

WG4: Stem Cells and Neurology *Today: 20 participants*

Chair: *Letizia Mazzini*, University of Novara, Italy

Vice-Chair: *Salvador Martinez Perèz*, University of Alicante, Spain

- The overall aim of this WG is to create a network of clinical and pre-clinical centers in Europe to accelerate the development of stem cell trials for neurodegenerative diseases.
- **Focus Area: Amyotrophic Lateral Sclerosis**

WG4: Stem Cells and Neurology

Main topics

1. **In vitro different cell models** based on human stem cell-derived MNs
2. **SOD1 animal model** (mice, pig)
3. **Different types of supporting MNs trophic factors**
4. **Stem Cell Differentiation and Reprogramming**
5. **Cellular imaging techniques** for visualizing engrafted cells in humans, protocols to label SCs
6. **Standardization of clinical protocols**

WG4: Stem Cells and Neurology



Expert Opinion on Biological Therapy

Invited Review Article:

Advances in stem cell therapy for amyotrophic lateral sclerosis

Letizia Mazzini^a , Daniela Ferrari^b , Pavle R Andjus^c , Leonora Buzanska^d , Fabiola De Marchi^a , Maurizio Gelati^b , Rashid Giniatullin^e , Joel C. Glover^f , Mariagrazia Grilli^g , Elena N. Kozlova^h , Margherita Maioliⁱ , Dinko Mitrecic, Augustas Pivoriunas^m , Rosario Sanchez-Pernauteⁿ , Anna Sarnowska^d , Angelo M. Vescovi^o on behalf of BIONECA COST ACTION WG Neurology

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Review Article

In vivo cell tracking

Joel C Glover

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Prepare a multidisciplinary protocol to be submitted Horizon 2020



EN

Horizon 2020

Work Programme 2018-2020

8. Health, demographic change and wellbeing

WG4: Stem Cells and Neurology

Preliminary Title: **Systematic analyses of neuronal degeneration and reverse effects of stem cells: new avenues to achieve neuro-regeneration by cellular therapy**

PI: Salvador Martinez (Spain)

NEURO-CELL-TER

TOPIC: SC1-BHC-09-2018: Innovation platforms for advanced therapies of the future

Deadline April 18

WG4: Stem Cells and Neurology

Preliminary Title: **Systematic analyses of neuronal degeneration and reverse effects of stem cells: new avenues to achieve neuro-regeneration by cellular therapy**

PI: Salvador Martinez (Spain)

Our strength: CELLULAR THERAPY EXPERTISE. MODELS OF MOTOR NEURODEGENERATIVE DISORDERS. ACCUMULATED CLINICAL EXPERIENCE.

Our originality: CELLULAR THERAPY APPROACH. WHOLE TISSULAR REACTION AGAINST DEGENERATION.

Meeting WG4: Stem Cells and Neurology

Wednesday 7th March 2018
9,00 -11.00

Agenda

1. Presentation of new Members

2. Horizon 2020

1a. Presentation of the project

1b. Discussion on topics and partners

2. New proposals by old and new members of the WG4

Collaborations on new topics

Proposal for grant applications

3. General Discussion

WG4: Stem Cells and Neurology

Main topics

1. **In vitro different cell models** based on human stem cell-derived MNs (human ESC or iPS stem cell-derived mutant or wildtype MNs with functionally connected human stem cell-derived muscle cells from healthy or ALS patients, or with astrocytes) to test pathogenetic mechanisms and the potential therapeutic effects of stem cells from different sources (Elena Kozlova, Joel C. Glover, R. Giniatullin, Pavle Andjus, Andras Dinnyes, D. Ferrari)
2. **SOD1 animal model** (Joel Glover, Pavle Andjus, Salvador Martinez, Daniela Ferrari)
3. **Different types of supporting MNs trophic factors**, including, VEGF, GDNF, CNTF for survival of ALS MNs and implanted stem cells as well as for guiding their differentiation towards MNs (Elena Kozlova)
4. **Stem Cell Differentiation and Reprogramming** (Maiolo M, Ferrari D, Andras Dinnyes, Salvador Martinez)
5. **Cellular imaging techniques** for visualizing engrafted cells in humans, protocols to label SCs (Joel C. Glover, Pavle Andjus, Fabrizio Fiore)
6. **Standardization of clinical protocols** (identify the European clinical centers able to support GCP compliant trials and expert in clinical trials for ALS, standardization of a clinical protocol (L. Mazzini, S. Martinez, Rosario Sanchez, Salvador Martinez, Buzhanska L)