

## Plasma Activated Water (PAW) Against Virus and Multidrug Resistant Bacteria: characterization and in vitro experiments

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Plasma Activated Media are capturing the attention of medical community due to their capability to delivery Reactive Oxygen and Nitrogen Species (RONS) in surfaces without the accessibility limitations that direct application of a cold plasma has, thus, opening a wide research field in plasma medicine [1].

In this work we present results of Plasma Activated Water (PAW) applied to in-vitro experiments with bacteria and virus. PAW significantly reduces the infectious capacity of viruses and inhibits replication in infected cells not generating measurable damage on the cell nor inducing inflammation. The treatment also results lethal to *Pseudomonas Aeruginosa*. Emission UV-VIS obtained from the jet of cold atmospheric plasma while water is activated and absorption spectra of the PAW are used to optimize the RONS injection and to estimate the relative abundance of different species.

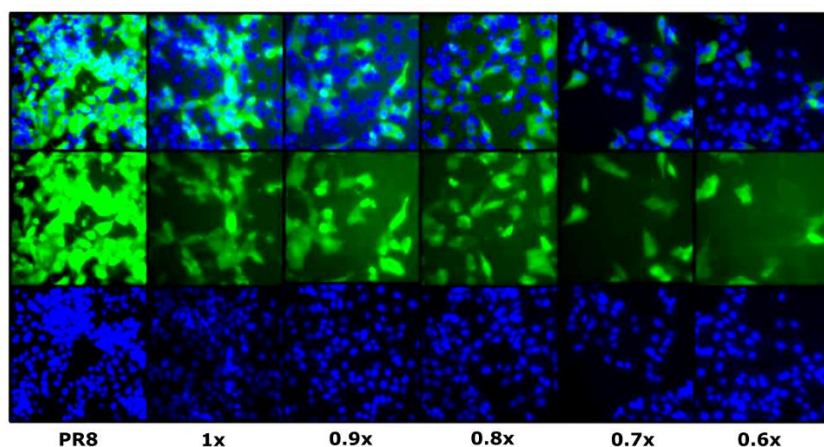


Fig.1. Immunofluorescence of MDCK cells infected with PR8 H1N1 during 24 hours and treated with PBS buffered PAW at different dilutions. The images are representative from three experiments. Results show a reduction of infection in infected cells treated with PAW.

- [1] Kostya (ken) Ostrikov *et al.*, "Plasma-activated water: Generation, origin of reactive species and biological applications," *J. Phys. D. Appl. Phys.*, vol. 53, no. 30, 2020, doi: 10.1088/1361-6463/ab81cf.