

CALL FOR PAPERS

Metal-based pharmaceuticals (metallo drugs) are one of the main subdivisions in the field of bioinorganic chemistry. Metallo drugs have drawn great attention for their theoretical and applicable value as therapeutic and diagnostic agents for cancer, bacteria, diabetes, Alzheimer Disease, Parkinson Disease, and other diseases. For instance, platinum based anticancer agents are one of the most widely used metallo drugs used in more than 50% of cancer chemotherapies. However, limitations, such as their toxic side effects and drug resistance, appeared and promoted development of new kinds of metallo drugs. Recently, medicinal chemists and pharmacologists are focusing on the design of transition metal anticancer agents that might be effective against a wider range of cancers, have less side effects, have different mechanisms of action, and therefore be effective against platinum-resistant cancers. Metallo drugs researchers have devoted tremendous efforts to overcome drug resistance and to find new cures in medicine.

By rational design of the metal center and around coordination ligands, efficient metallo drugs could be created. In most cases, both metal ions and binding components play important roles in the treatment of diseases. Sometimes even a change of one atom in the chemical configuration of metallo drug might cause significant differences in chemical and biological properties. For example, the anticancer activity of organoiridium complexes could be improved over 1000 times by introducing phenyl or biphenyl substituents on Cp* ring, replacing nitrogen atom with carbon atom in bipyridine ligand, and by changing chloride to pyridine. It is absolutely essential to fully understand what happens to the metal and the ligands once the metallo drug enters the body, where at least a majority of metallo drugs undergo dissociation and ligand exchange. The mechanisms of action may include interaction with nucleic acid, targeting proteins, or enzymes, even catalyzing transfer hydrogenation in cells and generating reactive oxygen species and so forth. Multifunctional metallo drugs are highly desired as they have more than one way to fight against a disease and it may be hard to develop resistance. The metal complexes could target one or more organelles according to their action modes, which demand a great work of designing, synthesizing, and testing. A clear look into the mode of action is crucial to understand the performance of metallo drugs, and it feeds back positively to the design of drugs.

This special issue aims to exploit fully the potential of metallo drugs and to present the reader with the latest progress of metallo drugs in the discipline of medicinal inorganic chemistry. Submissions focusing on all aspects of metallo drug development are welcome. Related and similar topics are also encouraged.

Potential topics include but are not limited to the following:

- ▶ Novel metal complexes against cancer cells or bacteria
- ▶ Alzheimer Disease and Parkinson Disease therapeutics related to metals
- ▶ Exploration of the function procedure and studies of mechanisms of action
- ▶ Metal complexes exhibiting organelle targeting ability or cell selectivity
- ▶ Metal related luminescent probes
- ▶ Photochemotherapeutic metallo drugs
- ▶ Studies on the ADME properties of metallo drugs, that is, absorption, distribution, metabolism, and excretion

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/bca/meta/>.

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

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