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Cancer is a highly heterogeneous disease at intra/interpatient levels and known as the leading cause of death worldwide. A variety of mono and combinational therapies including chemotherapy have been evolved over the years for its effective treatment. However, advent of chemotherapeutic resistance or multidrug resistance (MDR) in cancer is one of the major challenges researchers are facing in achieving successful chemotherapy. MDR is a complex process having multifaceted noncellular or cellular-based mechanisms. Research in the area of cancer nanotechnology over the past two decades has been proven through the development of novel polymers, metallic particles, lipids, and eventually the smartly designed nanoparticles with targeting ligands. In addition, through overcoming the MDR and preferential accumulation in the tumor region by mean of active and passive targeting, the off-target accumulation of payload has been reduced. Many of such nanoparticles are in different stages of clinical trials such as nanomedicines showing promising results in cancer therapy including the resistant cases. Nanoparticles as chemotherapeutics carriers offer the opportunity to have multiple payload of drug and or imaging agents for combinational and theranostics therapy. Moreover, nanotechnology further extended and brings in notice the new treatment strategies such as combining the NIR, MRI, and HIFU in cancer chemotherapy and imaging. Currently, research is being undertaken in area of novel nanopharmaceutical design, which focuses on making the chemotherapy curative and long lasting.

This thematic issue will present a concise focus ongoing research in nanopharmaceutical designs for targeted cancer chemotherapy. Therefore, contributors are requested to cover the current views on the factors responsible for DR and MDR of cancer. Further analysis research is required on how chemistry of advance functional materials in nanomedicines can achieve the targeting factors of chemotherapy. We hope to receive up-to-date, broadly, and interdisciplinary discussed reviews on cancer nanotechnology. These areas of research are expected to help the pharmaceutical and biomedical researchers and oncologists in understanding the challenges and developing newer target in cancer chemotherapy in this issue. Further research on how other physical therapies can be used together with nanopharmaceuticals for improved chemotherapy articles is also invited to submit.

We are inviting investigators to submit original research papers and review articles that will stimulate the continuing understanding/implementing of the chemistry of advance material and nanoparticles synthesis in cancer nanotechnology.

Potential topics include, but are not limited to:

- ▶ Studies of nanoparticles synthesis in cancer nanotechnology
- ▶ Implementing the chemistry of advance material and nanoparticle synthesis in cancer diagnosis, drug delivery, and theranostics
- ▶ New challenges in the use of nanomedicine in cancer therapy
- ▶ Synergetic approach in combination of physical therapies with nanotechnology
- ▶ Current views on the factors responsible for multidrug resistance in cancer therapy and the role of chemistry in developing nanomedicines to overcome cancer resistance
- ▶ Chemistry of nanoparticle design for gene delivery

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/jchem/medicinal.chemistry/camns/>.

Lead Guest Editor

Sohail Akhter, Centre de Biophysique Moléculaire(CBM)-CNRS UPR4301, Orléans Cedex 2, France
sohailakhtermph@gmail.com

Guest Editors

Javed Ahmad, National Institute of Pharmaceutical Education and Research (NIPER), Raebareli, India
jahmad18@gmail.com

Ziyaar Rahman, Texas A&M Health Science Center, Bryan, USA
rahman.ziyaar@gmail.com

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First Round of Reviews

Friday, 30 December 2016

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