
2:00-3:00 H. Yao, H. W. Zhao, W. Wu, J. Wang, P. D. Negraes, A. R. Muotri, G. G. Haddad

*Dept Pediat, UCSD, La Jolla, CA; Pediatrics/Cellular Mol. Med., Dept Neurosci, UCSD, La Jolla, CA; The Rady Children’s Hosp., San Diego, CA*
Wednesday, November 7

8:00 AM - 12:00 PM | SDCC Halls B-H

SESSION 641 – DEVELOPMENTAL DISORDERS: ANIMAL MODELS OF NEURODEVELOPMENTAL DISEASE III

# 641.02/C25  Genomic Aberrations in Embryonic Neural Progenitor Cells May Underlie Cellular Pathologies of Lysophosphatidic Acid Induced Hydrocephalus in Mice
9:00-10:00  W.S. McDonald, J. Chun
Sanford Burnham Prebys Med. Discovery Inst., La Jolla, CA

Wednesday, November 7

8:00 AM - 12:00 PM | SDCC Halls B-H

SESSION 648 – SYNAPTIC TRANSMISSION: MODULATION: MECHANISMS OF ACTION

# 648.22/H8 - Human Induced Pluripotent Stem Cell (hiPSC)-Derived Motor Neurons Co-Cultured with Primary Astrocytes Exhibit Functional Network Sensitivity to Botulinum Neurotoxin
9:00-10:00  B. J. Black, J. J. Pancrazio
The Univ. of Texas At Dallas, Dallas, TX

Wednesday, November 7

8:00 AM - 12:00 PM | SDCC Halls B-H

SESSION 652 – GLIAL MECHANISMS : GLIA-NEURON INTERACTIONS : CNS

# 652.29/M9 - Molecular Mechanisms of Astrocyte-Neuron Interactions in the Development of Synchronized Activity in Neuronal Networks
8:00-9:00  G. Guevara, K. R. Sanchez, J. Sun, M. A. Harrington, M. Temburni
Biol., Delaware State Univ., Dover, DE
Wednesday, November 7

8:00 AM - 12:00 PM | SDCC Halls B-H
SESSION 700 – PHYSIOLOGICAL METHODS: ELECTROPHYSIOLOGY: ELECTRODE ARRAYS II

# 700.07/LLL10  Trial for Drug-Induced Seizure Liability Evaluation Using Microelectrode Array and Primary Rodent Neurons: Multi-site Pilot Study of HESI NeuToxMEA Subteam

10:00-11:00  N. Miyamoto, A.Ojima, S. Inaba, T. Yoshinaga

EISAI Co., Ltd., TSUKUBA, Japan; Tsukuba branch, Techno Pro R&D company, Techno Pro Inc., Tsuchiura, Japan

Wednesday, November 7

1:00 PM - 5:00 PM | SDCC Halls B-H
SESSION 727 – ANGELMAN AND OTHER DEVELOPMENT DISORDERS

# 727.02/B21  The Enteric Nervous System in Rett Syndrome

2:00-3:00  S.C. Schock, G. Wahba, P. Humphreys, E. Nizalik, W. Staines, D. Grynspan

Res. Inst., Div. of Neurol., Pathology, Children’s Hosp. of Eastern Ontario, Ottawa, ON, Canada; Cell. and Mol. Med., Univ. of Ottawa, Ottawa, ON, Canada