

Special Issue

Advances in Nanoparticle-Driven Approaches for Targeted Brain Drug Delivery

Message from the Guest Editors

The effective treatment of various central nervous system disorders remains a challenge. To deliver a sufficient therapeutic concentration of a drug to the intended site of action in the brain in a predictable/controlled manner, various nanoparticle-based drug delivery systems have been proposed, such as ligand-functionalized or stimuli-responsive nanocarriers, often in combination with transient BBB disruption (e.g., focused ultrasound waves, osmotic agents) or alternative delivery routes (e.g., intranasal route, meningeal lymphatic reverse pathway). This Special Issue aims to collect recent developments and challenges related to various nanoparticle-driven strategies for overcoming the BBB, thus contributing to the creation of new avenues for the successful treatment of brain disorders. We welcome articles covering a wide range of topics related to the following areas, among others: novel nanoparticle designs and combinational strategies for targeted brain drug delivery, in vitro/in vivo fate and interactions with the biological environment, biocompatibility and safety assessments, translational research, and regulatory perspectives.

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Editor-in-Chief

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