

## Tentative outline

### Special Thematic Issue for Current Topics in Medicinal Chemistry

#### ***Fighting antimicrobial resistance with natural products- current developments and future prospects***

Guest Editors: Dr. Vinay Kumar, Dr. Varsha Shriram, Dr. Abhijit Dey

#### **Aims and Scope:**

Injudicious use of antibiotics in health, hygiene, agriculture, animal husbandry and food industries has led to a rapid emergence and persistence of antimicrobial resistance (AMR), a serious global health threat. The crisis of AMR versus slower discovery of newer antibiotics put forth a daunting task to control these drug-resistant superbugs. Natural products are hailed as holding the key in combating AMR owing to their abilities to target major microbial drug-resistance determinants beside their dual abilities as bactericidal and drug-resistance reversal agents. This special thematic issue aims to bring together high-quality Original Research and Reviews highlighting the potential of natural products and their synthetic analogues in combating AMR, especially in the World Health Organization (WHO) prioritized pathogens. Articles covering current developments and future prospects in isolation, characterization, bioactivity, mechanism-of-action, and toxicity analyses of natural products/synthetic analogues/nanomaterials effective against drug-resistant pathogens are welcome.

**Keywords:** Antimicrobial resistance; natural products; phytochemicals; biofilm; efflux pumps; mobile genetic elements; quorum sensing; bactericidal; drug-resistance reversal; omics; systems biology; synthetic biology

#### **Subtitles**

The sub-topics include (but not limited to):

- Natural products for complementary and alternative therapies against emergence, persistence and spread of antimicrobial resistance
- Natural products (extracts; pure molecules; essential oils etc.) as effective bactericidal and drug-resistance-reversal (re-sensitizers or re-potentiators) agents
- Targeting Major Microbial Drug-Resistance Determinants (drug efflux pumps, mobile genetic elements, cell permeability, cell communication/quorum sensing, biofilm formation etc.) in MDR/XDR/PDR pathogens with natural products and/or their synthetic analogues
- Advanced 'omics' approaches for identification and/or curing of drug resistant determinants in pathogens
- Biogenic/bio-functionalized nanomaterials for combating antimicrobial resistance
- Synthetic biology approaches for the production of potent natural antimicrobials/drug-resistance-reversal agents

#### **Schedule**

- Manuscript submission deadline: August 1, 2021
- Peer review due: 31 August, 2021
- Revision due: 15 September, 2021
- Announcement of acceptance by the Guest Editors: 1 October, 2021
- Final manuscripts due: 15 October, 2021

#### **Contacts**

**Corresponding Guest Editor:** Dr. Vinay Kumar, PhD

Affiliation: Modern College, Savitribai Phule Pune University, Ganeshkhind, Pune 411016, INDIA

Email: [vinay.kumar@moderncollegegk.org](mailto:vinay.kumar@moderncollegegk.org) , [vinaymalik123@gmail.com](mailto:vinaymalik123@gmail.com)

ORCID ID: <http://orcid.org/0000-0002-9569-2411>

**Guest Editor:** Dr. Varsha Shriram, PhD

Affiliation: Prof. Ramkrishna More College, Savitribai Phule Pune University, Ganeshkhind, Pune 411044, INDIA

Email: [varshashriram76@gmail.com](mailto:varshashriram76@gmail.com) ,

**Guest Editor:** Dr. Abhijit Dey, PhD

Affiliation: Department of Life Sciences, Presidency University, Kolkata 700073, INDIA

Email: [abhijit.dbs@presiuniv.ac.in](mailto:abhijit.dbs@presiuniv.ac.in) , [abhijitbio25@yahoo.com](mailto:abhijitbio25@yahoo.com)

Any queries should be addressed to [ctmc@benthamscience.net](mailto:ctmc@benthamscience.net)