

Abstract Submitted
for the GEC17 Meeting of
The American Physical Society

Study of Atmospheric-pressure plasmas administration methods for Hypoxic-Ischemic Encephalopathy model rat¹ SAYAKA MATSUDA, TAKAMASA TAMURA, RISACO TANAKA, SEIRA SHIGEKUNI, CHIHIRO KOBAYASHI, TAKAMICHI HIRATA, MASAYA WATADA, AKIRA MORI, Graduate School of Engineering, Tokyo City University — In recent years, atmospheric-pressure plasmas are applied in various fields and also develop in the medical applications. Although the mechanism of action remains unclear, new biomedical applications of plasma have been found. Experiments using atmospheric pressure plasmas confirmed several effects such as burn healing with angiogenesis, the increasing of SpO₂ and improvement of circulatory function. Therefore, we have been focusing treatment of Hypoxic Ischemic Encephalopathy (HIE) by using the atmospheric-pressure plasma. HIE caused by the discontinuation of blood supplied means that a part of the brain is necrotized and a brain function is impaired. Cause of HIE is various, for example, respiratory failure and circulatory failure, neonatal asphyxia. There is no fundamental therapy for HIE except for symptomatic therapy as of now. Because of preservation and recovery of brain functions can be expected by the action of plasma, as a study on HIE treatment using atmospheric-pressure plasma, we consider and report on a method of administrating atmospheric-pressure plasma to HIE model rat at first.

¹This 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)

Sayaka Matsuda
Graduate School of Engineering, Tokyo City University

Date submitted: 30 May 2017

Electronic form version 1.4