

PEOPLE FOR
THE ETHICAL
TREATMENT
OF ANIMALS

March 19, 2024

Sheila Garrity, JD, MPH, MBA
Director
Office of Research Integrity

Alexander Runko, Ph.D.
Director
Office of Research Integrity
Division of Investigative Oversight

Via e-mail: AskORI@hhs.gov; Alexander.Runko@hhs.gov

Dear Ms. Garrity and Dr. Runko:

I'm writing on behalf of People for the Ethical Treatment of Animals (PETA) to request that the Office of Research Integrity (ORI) investigate NIH-funded Principal Investigator Augustine M.K. Choi for research misconduct.

Dr. Choi, who is the former Stephen and Suzanne Weiss Dean of Weill Cornell Medicine and provost for medical affairs of Cornell University, has had at least ten publications retracted or withdrawn in the past several months for image duplication and/or manipulation.^{1,2,3,4,5,6,7,8,9,10} Each of these publications was determined to have had either duplicated image panels, spliced images, and/or included images from previous publications.^{11,12,13,14,15,16,17,18} Additionally, at least four of Dr. Choi's publications have required corrections,^{19,20,21, 22} and there are several other publications for which Dr. Choi is a co-author and/or corresponding author that have concerns about duplicated or manipulated images^{23,24,25,26,27,28} as noted on the online forum [PubPeer](#).

Dr. Choi has received more than \$71 million dollars of research funding from the NIH and is currently receiving funding through multiple active projects from the National Heart, Lung, and Blood Institute (NHLBI), including Projects P01HL114501, R33HL153011, and T32HL134629. One of these grants, Project [R33HL153011](#), involves a carbon monoxide treatment for acute respiratory distress with human volunteers, despite the fact that several of Choi's publications describing the use of this treatment with nonhuman animals have been retracted due to image manipulation.^{6,7,9,10}

It is also worth noting that several of the publications called into question involve invasive procedures being performed on live animals, including deliberately infecting mice with lethal doses of infectious agents, cecal ligation punctures used to induce sepsis in mice, and in some cases, procedures that induce lung fibrosis via silica administration.

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- PETA Foundation (U.K.)

As you may recall, [PETA submitted a response to a 2022 Request for Information \(RFI\)](#) (see pg. 18), asking that for all research involving vulnerable populations, including nonhuman animals, ORI increase both scrutiny and subsequent penalties. We hope that you take these recommendations seriously given the number of research misconduct cases that involve invasive experiments on nonhuman animals.

We request ORI investigate Dr. Choi to determine whether the problematic images published in the publications listed above were the result of research misconduct, as well as review the investigator's submitted grant applications for similarly deliberate manipulation of images and data.

Thank you for your time and consideration.

Sincerely,



Katherine V. Roe Ph.D.

Chief Scientist
Laboratory Investigations Department

¹ Moon JS, Nakahira K, Chung KP, et al. NOX4-dependent fatty acid oxidation promotes NLRP3 inflammasome activation in macrophages [retracted in: *Nat Med.* 2023 Dec;29(12):3272]. *Nat Med.* 2016;22(9):1002-1012. doi:10.1038/nm.4153

² Moon JS, Hisata S, Park MA, et al. mTORC1-Induced HK1-Dependent Glycolysis Regulates NLRP3 Inflammasome Activation [retracted in: *Cell Rep.* 2023 Jun 27;42(6):112639]. *Cell Rep.* 2015;12(1):102-115. doi:10.1016/j.celrep.2015.05.046

³ Ryter SW, Choi AM, Kim HP. Profibrogenic phenotype in caveolin-1 deficiency via differential regulation of STAT-1/3 proteins [retracted in: *Biochem Cell Biol.* 2023 Aug 1;101(4):380]. *Biochem Cell Biol.* 2014;92(5):370-378. doi:10.1139/bcb-2014-0075

⁴ Siempos II, Ntaidou TK, Filippidis FT, Choi AM. RETRACTED: Effect of early versus late or no tracheostomy on mortality of critically ill patients receiving mechanical ventilation: a systematic review and meta-analysis [retracted in: *Lancet Respir Med.* 2015 Feb;3(2):102]. *Lancet Respir Med.* Published online June 26, 2014. doi:10.1016/S2213-2600(14)70125-0

⁵ Slebos DJ, Ryter SW, van der Toorn M, et al. Mitochondrial localization and function of heme oxygenase-1 in cigarette smoke-induced cell death [retracted in: *Am J Respir Cell Mol Biol.* 2023 Apr;68(4):463]. *Am J Respir Cell Mol Biol.* 2007;36(4):409-417. doi:10.1165/rcmb.2006-0214OC

⁶ Song R, Mahidhara RS, Liu F, Ning W, Otterbein LE, Choi AM. Carbon monoxide inhibits human airway smooth muscle cell proliferation via mitogen-activated protein kinase pathway [retracted in: *Am J Respir Cell Mol Biol.* 2023 Jul;69(1):118]. *Am J Respir Cell Mol Biol.* 2002;27(5):603-610. doi:10.1165/rcmb.4851

⁷ Wang X, Wang Y, Lee SJ, Kim HP, Choi AM, Ryter SW. Carbon monoxide inhibits Fas activating antibody-induced apoptosis in endothelial cells [retracted in: *Med Gas Res.* 2023 Oct-Dec;13(4):180]. *Med Gas Res.* 2011;1(1):8. Published 2011 May 18. doi:10.1186/2045-9912-1-8

⁸ Moon JS, Lee S, Park MA, et al. UCP2-induced fatty acid synthase promotes NLRP3 inflammasome activation during sepsis. *J Clin Invest.* 2015;125(2):665-680. doi:10.1172/JCI78253

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- ⁹ Song R, Ning W, Liu F, et al. Regulation of IL-1beta -induced GM-CSF production in human airway smooth muscle cells by carbon monoxide [retracted in: *Am J Physiol Lung Cell Mol Physiol*. 2020 Dec 1;319(6):L1062]. *Am J Physiol Lung Cell Mol Physiol*. 2003;284(1):L50-L56. doi:10.1152/ajplung.00212.2002
- ¹⁰ Wang X, Wang Y, Kim HP, Nakahira K, Ryter SW, Choi AM. Carbon monoxide protects against hyperoxia-induced endothelial cell apoptosis by inhibiting reactive oxygen species formation [published correction appears in *J Biol Chem*. 2024 Feb 19;300(3):105758]. *J Biol Chem*. 2007;282(3):1718-1726. doi:10.1074/jbc.M607610200
- ¹¹ Moon JS, Nakahira K, Chung KP, et al. Retraction Note: NOX4-dependent fatty acid oxidation promotes NLRP3 inflammasome activation in macrophages [retraction of: *Nat Med*. 2016 Sep;22(9):1002-12]. *Nat Med*. 2023;29(12):3272. doi:10.1038/s41591-023-02723-8
- ¹² Moon JS, Hisata S, Park MA, et al. Retraction Notice to: mTORC1-Induced HK1-Dependent Glycolysis Regulates NLRP3 Inflammasome Activation [retraction of: *Cell Rep*. 2015 Jul 7;12(1):102-115]. *Cell Rep*. 2023;42(6):112639. doi:10.1016/j.celrep.2023.112639
- ¹³ Retraction: Profibrogenic phenotype in caveolin-1 deficiency via differential regulation of STAT-1/3 proteins [retraction of: *Biochem Cell Biol*. 2014 Oct;92(5):370-8]. *Biochem Cell Biol*. 2023;101(4):380. doi:10.1139/bcb-2023-0089
- ¹⁴ The Editors Of The Lancet Respiratory Medicine. Retraction and republication-Effect of early versus late or no tracheostomy on mortality of critically ill patients receiving mechanical ventilation: a systematic review and meta-analysis [retraction of: *Lancet Respir Med*. 2014 Jun 26;. pii: S2213-2600(14)70125-0. doi: 10.1016/S2213-2600(14)70125-0]. *Lancet Respir Med*. 2015;3(2):102. doi:10.1016/S2213-2600(15)00005-3
- ¹⁵ Retraction: Mitochondrial Localization and Function of Heme Oxygenase-1 in Cigarette Smoke-induced Cell Death [retraction of: *Am J Respir Cell Mol Biol*. 2007 Apr;36(4):409-17]. *Am J Respir Cell Mol Biol*. 2023;68(4):463. doi:10.1165/rcmb.6804Retraction
- ¹⁶ Retraction: Carbon Monoxide Inhibits Human Airway Smooth Muscle Cell Proliferation via Mitogen-activated Protein Kinase Pathway [retraction of: *Am J Respir Cell Mol Biol*. 2002 Nov;27(5):603-10]. *Am J Respir Cell Mol Biol*. 2023;69(1):118. doi:10.1165/rcmb.691Retraction
- ¹⁷ Retraction [retraction of: *Am J Physiol Lung Cell Mol Physiol*. 2003 Jan;284(1):L50-6]. *Am J Physiol Lung Cell Mol Physiol*. 2020;319(6):L1062. doi:10.1152/ajplung.00212.2002_RET
- ¹⁸ Retraction: Carbon monoxide inhibits Fas activating antibody-induced apoptosis in endothelial cells [retraction of: *Med Gas Res*. 2011 May 18;1(1):8]. *Med Gas Res*. 2023;13(4):180. doi:10.4103/2045-9912.374045
- ¹⁹ Lee CM, He CH, Park JW, et al. Correction: Chitinase 1 regulates pulmonary fibrosis by modulating TGF- β /SMAD7 pathway via TGFBRAP1 and FOXO3. *Life Sci Alliance*. 2023;6(5):e202302065. Published 2023 Apr 10. doi:10.26508/lsa.202302065
- ²⁰ Zhang X, Shan P, Otterbein LE, et al. Correction: Carbon monoxide inhibition of apoptosis during ischemia-reperfusion lung injury is dependent on the p38 mitogen-activated protein kinase pathway and involves caspase 3. *J Biol Chem*. 2023;299(10):105304. doi:10.1016/j.jbc.2023.105304
- ²¹ Li W, Liu H, Zhou JS, et al. Correction: Caveolin-1 inhibits expression of antioxidant enzymes through direct interaction with nuclear erythroid 2 p45-related factor-2 (Nrf2). *J Biol Chem*. 2020;295(28):9766. doi:10.1074/jbc.AAC120.014808
- ²² Lam HC, Cloonan SM, Bhashyam AR, et al. Histone deacetylase 6-mediated selective autophagy regulates COPD-associated cilia dysfunction. *J Clin Invest*. 2020;130(11):6189. doi:10.1172/JCI143863
- ²³ Lee SJ, Zhang J, Choi AM, Kim HP. Mitochondrial dysfunction induces formation of lipid droplets as a generalized response to stress. *Oxid Med Cell Longev*. 2013;2013:327167. doi:10.1155/2013/327167
- ²⁴ Li CJ, Ning W, Matthay MA, Feghali-Bostwick CA, Choi AM. MAPK pathway mediates EGR-1-HSP70-dependent cigarette smoke-induced chemokine production. *Am J Physiol Lung Cell Mol Physiol*. 2007;292(5):L1297-L1303. doi:10.1152/ajplung.00194.2006
- ²⁵ Kim HP, Wang X, Chen ZH, et al. Autophagic proteins regulate cigarette smoke-induced apoptosis: protective role of heme oxygenase-1. *Autophagy*. 2008;4(7):887-895. doi:10.4161/auto.6767
- ²⁶ Wang X, Wang Y, Zhang J, Kim HP, Ryter SW, Choi AM. FLIP protects against hypoxia/reoxygenation-induced endothelial cell apoptosis by inhibiting Bax activation. *Mol Cell Biol*. 2005;25(11):4742-4751. doi:10.1128/MCB.25.11.4742-4751.2005
- ²⁷ Romero F, Hong X, Shah D, et al. Lipid Synthesis Is Required to Resolve Endoplasmic Reticulum Stress and Limit Fibrotic Responses in the Lung. *Am J Respir Cell Mol Biol*. 2018;59(2):225-236. doi:10.1165/rcmb.2017-0340OC
- ²⁸ Yasuoka H, Zhou Z, Pilewski JM, Oury TD, Choi AM, Feghali-Bostwick CA. Insulin-like growth factor-binding protein-5 induces pulmonary fibrosis and triggers mononuclear cellular infiltration. *Am J Pathol*. 2006;169(5):1633-1642. doi:10.2353/ajpath.2006.060501.