2:30 p.m. **PLENARY LECTURE** Room U8-04

NEXT GENERATION OF NEURONAL CULTURES: MODELLING THE BRAIN WITH HUMAN iPSCs DERIVED NEURONS IN SELF ASSEMBLED ORGANOIDS AND 3D BIOPRINTED CONSTRUCTS

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In the drug development process only one molecule in 10,000 completes the cycle and becomes a marketable drug. This is at least partially due to the fact that pre-clinical studies are carried out mainly on laboratory animals, which in many cases are not representative of human diseases. Lack of appropriate in vitro models of the human nervous system hampers the development of effective drugs for neurological disorders. Conventional 2D cell cultures fail to represent the complexity of the brain and novel 3D systems are emerging as more realistic and representative models providing valid pre-screening systems for potential drugs. This technology represents also promising tool for personalized medicine,
To date, organoids from iPSCs have been generated by allowing them to self-organize in tridimensional structures during differentiation. This approach is greatly limited by batch issues, affecting the reproducibility of the results. We are trying to overcome this problem by taking advantage of the three-dimensional printing of biological material (3D Bioprinting), to produce iPSC-derived organoids in a more controlled and reproducible way. Combining the two technologies, iPSCs and 3D Bioprinting, We are currently developing cerebral organoids from iPSC-derived neurons that will allow testing potential drugs in terms of efficacy, dosage and toxicity.

In collaboration with the Inter-University Center for the Promotion of the 3Rs Principles in Teaching & Research.

Centro 3R

Visit our website for updates on the activities of the PhD program in Neuroscience

www.neuroscienze.medicina.unimib.it

PhD program in Neuroscience day - 2019

November 11, 2019

9 a.m. PhD students' research projects updates
2:30 p.m. Plenary lecture

School of Medicine and Surgery
Building U8
Via Cadore, 48 - 20900 Monza

PHD PROGRAM IN NEUROSCIENCE
NEUROSCIENZE
DOTTORATO DI RICERCA

UNIVERSITÀ DEGLI STUDI DI MILANO BICOCCA

09:00 a.m. **room U8-07**

PhD students' research projects - an update

09:00 a.m. Opening

Prof. Guido Cavaletti, *coordinator of the PhD program in Neuroscience*

09:10 Oral presentations - cycle 32

Da Re Fulvio - An MRI-based analysis of the longitudinal progression of atrophy in amnestic and non-amnestic phenotypes of Alzheimer's disease

Forcaia Greta - Multifunctional Liposomes modulate Purinergic Receptor-induced Calcium Wave in Cerebral Microvascular Endothelial Cells and Astrocytes

Fumagalli Giulia - The role of Neurofilament Light Chain as a serum biomarker in chemotherapy-induced peripheral neuropathy rodent models

Giurgola Serena - Plastic modulation of the body metric representation: neurophysiological and behavioral evidence

Pozzi Eleonora - Different treatment schedules for the assessment of Oxaliplatin-induced peripheral neurotoxicity with focus on oxidative stress

Varoli Erica - TMS-EEG: a promising tool to study the tDCS effects on cortical excitability

10:40 Poster session* - cycle 34

* Posters on display in the entrance hall, coffee and refreshments available

1. **Alimonti Dario** Motor and cognitive progression in Parkinson's disease
2. **Angiulli Federica** CSF and plasma biomarker of ARIA in patients with cerebral amyloid angiopathy-related inflammation
3. **Diana Lorenzo** Modulation of visuo-spatial attention by means of tDCS: an eye-tracking study
4. **Erol Gizem** Development of in Vitro Methods to Screen Lectin Inhibitors
5. **Galimberti Chiara** CR13626, a novel multi-targeted tyrosine kinase inhibitor for glioblastoma therapy
6. **Massetti Gemma** Using wearable technology to modulate posture
7. **Mauri Maddalena** REMIND: a 15 years follow-up study. The relation between DNA methylation and psychopathology in adolescents: preliminary data
8. **Meanti Ramona** Neuroprotective effects of hexarelin in an in vitro model of ALS
9. **Salsano Ettore** Clinical and genetic characterization of leukodystrophies and genetic leukoencephalopathies in adults: study protocol and preliminary results.
10. **Savinetti Ilenia** Gene Expression Profiling Identifies Specific Signatures in Peripheral Blood Monocytes of Primary Progressive Multiple Sclerosis Patients

11:40 Oral presentations - cycle 33

Bazzini Chiara - Neuroinflammation and Aß toxicity: molecular pathways and possible drug treatments

Boncoraglio Giorgio - Role of Ryanodine Receptor type 3 (RyR3) in ischemic stroke

Bragato Cinzia - Characterization of zebrafish Pompe disease model

Carrozzini Tatiana - Protective effects of coffee metabolites against oxidative stress.

Devoto Francantonio - Neurofunctional biomarkers of obesity and weight loss

Guidali Giacomo - Through the looking glass: Hebbian associative plasticity drives the emergence of motor resonance

Murtaj Valentina - Gender, age and metabolic disfunction as risk factor for neuroinflammatory pathology disease

Sabatini Chiara - Study of CR4056 interactions with the opioid system: deepening the molecular mechanism for new perspective in the pain management