

Tentative Outline

Special Thematic Issue for Current Topics in Medicinal Chemistry

Challenges and Discoveries in Polypharmacology

Guest Editors: *Luciana Scotti and Marcus T Scotti*

Aims & Scope:

The basic principle of action of a drug is based on model lock and key, where is desirable the highest possible affinity for a target avoiding no side effects. For many years it was desirable 'one drug for one target for one disease', however the researchers observed that complex diseases are best addressed when treated with drugs multi-targets. However, in the recent years the researches try find polypharmacology- drugs that act on multiple rather than single targets against complex diseases, such as oncology, psychiatry and antiinfectives. Examples are: the fluoroquinone that inhibits two of the multiple penicillin-binding proteins to induce cell death; anti-psychotic drugs exhibit activities in serotonin and dopamine receptors; the protein kinase inhibitors, including sunitini (Sutent) and imatini (Gleevec) against cancer. In the searches, new drugs against a specific target of one disease have been found to be active against another target of a different disease and/or reduce the resistance. All additional activities of these drugs should be explored in repositioning them for new therapeutic application. This special issue will be dedicated to multi-target chemical (drugs, organic compounds, nanoparticles), including (but limited to) those with dual (or multiple) mechanisms of action. The manuscripts should be focused in evaluations of activities/toxicities of chemicals against two or more biological targets (proteins and/or enzymes, cells, microorganisms, etc). The basic principle of action of a drug is based on model lock and key, where is desirable the highest possible affinity for a target avoiding no side effects. For many years it was desirable 'one drug for one target for one disease', however the researchers observed that complex diseases are best addressed when treated with drugs multi-targets. In the recent years the researches try find polypharmacology drugs that act on multiple rather than single targets against several diseases.

Keywords: polypharmacology, multi-targets, Medicinal chemistry, and Drug development

Subtopics:

The subtopics to be covered within this issue are listed below:

- Therapeutic and diagnostic applications of multi -targets agents
- Computational approaches for the development of multi -targets agents
- Drug targeting and delivery

Tentative titles of the articles:

- Epilepsy Targets
- Phytochemistry and Polypharmacological potential of *Colebrookea oppositifolia*
- Exploring the multi-target potential of iridoids: Advances and Applications
- Transforming the treatment for Uveal Metastatic Melanoma with Kimmtrak: A Comprehensive Review
- Multitarget polypharmacology of 4-aminoquinoline compounds against malaria, tuberculosis and cancer

Schedule:

- ✧ Thematic issue submission deadline:
- ✧ Tentative submission deadline: 15, May 2022.
- ✧ Tentative submission of revised manuscript: 20 July 2022.
- ✧ Submission of issue: 10, August 2022.

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