

## Tentative Outline

### Special Thematic Issue for the journal *Current Neuropharmacology (CN)*

#### **Biomaterials for Neurotherapeutics: from lab discovery to clinical application**

*Executive Guest Editor: Qiang Ao,*

*Guest Editor: Aijun Wang*

#### • **Scope of the Thematic Issue:**

Biomaterials are potential tools for improving regenerative repair of injured tissue both in the peripheral and the central nervous system, particularly in regions known for poor recovery of function due in part to severance of anatomical parts and in part to complexity of tissue response. Successful application of biomaterials will require advances in areas ranging from original material identification, synthesis to basic cell biology, tissue engineering and novel clinical approaches. There have also been major hurdles in translating these biomaterial-based advances into clinical applications. Information about materials synthesis, cell-matrix interactions and biomaterial-related clinical case report will aid the development of novel technologies for nerve tissue regeneration. We invite authors to submit comprehensive reviews that seek the relationship between nerve regeneration and biomaterials, including stem cells, extracellular matrix, extracellular vesicles, gene editing materials, etc. We are particularly interested in articles exploring novel technologies and materials for nerve regeneration, new insights in interactions between cell and extracellular components, advances in surface modification and structure reconstruction, and current concept on the biomaterials used for nerve regeneration in the clinic.

**Keywords:** biomaterial; nerve regeneration; cell-matrix interactions; surface modification; structure reconstruction; clinical application

#### **Sub-topics:**

The sub-topics to be covered within the issue should be provided:

- New Materials: characterization, properties and applications
- Protein interactions
- Cell matrix interactions
- Surface modification
- Structure reconstruction
- Controlled release of growth factors/drugs
- Clinical cases related to material performance

#### **Tentative titles of the articles and list of contributors:**

Tentative titles of the articles and list of contributors with their names, designations, addresses and email addresses should be provided.

##### **1. Title: Development of cell-material combined therapeutics for nerve regeneration**

**Ying-Shing Chan, Professor.** School of Biomedical Sciences, LKS Faculty of Medicine, The University of Hong Kong, Hong Kong SAR. Email: [yschan@hku.hk](mailto:yschan@hku.hk)

##### **2. Title: Applications of xenogeneic decellularized extracellular matrix-based biomaterials in nerve tissue engineering**

**Qiang Ao, Professor.** Institute of Regulatory Science for Medical Device, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu 610064, PR China. Email: [aoqiang@tsinghua.edu.cn](mailto:aoqiang@tsinghua.edu.cn)

##### **3. Title: In-vitro, in-vivo and ex-vivo Platforms for Peripheral Nerve Modeling: Current and Future directions**

**Aijun Wang, Professor.** Department of Surgery, University of California, Davis, Sacramento, California 95817,

USA. Email: [aawang@ucdavis.edu](mailto:aawang@ucdavis.edu)

**4. Title: Delivery Approaches for Gene Therapies into the Central Nervous System**

**Kyle D Fink, Assistant Professor**, Department of Neurology & Stem Cell Program, Institute for Regenerative Cures, University of California, Davis Medical Center, Sacramento, California 95817, USA. Email: [kdfink@ucdavis.edu](mailto:kdfink@ucdavis.edu)

**5. Title: Graphene oxide-composited materials in the application of peripheral nerve repair**

**Zhongbing Huang, Professor**. School of Materials Science and Engineering, Sichuan University, Chengdu, 610065, PR China. Email: [zbhuang@scu.edu.cn](mailto:zbhuang@scu.edu.cn)

**6. Title: Mimicking extracellular matrix via engineered nanostructured biomaterials for neural repair**

**Fabrizio Gelain, Dr.** Center for Nanomedicine and Tissue Engineering, ASST Grande Ospedale Metropolitano Niguarda, 20162, Milano, Italy Email: [fabrizio.gelain@ospedaleniguarda.it](mailto:fabrizio.gelain@ospedaleniguarda.it)

**7. Title: current approaches for peripheral nerve regeneration with biomaterials**

**Yunbing Wang, Professor**. National Engineering Research Center for Biomaterials, Sichuan University, Chengdu 610064, PR China. Email: [yunbing.wang@qq.com](mailto:yunbing.wang@qq.com)

**8. Title: Exosomes as promising therapeutic strategies for peripheral nerve injuries.**

**Haruo Hagiwara, Professor**. Department of Anatomy and Cell Biology, Teikyo University School of Medicine, Tokyo, Japan. Email: [hhagiwar@med.teikyo-u.ac.jp](mailto:hhagiwar@med.teikyo-u.ac.jp)

**9. Title: Sustained drug delivery in neural regeneration after spinal cord injury**

**Weishi Li, Dr.** Department of Orthopaedics, Peking University Third Hospital, Haidian District, Beijing, 8610091, PR China. Email: [puh3liweishi@163.com](mailto:puh3liweishi@163.com)

**Schedule:**

- ✧ Thematic issue submission deadline:  
July 31, 2020

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