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## Impact of Radiation and Chemical Exposure on Genome Activity, Function, Structure and Evolution

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### Message from the Guest Editor

Dear Colleagues,

Technological advances have brought forward new levels and areas of exposure to humans in form of synthetic chemicals and ionizing radiation. Ionizing radiation is defined as any electromagnetic wave or particle that will produce a subatomic ionization event. Ionizing radiation can inflict a wide spectrum of DNA damages resulting in mutations, translocations, deletions, and other genomic aberrations. The DNA lesions can lead to mutations in somatic cells, often resulting in cancer, making the ionizing radiation a well-known and described carcinogen. Ionizing radiation can also be used in a targeted manner on rapidly dividing cells in solid tumours, providing thus radiotherapy treatments. Chemicals, both natural and synthetic, can act on a variety of biological processes including DNA-methylation, histone activity, and genes expression. Moreover, the induced alterations can sometimes be associated with an increased risk of disease. The aim of this Special Issue is to provide an overview of the impact of radiation and chemical exposure at various levels on genome activity, function, structure and evolution.

Dr. Cristina Sisu

*Guest Editor*



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Special Issue



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