Journal of Drug Delivery

Hindawi

Special Issue on

Nanomedicine for Combination Cancer Therapy

CALL FOR PAPERS

An ongoing challenge in cancer chemotherapy is cancer drug resistance which lowers effective drug concentration in cancer cells and eventually leads to treatment failure. Drug resistance involves a wide range of molecular mechanisms such as overexpression drug efflux pumps, alteration of drug metabolism, and inactivation of a death signaling pathway of cancer cells. Combination therapy, which targets multiple signaling pathways simultaneously in a synergistic manner, is an emerging treatment to overcome cancer drug resistance for better therapeutic effectiveness. However, the effective administration of multiple drugs using an optimized dose ratio is always unpredictable *in vivo* due to their dissimilar pharmacokinetics, mismatched biodistribution, and different membrane transport properties. Within this context, nanoparticle formulations offer many advantages for combinational therapy. For example, multiple therapeutic agents (drugs or nucleic acids) with different physiochemical properties and pharmacological properties can be incorporated into one nanoparticle and released out together at a desirable ratio. Moreover, the synergistic effect of combinational therapy enables achieving improved antitumor efficacy with a lower dose of each drug as well as reduced systematic toxicity. As a result, nanomedicine provides a unique platform for clinicians to fine-tune the pharmacological properties of multidrug cocktails for personalized medicine. Some nanoparticles such as CPX-351 are currently under investigation in clinical trials for combinational therapies. Although this strategy has been demonstrated to be a promising way for treating cancer, this approach for cancer therapy has not been fully explored. Hence, this special issue is dedicated to the recent development in nanomaterials for combination cancer therapy.

We invite the researchers to contribute the original research work and review articles that are related to combination cancer therapy using nanomaterials. We hope that this special issue would provide an opportunity for the researchers to share their outstanding work in the field of nanomedicine and a useful resource for the cancer research community.

Potential topics include but are not limited to the following:

- Synthesis and characterization of nanoparticles that contain multiple biological chemotherapeutics like genes, antibodies, proteins, siRNA, or miRNA
- Smart nanomaterials for controlled release of multiple cargoes in response to internal or external stimuli such as redox microenvironment, pH change, enzyme, thermal, or light exposure
- Multifunctional nanomaterials for targeted drug delivery and synergistic treatment of cancer such as breast cancer, ovarian cancer, and prostate cancer
- Multimodal nanoparticles with therapeutic agents and contrast agents for both cancer therapy and cancer imaging

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/jdd/ncct/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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