

Special Issue on Recent Advances in Nanomedicine for Cancer Treatment

CALL FOR PAPERS

Cancer is a complex set of diseases that represent almost one-third of the leading causes of death and disability worldwide. Although tumors widely differ in their genetic and molecular bases, phenotypic manifestations, and variability on the prognosis, they share common hallmarks such as self-sustained proliferative abilities, sustained angiogenesis, drastic metabolic alterations, or the capability to invade surrounding tissues and metastasize.

Today, radiotherapy and chemotherapy are the principal treatment modalities aimed at eradicating solid tumors. However, the efficacy of these therapies is often hampered by many dangerous side effects associated with nonselective cytotoxicities.

In recent years, nanotechnology has attracted significant interests in cancer therapeutics because of its huge potential to offer an innovative paradigm to overcome the problems arising from present chemotherapy and radiotherapy approaches. The recent advances in the field of chemistry and material sciences have produced nano-materials which are expected to improve the treatment of many tumors otherwise resistant to the traditional therapeutic approaches. Nanomaterials can have intrinsic cytotoxic activity and/or enhance the efficacy of standard chemotherapies. Moreover, they represent novel drug delivery systems while decreasing the side effects of standard drugs.

Depending on their unique physical, chemical, mechanical, and optical properties, nanomaterials are used as nanocarriers to deliver therapeutic molecules, such as drugs, proteins, or nucleic acids. Moreover, these nanostructures can also be externally activated to produce a cytotoxic effect through the delivery of local heating by the application of an external magnetic field or optical near infrared radiation depending on their composition and physical properties. Interestingly, nanomaterials can be also exploited to favour the delivery of immune agents and can represent a valid therapeutic tool to bypass the obstacles currently encountered in cancer immunotherapy. These innovative biomedical applications are currently exploited in a variety of clinical trials and in the near future may represent a major improvement in the therapy of cancer.

This multidisciplinary special issue encourages oncologists and pharmaceutical and translational scientists working in a related field to submit original research articles, review articles, and clinical studies focusing on cancer treatment based on novel functional nanomaterials.

Potential topics include but are not limited to the following:

- ▶ Metal and metal oxide-based nanomaterials for drug delivery in cancer treatment
- ▶ Magnetic and photothermal therapy in cancer
- ▶ Modulation of immune response by nanoparticles
- ▶ Modulation of autophagy by metallic nanoparticles
- ▶ Regulation of oxidative stress by metallic nanomaterials
- ▶ Two-dimensional nanomaterials for cancer treatment
- ▶ Core-shell nanomaterials for cancer therapy
- ▶ Polymer nanocomposites in cancer and drug delivery

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.wiley.com/submit?specialIssue=822086>.

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

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