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Recent Advances on DNA Damage Response: From Molecular Mechanisms to Therapeutic Opportunities

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Message from the Guest Editors

Dear Colleagues,

Cells are continuously exposed to endogenous and exogenous DNA-damaging agents. To properly protect the genome, all types of DNA lesions are repaired by complex DNA damage response (DDR) pathways that include cell cycle arrest as well as transcriptional and post-translational activation of genes and proteins, including those associated with DNA repair, senescence and programmed cell death. The DDR acts through sensors, transducers, and effectors that orchestrate the spatial and temporal order of DNA/protein and protein/protein interactions to allow the maintenance of genomic stability and integrity. Improper DDR may result in various diseases, including cancer, premature aging, immunodeficiencies, chronic inflammatory conditions, and autoimmune disorders. Understanding the broader roles of DDR in cell and tissue homeostasis has brought key molecular mechanisms into sharper focus, providing valuable information for the identification of novel druggable targets. In this Special Issue, original studies, review articles, case reports, and commentaries focused on the molecular mechanisms and therapeutic strategies related to DDR are warmly welcome.

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Message from the Editor-in-Chief

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