



Cisplatin in Cancer Therapy: Molecular Mechanisms of Action

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Deadline for manuscript
submissions:

closed (31 October 2019)

Message from the Guest Editors

Although it has been 40 years since the FDA approved the use of cisplatin in the treatment of cancer, the mechanism of action of this drug is not yet fully elucidated. Evidence correlating the pharmacological effect of cisplatin with its capability to damage the structure of DNA is irrefutable, but the intimate connections between the causes and the effects have not been fully demonstrated. Despite this deficiency, 50% of all cancer chemotherapeutic treatments include a platinum drug, either cisplatin or carboplatin and oxaliplatin. Complete elucidation of the mechanism of action of platinum-based drugs is a fundamental and high-priority task that could potentially allow the amelioration or elimination of the severe side effects accompanying patient treatment. Another important challenge is to understand in detail the nature of the intracellular pathways that are affected by the platinum-DNA adducts, which are responsible for developing resistance to platinum drugs and for the differential response of tumors to these platinum drugs.





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