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Investigation antiviral effects of cold atmospheric plasma MILAD RASOULI, ELAHEH AMINI, Kharazmi University — Gas plasma has wide applications in medical science such as cancer treatment, virus inactivation, and wound healing. A typical plasma plume is generated by feeding a noble gas through a pair of electrodes with a couple of kV sinusoidal waves. Cold atmospheric plasma as a cocktail of physical and chemical factors provides a solution for the drawbacks of common antiviral methods. Gas plasma technology provides a perspective for the general audience of the chances and opportunities for supporting healthcare during viral pandemics such as the COVID-19 crisis. Plasma with complex constituents such as the emission of UV radiation and reactive oxygen and/or nitrogen species (RONS) have the most important antimicrobial properties and is a novel, efficient, and clean solution for virus inactivation. Here, we aim to investigate virus inactivation efficiency of cold plasma on SARS-CoV-2 model viruses. Besides, we measure the concentration of long-lived reactive oxygen and nitrogen species (RONS) to elucidate the chemical effects of cold plasma. We will perform Ethidium monoazide (EMA)-coupled RT-qPCR for investigating the inactivation performance of nonthermal plasma.

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