Special Issue

Aptamer-Based Tissue-Targeted Drug Delivery

Message from the Guest Editor

Over the last few decades, several targeting strategies for targeted drug delivery have been established, including small-molecule-, nucleic acid-, peptide-, antibody- and cell-based strategies. Among these strategies, nucleic acid aptamers are single-stranded oligonucleotides which are identified via systematic evolution of ligands using the exponential enrichment (SELEX) method, and can specifically bind to target molecules. Compared to traditional protein antibodies, aptamers have several advantages, such as small size, high binding affinity, specificity, good biocompatibility, high stability and low immunogenicity. At the same time, they are versatile, flexible, three-dimensional structures that can be conjugated to chemotherapeutic drugs and nanocarriers, and facilitate their transport into the target tissue and cells, which makes them a strong candidate for tissue-specific drug delivery. Thus far, the majority of the aptamer-based drug delivery researches are being investigated in preclinical trials.

Guest Editor

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