Special Issue

Exosomes as Drug Carriers

Message from the Guest Editors

The discovery of exosomes (Exo) as natural carriers of functional small RNA and proteins has raised great interest in the drug delivery field. Exo deliver their surface proteins and luminal content to the recipient cells, thus it may be possible to exploit these vesicles for therapeutic delivery of RNAs and peptides. Synthetic drugs can also be encapsulated into Exo as they have a hydrophilic core, which makes them suitable to host water-soluble drugs. Targeted Exo can be obtained by displaying targeting molecules, such as peptides or antibody fragments recognizing target antigens, on the outer surface of Exo. Moreover, the fact that Exo are a natural product of the body, results in a low immune response. Finally, they show reduced long-term accumulation in organs or tissues, with relatively low systemic toxicity. This Research Topic is aimed: 1) at defining Exo loading strategies 2) at analyzing advantages of Exo-based drug delivery in terms of biocompatibility 3) at investigating the impact of Exobased approaches vs. conventional drugs.

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Deadline for manuscript submissions

closed (31 July 2020)



Pharmaceutics

an Open Access Journal by MDPI

Impact Factor 5.5 CiteScore 10.0 Indexed in PubMed



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