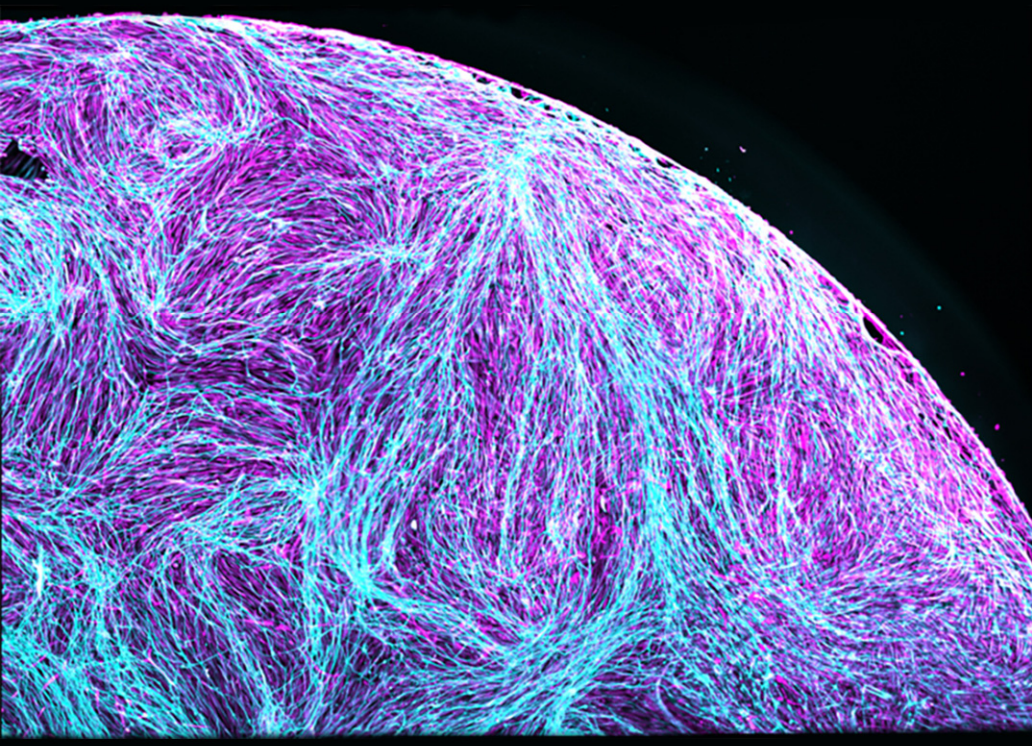
Abstracts of papers presented
at the 2020 *virtual* meeting on

NEURODEGENERATIVE DISEASES: BIOLOGY & THERAPEUTICS

December 2–December 4, 2020



Cold Spring Harbor Laboratory
MEETINGS & COURSES PROGRAM

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NEURODEGENERATIVE DISEASES: BIOLOGY & THERAPEUTICS

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Arranged by

Aaron Gitler, *Stanford University*
Richard Ransohoff, *Third Rock Ventures*
Scott Small, *Columbia University*
Li-Huei Tsai, *Massachusetts Institute of Technology*

CSH Cold Spring Harbor Laboratory
MEETINGS & COURSES PROGRAM

Inhibition of α-synuclein fibrillogenesis by diphenyl triazine hybrids—Design, synthesis and in-vitro efficacy studies
Joshna Gadhavi, Mudasir Maqbool, Pravin Hivare, Sharad Gupta, Nasimul Hoda.
Presenter affiliation: Indian Institute of Technology Gandhinagar, Gandhinagar, India.
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Intravascular delivery of neural precursors improves memory impairment in mouse models of Alzheimer's disease
Nazaret Gamez Ruiz, Enrique Armijo Fuentes, Ruben Gomez Gutierrez, Claudio Soto, Ines Moreno Gonzalez.
Presenter affiliation: The University of Texas Health Science Center at Houston, Houston, Texas; Universidad de Malaga, Malaga, Spain.
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ApoE4 disrupts insulin signaling in N2A neuroblastoma cells
Chase Garcia, Alexey Tomilov, Gino Cortopassi.
Presenter affiliation: UC Davis School of Veterinary Medicine, Davis, California.
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Human pluripotent stem cells as a research tool for elucidating the role of glial cells in Alzheimer´s disease
Juan Antonio García León, Laura Caceres Palomo, José Carlos Dávila, Javier Vitorica, Antonia Gutiérrez.
Presenter affiliation: University of Malaga/IBIMA/CIBERNED, Málaga, Spain.
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Quantitative analysis of early endosome pathology in young and aged Ts65Dn mice following maternal choline supplementation (MCS) using 3D reconstructed z-stacks
Megan K. Gautier, Christy M. Kelley, Elliott J. Mufson, Stephen D. Ginsberg.
Presenter affiliation: Nathan Kline Institute, Orangeburg, New York; NYU School of Medicine, New York, New York.
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Can zebrafish (*Danio rerio)* produce amyloid beta peptide? Expressing tagged forms of Appa and Appb *in vivo*
Ewan Gerken, Morgan Newman, Michael Lardelli.
Presenter affiliation: Alzheimer's Disease Genetics Laboratory, Adelaide, Australia.
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HUMAN PLURIPOTENT STEM CELLS AS A RESEARCH TOOL FOR ELUCIDATING THE ROLE OF GLIAL CELLS IN ALZHEIMER´S DISEASE

Juan Antonio García León[1*#], Laura Caceres Palomo[1*], José Carlos Dávila[1], Javier Vitorica[2], Antonia Gutiérrez[1#]

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Background:
Alzheimer's disease (AD) is characterized by presenting a complex pathology, not fully resolved yet. This fact, together with the lack of reliable models, has impeded the development of effective therapies. Recently, several studies have shown that functional glial cell defects have a key role in the pathology of AD. However, this glial dysfunction, currently, cannot be correctly modeled using the available animal models, so we hypothesized that cells derived from Alzheimer's patients can serve as a better platform for studying the disease. In this sense, human pluripotent stem cells (hPSC) allow the generation of different types of neural cells, which can be used for disease modeling, identification of new targets and drugs development.
Methods:
We have a collection of hiPSCs derived from patients with sporadic forms of AD. We have differentiated these cells towards neural lineage to obtain neurons and astrocytes. For the generation of oligodendrocytes (OLs), we have developed a fast and robust protocol to generate mature OLs in just 22 days.
Results:
We have generated neural precursors from all the lines tested. In the case of OLs, the cells generated resemble primary OLs and can myelinate neurons in vivo and in vitro using a screening compatible platform. This platform is being transferred for the generation of the other glial cells.
Conclusions:
This methodology can be used to elucidate the pathogenic pathways associated with neurodegeneration and to identify new therapeutic targets susceptible to modulation, contributing to the development of new effective drugs against AD.
Acknowledgments:
J.A.G.L has been supported by a contract of doctor reincorporation plan from the I Plan Propio of the University of Malaga (Spain) and by CIBERNED. This study was supported by Instituto de Salud Carlos III (ISCiii) of Spain, co-financed by FEDER funds from European Union, through grants PI18/01557 (to AG), PI18/01556 (to JV), and CIBERNED (CB06/05/1116 to AG and CB06/05/0094 to JV); by Junta de Andalucia through Consejería de Economía y Conocimiento grants UMA18-FEDERJA-211 (to AG), PY18-RT-2233 (to AG) and US-1262734 (to JV) co-financed by Programa Operativo FEDER 2014-2020 and Consejeria de Salud grant PI-0276-2018 (to JAGL).