

Special Issue

Traumatic Brain Injury (TBI) Mechanisms and Novel Therapies

Message from the Guest Editor

Traumatic brain injury (TBI) is one of the most prevalent causes of morbidity and mortality all over the world. Four overlapping stages are distinguished in the pathogenesis of TBI: a primary lesion, the development of its consequences, secondary damage, and regeneration. Secondary lesions are associated with the combined effects of neurotransmitter excitotoxicity, electrolyte imbalance, neuroinflammation, and intracellular stress. Of the factors of secondary damage to brain cells in TBI, cerebral edema is the most frequent and dangerous. There are two major types of edema: cytotoxic edema and vasogenic edema. Cytotoxic edema is induced by hypoxia or ischemia, which leads to the upregulation of various ion channels, such as Na-K-2Cl channels, or failure of sodium-potassium pumps in the astrocytic or neuronal membrane. This Special Issue is meant to highlight recent progress in the field. We welcome all types of articles providing new insights from experimental models and human studies about TBI mechanisms, with a focus on targets for pharmacological intervention and novel approaches to TBI treatment.

Guest Editor

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Deadline for manuscript submissions

closed (31 January 2022)



Pharmaceutics

an Open Access Journal
by MDPI

Impact Factor 5.5
CiteScore 10.0
Indexed in PubMed



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