

Abstract Submitted  
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**Control of the Proliferation of Mammalian Cells by the Non-Thermal Atmospheric Pressure Plasmas**<sup>1</sup> HAE JUNE LEE, CHANG SEUNG HA, Pusan National University, YONGHAO MA, Yonsei University, JUNGYEOL LEE, Pusan National University, KIWON SONG, Yonsei University — Recent development of the atmospheric pressure plasmas (APPs) reported dramatic achievement on the applications to sterilization, wound healing, blood coagulation, and so on. These effects are coming from the abundant electrons, various ions, radicals, and neutral atoms which cause specific interactions with cells. However, the application of APPs to human cells has been mainly focused on cell death, but not so much on cell proliferation. In this study, the effects of a non-thermal dielectric barrier discharge (DBD) were investigated for three different human cell lines. It was observed that the exposure of APP to human adipose-derived stem cells (ASC) and the primary lung fibroblast IMR-90 cells induced increased cell proliferation in a specific condition. On the other hand, the same exposure of APP to HeLa cells dramatically decreased their viability. These observations suggest that different types of human cells differentially respond to the exposure of APP.

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