Abstract Submitted
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Antitumor action of non thermal plasma sources, DBD and Plasma Gun, alone or in combined protocols[1] ERIC ROBERT, GREMI UMR7344 CNRS/Université d'Orléans, LAURA BRULLÉ, TAAM-CIPA UPS44 CNRS Orléans, MARC VANDAMME, TAAM-CIPA UPS44 CNRS Orléans and GREMI UMR7344 CNRS/Université d'Orléans, DELPHINE RIÈS, GREMI UMR7344 CNRS/Université d'Orléans, ALAIN LE PAPE, TAAM-CIPA UPS44 CNRS Orléans, JEAN-MICHEL POUVESLE, GREMI UMR7344 CNRS/Université d'Orléans — The presentation deals with the assessment on two non thermal plasma sources developed and optimized for oncology applications. The first plasma source is a floating-electrode dielectric barrier discharge powered at a few hundreds of Hz which deliver air-plasma directly on the surface of cell culture medium in dishes or on the skin or organs of mice bearing cancer tumors. The second plasma source, so called Plasma Gun, is a plasma jet source triggered in noble gas, transferred in high aspect ratio and flexible capillaries, on targeting cells or tumors after plasma transfer in air through the "plasma plume" generated at the capillary outlet. *In vitro* evidence for massive cancer cell destruction and *in vivo* tumor activity and growth rate reductions have been measured with both plasma sources. DNA damages, cell cycle arrests and apoptosis induction were also demonstrated following the application of any of the two plasma source both *in vitro* and *in vivo*. The comparison of plasma treatment with state of the art chemotherapeutic alternatives has been performed and last but not least the benefit of combined protocols involving plasma and chemotherapeutic treatments has been evidenced for mice bearing orthotopic pancreas cancer and is under evaluation for the colon tumors.

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