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### **Scientific Reports of Plasma Medicine and its Mechanism for Therapy in Plasma Bioscience Research**

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Scientific reports of plasma medicine and its basic mechanism for therapy will be introduced, especially, performed in Plasma Bioscience Research Center, Korea. We have investigated enhanced anticancer effect of monocytes and macrophages activated by nonthermal plasma which act as immune-modulator on these immune cells. Further, we investigated the action of the nanosecond pulsed plasma activated media (NPPAM) on the lung cancer cells and its DNA oxidation pathway. We observed OD induced apoptosis on melanocytes G361 cancer cells through DNA damage signaling cascade. We also studied DNA oxidation by extracting DNA from treated cancer cell and analyzed the effects of OD/OH/D<sub>2</sub>O<sub>2</sub>/H<sub>2</sub>O<sub>2</sub> on protein modification and oxidation. Additionally, we attempted molecular docking approaches to check the action of D<sub>2</sub>O<sub>2</sub> on the apoptosis related genes.