

Vulnerability of SARS-CoV-2 and PR8 H1N1 virus to cold atmospheric plasma activated media

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Abstract-

Cold Atmospheric Plasma (CAP) and Plasma Activated Media (PAM) are effective against bacteria, fungi, cancer cells, and viruses because they can deliver Reactive Oxygen and Nitrogen Species (RONS) on a living tissue with negligible damage on health cells. The antiviral activity of CAP against SARS-CoV-2 is being investigated, however, the same but of PAM has not been explored despite its potential. In the present study, the capability of Plasma Activated Media (PAM) to inactivate SARS-CoV-2 and PR8 H1N1 influenza virus with negligible damage on healthy cells is demonstrated. PAM acted by both virus detaching and diminished replication. Furthermore, the treatment of A549 lung cells at different times with buffered PAM did not induce interleukin 8 expression, showing that PAM did not induce inflammation. These results open a new research field by using PAM to the development novel treatments for COVID-19, influenza, and other respiratory diseases.

Index Terms- Plasma Medicine, Plasma Activated Media, Covid-19

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