Abstract Submitted
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It's all about NO? – The role of NO and its derivates produced by a DBD in air for wound healing[1] K. STAPELMANN, F. KOGELHEIDE, S. BALDUS, J.-W. LACKMANN, P. AWAKOWICZ, K. KARTASCHEW, M. HAVENITH, D. SCHROEDER, V. SCHULZ-VON DER GATHEN, Ruhr University Bochum, C. OPLAENDER, C.V. SUSCHEK, Heinrich Heine University Duesseldorf — DBDs can be used therapeutically in various clinical applications [1], e.g. improving the wound healing [2]. Besides the disinfecting properties of plasma [3], tissue exposed to plasma responds to the highly reactive mixture of RONS [4]. In particular NO plays an essential role in skin physiology, e.g. promoting wound healing and influencing the microcirculation. However, not only NO itself but also NO-derivates (NOD), such as nitrite and nitrosothiols, play an essential role, acting as NO-storage under acidic conditions and thus contributing to NO bioavailability with a long-term effect. Selected results of the DFG package project PlaCID (Plasma-Cell-Interaction in Dermatology) are presented. Spatial and time-resolved characterization of the DBD regarding n_e, O (TALIF) and O_3 (OAS) densities is shown. Single skin components investigated with Raman and FTIR spectroscopy show distinct modifications caused by RONS. From single components to whole skin, we investigated diffusion of NO through intact epidermis and dermal enrichment with NOD, acting as long-term storage for NO bioavailability.
[1] S. Emmert et al., *Clin. Plasma Med.*, **1**, 2013 [2] F. Brehmer et al, *JEADV*, **29**, 2015 [3] A. Helmke, et al., *Recent Pat. Antiinfect. Drug Discov*, 2012 [4] K. Heuer et al., *Nitric Oxide* **44**, 2015

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