

Clinical Trials and Therapeutic Drug Monitoring

August 22-24, 2016 Philadelphia, USA

Low temperature plasmas at atmospheric pressure towards new pharmaceutical products in medicine

N Merbahi and M Yousfi

University of Toulouse, France

This presentation concerns a new field covered by low-temperature plasmas at atmospheric pressure for medical treatments. This is based on the very attractive possibility to tune and design plasmas as possible pharmaceutical products by using selectively some active species (charged particles, radicals, atomic and molecular agents, UV radiations) and even electric fields self-generated by the plasma. The delivery of active species occurs at the gaseous level. This means that there is no need for a carrier medium and the treatment of living tissue or surface is optimal because plasmas can penetrate small pores, spread over rough surfaces and reach both prokaryotic and eukaryotic cells. The present article gives first a review on the main low-temperature plasma setups potentially usable for medical treatments with an emphasis on the setups as, for instance, plasma jets developed in our laboratory. Then, the present article gives a review of the current state of the art of such plasmas as pharmaceutical products or therapeutic tools in medicine with a light on a selection of forefront researches particularly in the field of chronic wounds, blood coagulation, and cancer treatment.

merbahi@laplace.univ-tlse.fr

Notes: