Special Issue

Self-Assembled Block Copolymers for Drug Delivery

Message from the Guest Editor

Nanoparticle-based drug carriers are expected to overcome several limitations associated with conventional dosage forms. Their capabilities to cope with such problems as low drug bioavailability, nonspecific distribution, systemic side effects, low water solubility, rapid biotransformation, or degradation are a powerful driving force for nanopharmacy development. Especially, cancer therapy is a field where significant progress in the research on nanoparticle carriers has been achieved. After intravenous injection, nanoparticles can accumulate preferentially in the tumor tissue due to passive targeting, as a consequence of its leaky vasculature (enhanced permeability and retention effect, EPR). Active targeting is achieved by means of decorating the nanoparticle surface with ligands recognizing appropriate structures on target cells. Among numerous types of nanoparticles, aggregates made of amphiphilic block copolymers show great potential as drug carriers.

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