

NECTAR 2022



32nd Annual meeting
of the Network for European CNS
Transplantation and Restoration

nectar-athens22.gr



24-26
OCTOBER
2022

P R O G R A M M E

MONDAY 24 October 2022

12:00-13:30 Registration

13:15-13:30 Opening - Welcome

13:30-14:30 Plenary I

Chairs: **Romina Aron Badin**, **Rebecca Matsas**

Nissim Benvenisty, *The Azrieli Center for Stem Cells and Genetic Research, The Hebrew University of Jerusalem, Israel*
The Essentialome of Human Development and Disease

14:30-16:00 Session 1

Clinical trials

Chairs: **Anders Bjorklund**, **Achille Gravanis**

Tilo Kunath, *Institute for Stem Cell Research, University of Edinburgh, UK*
Tool kit for dopaminergic progenitor cell production

Jun Takahashi, *CiRA-Kyoto University, Japan*
R&D of iPS cell-based therapy for stroke

Steven Goldman, *Centre for Translational Neuromedicine, University of Rochester & University of Copenhagen Faculty of Health and Medical Sciences, Denmark*
Challenges towards clinical translation of cell therapies for Huntington's disease

16:00-16:30 Coffee

e-Posters session I Chair: **Athanasios Kollias**

MONDAY 24 October 2022

16:30-18:30 Session 2

Advances in CNS disease modeling

Chairs: **Tilo Kunath**, **Era Taoufik**

Jens Schwamborn, *Luxembourg Centre for Systems Biomedicine, Luxembourg*

Modeling Parkinson's disease with human midbrain organoids

Achille Gravanis, *School of Medicine University of Crete & Institute of Molecular Biology and Biotechnology, Crete, Greece*

Designing brain-on-chip platforms for simulating human brain function and malfunction'

Evangelos Kiskinis, *Feinberg School of Medicine, Northwestern University, Chicago USA*

Artificial Extracellular Matrix Scaffolds Enhance Maturation and Ageing of Human Stem Cell-Derived Neurons and Enable the Modeling of Neurodegenerative Disease Pathology

Alessandro Fiorenzano, *Lund Stem Cell Center, Sweden*

Modeling dopamine neuron specification and diversity using human stem cell-based technologies

18:30-19:30 Plenary II

Chair: **Evangelos Kiskinis**

Lee Rubin, *Harvard Stem Cell Institute, USA*

Disease modeling and phenotypic drug screening

19:30 Welcome Reception

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ATHENS GREECE

COTSEN HALL

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TUESDAY 25 October 2022

09:00-11:00 Session 3

Neuroinflammation and glial cells in neurodegenerative diseases

Chairs: **Chiara Zurzolo**, **Florentia Papastefanaki**

Malú Gámez Tansey, *Center for Translational Research in Neurodegenerative Disease, University of Florida College of Medicine, Gainesville, USA*

Inflammation and immune dysfunction in Parkinson disease

Stefano Plucino, *Dept of Clinical Neurosciences, University of Cambridge, UK*

Molecular fuels and drivers of smouldering disease in progressive multiple sclerosis

Era Taoufik, *Hellenic Pasteur Institute, Athens, Greece*

Neuroinflammation and astrocytes in Parkinson's disease

Jari Koistinaho, *Neuroscience Center, Helsinki Institute of Life Science HiLIFE, Finland*

Modelling the impact of glial cells in Alzheimer's disease and schizophrenia by iPSC-derived cells

11:00-11:25 Coffee

e-Posters session II

Chair: **Olympia Apokotou**

11:25-12:10 Data Blitz session I

Chair: **Charlotte Bridge**

12:10-13:00 Plenary III

Chair: **Malú Gámez Tansey**

Ido Amit, *Weizmann Institute of Science, Israel*

The power of ONE: Immunology in the age of single cell genomics

13:00-14:00 Lunch

TUESDAY 25 October 2022

14:00-16:00 Session 4

Preclinical cell/gene therapies in neurological disorders I

Chairs: **Ellis Dowd**, **Andreas Heuer**

Olivier Goureau, *Institut de la Vision, Sorbonne Université, INSERM, CNRS Paris, France*

Pluripotent stem cell-based therapy for outer retinal diseases

Sandro Alves *BrainVectis - Askbio, Institut du Cerveau (ICM), Paris, France*

Restoration of brain cholesterol metabolism as gene therapy approach for Huntington's Disease

Luís Pereira de Almeida, *Center for Neuroscience and Cell Biology, University of Coimbra, Portugal*

Therapeutic strategies for spinocerebellar ataxia type 3

Dimitra Thomaidou *Hellenic Pasteur Institute, Greece*

Direct astrocyte to neuron reprogramming: towards a therapeutic strategy for brain injuries

16:00-16:35 Data Blitz session II

Chair: **Panagiotis Chandris**

16:35-17:00 Coffee

e-Posters session III Chair: **Elpiniki Ninou**

17:00-18:00 Special Session

Patient Advocacy

Chairs: **Emma Lane**, **Cheney Drew**

Benjamin Stecher, *Chair of the Patient Advisory Board (PAB), Rune Labs, San Francisco, USA*

What Patient Advocacy Can Do

18:00-20:00 Session 5

Preclinical cell/gene therapies in neurological disorders II

Chairs: **Stefano Pluchino**, **Dimitra Thomaidou**

Malin Parmar, *Wallenberg Neuroscience Center & Lund Stem Cell Center, Sweden*

Reprogramming as a regenerative therapy in PD

Sabah Mozafari, *ICM Paris, Sorbonne University France*

Potential of Multiple Sclerosis iPS-derived oligodendroglia to functionally interact with axons and glia in vivo

Clive Svendsen, *Cedars-Sinai Regenerative Medicine Institute, Los Angeles, USA*

Stem cell therapies for amyotrophic lateral sclerosis

Mark Tuszynski, *University of California San Diego, USA*

Neural Stem Cell Therapy for Spinal Cord Injury

21:00 Conference Dinner

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WEDNESDAY 26 October 2022

09:00 - 09:30 Data Blitz session III

Chair: Katerina Segklia

09:30 - 10:30 Session 6

Companies/Biotech

Chairs: Tilo Kunath, Clive Svendsen

XONA Microfluidics

Assay development and improving reproducibility using microfluidic compartmentalized devices

Ann Taylor, Chief Scientific Officer, Xona Microfluidics, Inc., USA

Novo NORDISK

How to bring cell therapy from research to patients?

Good collaboration between academia and pharma companies can be the key for bringing cell therapy from research to patients

Ida Stenfeldt Mathiasen, Project Director Clinical Pharmacology, Novo Nordisk

Anne Møller Nielsen, MD, PhD, International Medical Director, Novo Nordisk

AXOL Biosciences

HiPSC derived Microglia-like cells as a model for Neurodegenerative diseases

Vijitha Sathiaselan, Group Leader, Axol Biosciences

10:30 -11:00 Data Blitz session IV

Chair: Elsa Papadimitriou

11:00-11:30 Coffee

e-Posters session IV Chair: Elissavet Akrioti

WEDNESDAY 26 October 2022

11:30-13:30 Session 7

Disease mechanisms

Chair: **Scott Ryan, Rebecca Matsas**

Frederic Saudou, *Institut Neurosciences, Grenoble, France*
Molecular mechanisms in Huntington's disease

Magdalini Polymenidou, *University of Zurich, Switzerland*
RNA-RBP interactions/ phase separation in neurodegenerative diseases

Chiara Zurzolo, *Institut Pasteur, Paris, France*
Disease spreading through tunneling nanotubes

Maria Xylouri, *Biomedical Research Foundation of the Academy of Athens, Greece*
Untangling the mechanisms underlying Multiple System Atrophy pathogenesis

13:30 -14:00 Closing remarks - Departure

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DATA BLITZ

Data Blitz session I

1

Peripheral Immune Cells Induce Reactive Phenotype in Human iPSC-derived Midbrain Astrocytes
Mrs Adina MacMahon Copas, Trinity College Dublin, Ireland

2

Investigating the role of alpha-synuclein in neuronal innate immunity and its role in the interferon response pathway
Mr Andrew Chai, University of Edinburgh, United Kingdom

3

Seeding of α -syn pathology in vivo involves the autophagy protein LC3
Prof. Scott Ryan, University Of Guelph, Canada

4

Developing assays for neuronal cell replacement in Parkinson's Disease and advancing next generation therapeutics
Dr Jonathan Niclis, ¹Novo Nordisk, Copenhagen, Denmark

5

Enhanced Production of Mesencephalic Dopaminergic Neurons from Lineage-Restricted Human Undifferentiated Stem Cells
Dr Mark Denham, Aarhus University, Denmark

6

p.A53T- α Syn iPSC-derived astrocytes from Parkinson's disease patients display intrinsic pathology and affect dopamine neuron viability
Christina Paschou, Hellenic Pasteur Institute, Athens, Greece

7

A Three-Dimensional Co-Culture Model of iPSC Derived Human Astrocytes and Interneurons
Andreas Bruzelius, Lund University, Sweden

Data Blitz session II

8

Myelin regeneration as a potential therapeutic target in Alzheimer's Disease
Ioanna Zota, **Konstantina Chanoumidou,** University of Crete- IMBB-FORTH, Heraklion, Greece

9

Neurotrophin-enriched hydrogels improve human iPSC-derived dopaminergic graft survival and differentiation in athymic nude rats, but not in cyclosporine immunosuppressed rats
Tommy Patton, University Of Galway, Ireland

10

Potential of viral-vector delivery of BMP2 as a Neurotrophic Therapy for Parkinson's Disease
Noelia Morales-Prieto, University College Cork, Ireland

11

Exploring direct lineage reprogramming of human glia to neurons in vitro and after transplantation in a rat model

Mette Habekost, Lund University, Sweden

12

Synuclein aggregates drive different microglial responses to host-to-graft pathology in stem cell-derived transplants in a humanized graft model of PD

Sara Corsi, Lund University Sweden

13

Investigation of the functional integration of hESC-derived grafts in models of Huntington's disease

Patricia Garcia Jareño, Cardiff University, United Kingdom

Data Blitz session III

14

Novel AAV Capsid Variants Targeting Human Glia

Jessica Giacomoni, Lund University, Sweden

15

Allogeneic Regenerative Cell Therapy for White Matter Stroke and Vascular Dementia

Irene L. Llorente, UCLA, USA

16

CSF and serum biomarkers in human neural stem cell-treated Secondary Progressive Multiple Sclerosis patients

Giada D'Aloisio, Casa Sollievo Della Sofferenza, San Giovanni Rotondo, Italy

17

Modelling Familial ALS Pathology In Vivo

Georgia Eleftheriou, Florey Institute of Neuroscience & Mental Health, Melbourne, Australia

18

Glial dysregulation and SVZ neurogenesis disruption following brain chemical lesion

Irini Thanou, Hellenic Pasteur Institute, Athens, Greece

Data Blitz session IV

19

Bacterial DING proteins in blood serum of Alzheimer's disease and Mild Cognitive Impairment patients and correlation with A β 42 and COX-1/2

Eleni Andreadou, Aristotle University of Thessaloniki, Greece

20

Using biomaterials to provide local immunosuppression for CNS cell transplantation

Emily Atkinson, University College London, United Kingdom

21

Towards the generation of better Parkinson's in vitro models: human LMX1A tracing line for culture enrichment on mDA neural progenitors

Lucia F. Cardo, Dementia Research Institute at Cardiff, UK

22

Can viral-mediated dopamine synthesis alleviate cognitive impairments in Parkinson's Disease?

Charlotte Bridge, Cardiff University, United Kingdom

23

Cholesterol based-strategies lead to a complete and long-standing recovery of cognitive and motor defects in Huntington's disease mouse models

Marta Valenza, University of Milan, Italy

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e-POSTERS

e-Poster session I

P1

Peripheral administration of the Class-IIa HDAC inhibitor MC1568 partially protects against nigrostriatal degeneration in the striatal 6-OHDA rat model of Parkinson's disease

Martina Mazzocchi, Ucc, Cork, Ireland

P2

The Edinburgh Human Progenitor Cell Bank: Cryopreserved iPSC-derived progenitor cells for the neuroscience community

Michela I. Barbato, University of Edinburgh, United Kingdom

P3

Human iPSC-derived reactive astrocytes display an altered metabolic profile compared to quiescent-like astrocytes

Sarah F. McComish, Trinity College Dublin, Ireland

P4

Functional characterization of stem cell-derived dopamine neurons for the treatment of Parkinson's Disease

Ryan Smith, BlueRock Therapeutics, New York, United States

P5

The p.A53T α -synuclein mutation causes dopaminergic neuron deficit in patient-derived midbrain organoids

Olympia Apokotou, Hellenic Pasteur Institute, Athens, Greece

e-Poster session II

P6

Secondary progressive multiple sclerosis: in vitro effect of cerebrospinal fluid on human neural stem cells behavior and immunomodulatory molecules production

Lucrezia Abate, Ospedale Casa Sollievo Della Sofferenza, San Giovanni Rotondo, Italy

P7

Intracerebroventricular transplantation of Neural Stem Cells in an experimental model of Amyotrophic Lateral Sclerosis

Ivan Lombardi, University of Milano-Bicocca, Italy

P8

Defining the consequence of LRRK2 dysregulation in human ESC-derived astrocytes

Aine Heffernan, University of Edinburgh, UK

P9

The hidden roles of SLITRK5 in p.A53T- α Syn synaptic dysfunction

E.K. Akrioti, Hellenic Pasteur Institute, Athens, Greece

e-Poster session III

P10

Exploring the neuro cardiac axis - Defining local mechanisms and long-range signals that promote organ regeneration

Vasiliki Tsata, Biomedical Research Foundation of the Academy of Athens, Greece

P11

Age-related neuronal autophagy changes in induced neurons

Mr Balázs Kis, Hcemm-su Neurobiology & Neurodegenerative Diseases Research Group, Budapest, Hungary

P12

The LEARN study: using participant experience to improve trial design for neurodegenerative diseases

Drew C.J.G., Cardiff University, UK

P13

Longitudinal Behavioural Characterisation of a Transgenic Rat Model of Huntington's Disease

Olivia Edwards, Cardiff University, UK

P14

Mirk/Dyrk1B kinase controls the generation and columnar organization of spinal motor neurons in the embryonic chick spinal cord via Sonic hedgehog pathway

Kokkorakis N., Hellenic Pasteur Institute, Athens Greece

e-Poster session IV

P15

Extra Virgin Olive Oil (EVOO) attenuates LPS-induced inflammatory effect on a 2D model of neuroblastoma and glioblastoma murine cells

Tzekaki E., Aristotle University of Thessaloniki, Greece

P16

Alleviating Effect of Curcumin and a V (IV) – Curcumin complex on LPS-Induced Inflammation in Murine Mixed Neuroblastoma-Glioblastoma Cultures

Tzekaki E., Aristotle University of Thessaloniki, Greece

P17

Molecular lineage tracing of stem cell derived dopamine grafts in vivo reveals a shared origin of all graft-derived cells

Petter Storm, Lund University, Sweden

P18

Disrupted hippocampal neurogenesis and increased neuroinflammation following brain chemical lesion

Mirka Fourmouzi, Hellenic Pasteur Institute, Athens, Greece

P19

The inhibition and activation of Notch signaling upon differentiation of human induced pluripotent stem cells to dopaminergic precursors

Katolikova Nataliia Victorovna, Saint-Petersburg State University, Russia