THE EFFECTS OF RAT C6 GLIOMA CELLS AND IN VIVO TUMOR BY ATMOSPHERIC PRESSURE COLD PLASMA JET*

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In recently, there has been a growing interest in developing non-thermal atmospheric pressure plasma, particularly for biomedical applications such as sterilization of living tissue, in vivo and in vitro blood coagulation, chronic wound healing, various skin diseases therapy, and treatment of cancer cell 1, 2.

In this study, we show in vitro and in vivo response of to cancer cells upon treatment with cold atmospheric pressure plasma jets. The rat C6 glioma cell in vitro can be selectively eradicated by plasma jet without damaging normal cells, and in vivo experiments on C6 glioma-bearing rats showed that cold plasma induced a significant reduction of tumor volume as compared to non-treated rats at appropriate plasma dose. In addition, the safety of plasma treatment is studied in vivo. The long time plasma treatment (30 min, single), produces a superficial burn. With increase of treatment time or plasma power, the skin damage will be expanded. Based on our results, we may provide a novel method of cancer treatment to biomedical field.


* Work supported by the National Natural Science Foundation of China under Grant No. 30870712 and No. 11005126