

Special Issue

Cold Atmospheric Plasma Effect on Cancer Cells

Message from the Guest Editors

Cold atmospheric plasma (CAP) has emerged as a promising approach in cancer research due to its ability to generate reactive oxygen and nitrogen species that selectively affect cancer cells while minimizing damage to healthy tissues. CAP can modulate intracellular signaling, induce apoptosis and immunogenic cell death, disrupt redox homeostasis, and enhance the efficacy of conventional cancer therapies. These advances position plasma medicine as a rapidly growing multidisciplinary field at the interface of plasma physics, molecular biology, and oncology. This Special Issue provides a platform for research on the molecular and biochemical mechanisms of CAP–cancer cell interactions. We welcome original articles and reviews aligned with the scope of the *International Journal of Molecular Sciences*, focusing on molecular pathways, cellular responses, redox biology, DNA damage, immune modulation, and plasma-induced biochemical processes. Topics include CAP–cancer mechanisms, reactive species in plasma oncology, plasma-induced cell death, redox signaling, DNA damage and repair, combination therapies, plasma models, and translational aspects of plasma-based cancer treatment.

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