Dear Editors in Environmental section,

Please find enclosed our manuscript entitled “Detection Method for 3-Nitrotyrosine in Atmospheric Environments via a High-Performance Liquid Chromatography-Electrochemical Detector System”, which we request you consider for publication as *Invited article* in *Journal of Visualized Experiments*.

Various proteins account for up to ~5% of the urban particulate matter and play a major role as airborne allergens in soil and road dust. Chemical modifications of atmospheric bio-aerosol proteins, such as 3-nitrotyrosine (3-NT) generated via reactions of protein amino acids with O3 and NO2, have been studied due to their promotive effects on allergies. We developed a simple method, described in this paper, to detect 3-NT in air sampler filters using 6-mm-diameter round holes cut from the filters and mixed with pronase. The samples were tested for 3-NT using a high-performance liquid chromatography-electrochemical detector. Our results show that the maximum 3-NT content was detected in the size range of 4.5–7.3 µm and that the detection limit was 1.66 pg/m3. This method is relatively low cost and can be applied to other particles, including those from indoor environments, which may enable evaluations of environmental cleanliness and the prevention of nitrosative stress.

This manuscript has not been published elsewhere and is not under consideration by another journal. We have approved the manuscript and agree with submission to *Journal of Visualized Experiments*. There are no conflicts of interest to declare.

We believe that the findings of this study are relevant to the scope of your journal and will be of interest to its readership. The manuscript has been carefully reviewed by an experienced editor whose first language is English and who specializes in editing papers written by scientists whose native language is not English.

We look forward to hearing from you at your earliest convenience.

Sincerely,

Tatsuo Ito, M.D., Ph.D.

Department of Public Health

Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences

Phone: +81-86-235-7184 Fax: +81-86-226-0715

Email Address: tataito@okayama-u.ac.jp