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Radiation-Induced Damage to DNA

Guest Editors:

Prof. Dr. Janusz Rak
Department of Physical Chemistry, Uniwersytet Gdanski, Gdańsk, Poland

janusz.rak@ug.edu.pl

Dr. Magdalena Zdrowowicz
Department of Physical Chemistry, Faculty of Chemistry, University of Gdańsk, Gdańsk, Poland

magdalena.zdrowowicz@ug.edu.pl

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Message from the Guest Editors

Since cancer is the third leading cause of death, radiation-induced damage to DNA is a topic of a paramount importance. Indeed, radiotherapy and photodynamic therapy are common modalities for treating human cancers, and causing efficient damage to the DNA of tumor cells is their main target. The efficacy of the above-mentioned modalities is a serious issue, since solid tumors, which account for c. 80% of cases, are hypoxic, which significantly reduces the extent of primary damage induced either by the ionizing or UV photons.

This Special issue will expose the reader to: the mechanisms of direct and indirect radiation-induced DNA damage, radiation damage to DNA–protein complexes, the computational modeling of radiation damage to DNA, radio- and photosensitizers of DNA damage, repair of radiation-induced DNA damage, the biological consequences of DNA damage, the radiotherapy of cancer, photodynamic therapy, and cellular responses to DNA damage.

- DNA radio-/photodamage
- Radiosensitizers
- Solvated electrons
- Photosensitizers
- Hypoxia
- DNA repair
- Protein–DNA complexes
- Molecular modeling of DNA damage

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Special Issue