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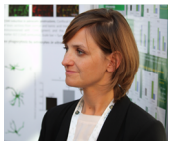

Research Theme: Under Scientific Direction of Prof. Angelo Vescovi, the research projects of our group are aimed at the development of translational and clinical studies in order to support the use of human neural stem cells (hNSCs) for the cure of CNS diseases

Main Research Projects and Expertise:

- Production of Fetal-derived "clinical grade" hNSCs lines: GMP production and certification according to the "Neurosphere Assay", safety tests in animal models and clinical application (Phase I trial for Amyotrophic Lateral Sclerosis (ALS) patients, in collaboration with Prof. Letizia Mazzini; Phase I trial for Multiple Sclerosis):,

  Facilities for GMP-grade hNSCs productions :
  - Cell factory at the Hospital Santa Maria (Terni) – Aut. aM 143/2016 – QP: Dr. Maurizio Gelati
  - Production Unit for Advanced Therapy (UPTA) at Institute for Stem-cell Biology, Regenerative Medicine and Innovative Therapies (ISBReMIT) Casa Sollievo della Sofferenza (Foggia) – Authorization process ongoing – QP: Daniela Profico

  Non-tumorigenicity studies by stereotaxic transplantation into the brain of immunedeficient mice :
  - University Milan-Bicocca. Dep. of Biotechnology and Biosciences – Daniela Ferrari PhD

- Evaluation of the therapeutic potential of hNSCs in animal models of CNS diseases (Parkinson's Disease, Global Cerebral ischemia, Myelin Lesion, Neuropathic pain, ALS SOD1G93A rats): stereotaxic delivery in brain and spinal cord, behavioral analysis, hystological analysis by fluorescent and confocal microscopy (NIKON, Leica)
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- Derivation and characterization of ihNSCs lines from iPS cells from patients suffering from neurodegenerative diseases: virus-free technique, transplantation in animal models and in vitro differentiation protocols

  iPS and ihNSCs production:
  - Cell Reprograming Unit, Mendel Institute (Rome) – P.I.: Jessica Rosati PhD

  Animal models studies:
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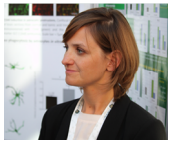
EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY



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Expected benefits and activities during participation in BIONECA:

- Share experience and compare protocols benefits, obstacles and strategies to progress with groups who use stem cells for CNS diseases (e.g. cell transfection, improved tracing protocols, modulation of neuroinflammation, etc)
- Would like to learn from groups who are experienced in image analyses and post-processing
- Would like to learn from groups that have experience in new imaging modalities
- Would like to learn and share experience from groups that work on cell modeling for CNS diseases (differentiation of iPS and Neural Stem cells in motor neurons, astrocytes and microglia)
- Would like to gather innovative combination of partners for new projects` applications and for the organization of multicenter phase II/III clinical trials with neural stem cells in ALS.

Foreseen maximum contribution: in WG4