

## Tentative Outline

### Special Thematic Issue for the Journal

**Title of the Thematic Issue:** Nanotechnology-based drug delivery as therapeutic modalities for neurological diseases

**Guest Editors: Prof. (Dr.) Javed Ali and Prof. (Dr.) Sanjula Baboota**

• **Scope of the Thematic Issue:**

Neurological diseases are a group of heterogeneous neurodegenerative disorders/neuroinfectious diseases that are specifically characterized by the progressive degeneration of the structure and function of the central nervous system (CNS) or peripheral nervous system. The occurrence of various neurological diseases like Alzheimer's, Epilepsy, Parkinson, Depression, Brain tumors are on the rise affecting millions of people worldwide due to an increase in the lifespan, stressful living conditions, wrong eating habits, injury, trauma, neurochemical imbalance, infection being some of the contributing factors. The conventional delivery of neurological drugs suffers from the issues of poor oral bioavailability, non-targetability, high dose, dose related side effects leading to poor patient compliance. However, besides from brain cancer, disabilities related to other diseases such as Alzheimer's, Epilepsy and Parkinson's are the most common neurodegenerative disorder that affects millions of people worldwide however neuroinfections may also lead to cognitive dysfunctions. In recent research, therapeutic importance of nano-based delivery systems in neuro diseases have been explored. Nano based delivery of therapeutic molecules to the brain assists in crossing the cellular tight junctions, encapsulating higher drug content, enhancing solubility of the lipophilic drugs, increasing surface area and rate of dissolution, reducing therapeutic dose and providing rapid onset of action leading to enhanced therapeutic efficacy of the therapeutic molecules. These nano-based delivery systems also demonstrate a controlled/sustained drug release pattern, show targetability when conjugated with a ligand on the surface of nanotechnology-based delivery system thereby enhancing the bioavailability of therapeutic molecules in brain tissues. Furthermore, the state of aggregation and physical properties of nano formulation determine neurotoxicity which primarily depends on fabrication and purification methods.

The aim of the current special issue, is to assemble translational work related to nanotechnology-based delivery system against neurological disorders, including parkinsonism, Alzheimer, psychosis, epilepsy, seizures, depression etc., and neuroinfectious diseases. It is hoped that the special issue will improve the understanding related to mechanism of action and targeting of neurological disorders via nanotechnology-based delivery system. This issue will also focus on toxicity induced by novel drug delivery system, regulatory issues, and will provide insights on patented technologies.

**Keywords:** Neurodegenerative; Nanotechnology; Delivery system; Phytoconstituents; Biologics; Synthetic medicine; Combinatorial.

#### Sub-topics:

The sub-topics to be covered within the issue are:

- Molecular targets and nanoparticulate approach designed for the enhancement of therapeutic intervention in neurological diseases.
- A combinatorial approach of nano-based delivery system for the management of the neurological diseases.
- Nanotechnology based gene delivery system as a novel therapeutic tool for neurological disorders.
- Current advancements related to phytoconstituents based nano delivery for neurological disorders.
- Targeting approach of ligand conjugated nano-based approach for management of neurological disorders.

- Recent advances in the nano-based approaches for treatment of microbial induced neurological infections.
- Regulatory and Intellectual property insights on nano drug delivery formulations for neurological disorders.

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

1. Nanoparticles exacerbate Pathophysiology of Neuropathic Pain. Neuroprotection by nanowired delivery of cerebrolysin-a multimodal drug by Hari Shanker Sharma et al.

<sup>1</sup>International Experimental Central Nervous System Injury & Repair (IECNSIR), Dept. of Surgical Sciences, Anesthesiology & Intensive Care Medicine, Uppsala University Hospital, Uppsala University, SE-75185 Uppsala, Sweden (Sharma@surgsci.uu.se)

#### **Schedule:**

- ✧ Thematic issue submission deadline:
- 1. Thematic issue after preliminary approval by the Editor-in-chief If approved, will be uploaded on journal's website in the "Forthcoming Special Issues" tab, to advertise and invite authors to contribute to the thematic issue- **Three months from the date of upload on the website.**
- 2. Submission of the final proposal to the Editorial Office along with the mandatory list of the contributors for further scrutiny- **Time to be taken by the Editorial office.**
- 3. On final acceptance of the proposal the authors will be informed about submission of manuscripts on secure Manuscript Processing System (MPS) -**Three months for the date of information about acceptance of the proposal**
- 4. Peer review process, acceptance and Galley Proofs- **Three Months**
- 5. Final Issue published
- 6.

#### **Contacts:**

Guest Editor Name: **Prof. (Dr.) Javed Ali**

Affiliation: School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi-110062

Email: [jali@jamiahamdard.ac.in](mailto:jali@jamiahamdard.ac.in)

Guest Editor Name: **Prof. (Dr.) Sanjula Baboota**

Affiliation: School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi-110062

Email: [sbaboota@jamiahamdard.ac.in](mailto:sbaboota@jamiahamdard.ac.in)