

Special Issue

PEGylated Lipid-Based Nanoparticles for Drug Delivery: Pros and Cons of a Frontline Technology in Modern Pharmacotherapy

Message from the Guest Editor

Polyethylene glycol (PEG), a synthetic polymer with varying chain lengths and degrees of branching, has been widely used in medicine as active ingredient or excipient. Its chemical attachment to various nanoparticles provides a hydrophilic layer around them, enhancing the in vitro stability, and hence supports the preservation of lipid-based nanoparticulate drugs, gene delivery systems, vaccines, and many other nanocarriers. However, recently, another less-laudable feature of PEGylation has surfaced: the induction of and reaction with anti-PEG antibodies, which can entail complement activation. Complement activation can trigger hypersensitivity (pseudo-allergic) reactions, as well as rapid uptake by phagocytic cells, that is, loss of stealthiness. There are a few nanodrugs whose clinical success was cut short by the rise of efficacy loss and/or hypersensitivity reactions mediated by anti-PEG antibodies. The papers and reviews collected in the present themed volume of *Pharmaceutics* aim to discuss the details and new insights into this frontline technology of modern pharmacotherapy. We look forward to receiving your contributions.

Guest Editor

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