Cold atmospheric plasma (CAP) is gaining increasing interest for cancer treatment, although the application is still in its early stages. Besides direct CAP treatment of cancer cells, plasma can also be used to activate a liquid medium, which seems to have similar anti-cancer effects as the plasma itself. This so-called plasma activated medium (PAM) is very promising for cancer treatment, as it can be more generally used, e.g., it might be directly injected into tissue of patients. However, the anticancer potential of PAM is not yet fully understood. This is exactly the focus of this project. We will measure the reactive oxygen and nitrogen species (RONS) concentrations in PAM, and also calculate them with a model for plasma-liquid interaction. In addition, we will study the effect of PAM on a catalase model protein by experiments, and perform atomic scale simulations for the interaction of RONS with this protein, to better understand the effect of PAM on cancer cells, because catalase aids cancer cells in overcoming oxidative stress created by PAM.
Field of Science

/medical and health sciences/health sciences/infectious diseases/hiv
/natural sciences/chemical sciences/inorganic chemistry/inorganic compounds
/medical and health sciences/clinical medicine/oncology/cancer

Programme(s)

H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

Topic(s)

MSCA-IF-2016 - Individual Fellowships

Call for proposal

H2020-MSCA-IF-2016

See other projects for this call

Funding Scheme

MSCA-IF-EF-ST - Standard EF

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Activity type

Higher or Secondary Education Establishments

EU Contribution

€ 160 800

Website

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