



Effect of non-thermal plasma irradiation on the biological targets; Model tissue, culture dermis, and live mouse

Jun-Seok Oh^{1,2}, Endre Szili³, Hideo Fukuhara⁴, Rob Short⁵, Akimitsu Hatta⁶, Masafumi Ito⁷,
Keiji Inoue⁴

¹Department of Physical Electronics and Informatics, Graduate School of Engineering, Osaka City Univ.,

²BioMedical Engineering Center (BMEC), Graduate School of Engineering, Osaka City Univ.,
3-3-138 Sugimoto Sumiyoshi, Osaka, 558-8585 Japan

³Future Industries Institute, University of South Australia, Adelaide, SA 5095, Australia

⁴Department of Urology, Kochi Medical School, Nankoku, Kochi 783-8505, Japan

⁵Materials Science Institute and Department of Chemistry, University of Lancaster, Lancaster LA1 4YW, UK

⁶Dept. of Electrical and Electronic Engineering, Meijo University, Nagoya 468-8502, Japan

⁷Dept. of Electronic and Photonic Systems Engineering, Kochi Univ. Technol., Kami, Kochi 782-8502, Japan
E-mail: jsoh@osaka-cu.ac.jp

In recent emerging field of plasma life science, understanding of the interaction between the plasma and biological barrier(s) is very important. In collaborations since 2014, we have focused on how plasma generated RONS deliver into biological target through skin barrier. Couple of model tissues including gelatin; agarose; pig skin; mouse skin and also live mice were used to investigate the RONS delivery mechanism. So far, all these results clearly showed the plasma generated RONS can be delivered into living body through biological barrier. We now considering the 'biological barrier' and suggest cultured human dermis for plasma-tissue model study. The cultured human dermis includes human dermal fibroblasts in collagen matrix as shown in Fig. 1. Using well established *in situ* UV absorption spectroscopy, we successfully detected absorption signals in UV range which was considered due to the both cultured human dermis itself and the plasma generated RONS through cultured human dermis. In the presentation, we will introduce our previous tissue model studies with various tissue models as well as current plasma-tissue study with cultured human dermis.



Fig. 1 Cultured human dermis

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