

Abstract Submitted
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Functional recovery of hypoxic ischemic encephalopathy (HIE) by plasma inhalation to living body lungs TAKAMICHI HIRATA, HIROKI WATANABE, SAYAKA MATSUDA, CHIHIRO KOBAYASHI, AKIRA MORI, Graduate School of Engineering, Tokyo City University, YOSHIKI KUDO, Department of Obstetrics and Gynecology, Hiroshima University, MITSUTOSHI IWASHITA, Department of Obstetrics and Gynecology, Kyorin University — We performed to clarify the mechanism by which the irradiation / inhalation using atmospheric-pressure plasma promotes disease treatments such as burn wound1), lungs and heart disease2), and recovery of hypoxic ischemic encephalopathy (HIE). Especially, from the viewpoint of brain disease treatment, we are now accomplishing the experiments concerning plasma inhalation (method of inhaling plasma flow from living body lungs) to reproduce brain cells that became dysfunction by HIE. From the result of the plasma inhalation experiments using small animals (rat), the effect of controlling brain disease was found by inhaling the gas in a mixture of the plasma flow and N₂O into the rat HIE model. This study was supported by a Grant-in-Aid for Scientific Research on Innovative Areas (No. 24108010) from the Ministry of Education, Culture, Sports, Science and Technology, Japan (MEXT). References: 1) T. Hirata *et al.*, Jpn. J. Appl. Phys. 53, 010302 (2014). 2) C. Tsutsui *et al.*, Jpn. J. Appl. Phys. 53, 060309 (2014).

Takamichi Hirata
Graduate School of Engineering, Tokyo City University

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