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Plasma-cell interaction: the role of plasma parameters[1] LI LIN, DAYUN YAN, XIAOLIANG YAO, VIKAS SONI, George Washington University, JAGADISHWAR SIRIGIRI, Bridge 12 Technologies, MICHAEL KEIDAR, George Washington University, MPNL TEAM[2], BRIDGE 12 TECHNOLOGIES COLLABORATION — After a decade of studies on the plasma-based cancer therapy in-vivo and in-vitro, it is clear that the reactive nitrogen-oxygen species play a key role in leading cells to apoptosis. However, in addition to the plasma direct therapeutic actions, we have found that plasma treatment leads to cell sensitization or activation. Such effect explains the mechanism of cold atmospheric plasma actions. In fact, recently we observed that the plasma activation depends on discharge parameters such as the discharge voltage. In this work, we summarize the role and behavior of the plasma parameters of a cold atmospheric plasma jet and their effect on cell activation and treatment. Moreover, we introduce the idea of the cell feedback control and the optimization of the emission as a part of the self-adaptive plasma which can be tailored for a variety of situations among different cell lines and patients.

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