

Professor May R. Berenbaum
Editor-in-Chief, PNAS

Professor Peter D. Adams
Co-Editor-in-Chief, Aging Cell

February 18, 2020

Dear Professors Adams and Berenbaum,

We wish to alert you to several serious errors in a PNAS paper, "Impaired lipid metabolism by age-dependent DNA methylation alterations accelerates aging," published online February 6, 2020, <https://doi.org/10.1073/pnas.1919403117>. Key data in this paper were taken without attribution from our earlier paper in Aging Cell and mislabeled with respect to the animals involved.

Our Aging Cell paper, "The lipid elongation enzyme ELOVL2 is a molecular regulator of aging in the retina," was available as a preprint on bioRxiv on October 8, 2019. The paper was submitted on October 23, 2019, accepted for publication on December 11, and published online on January 13, 2020. We attach the bioRxiv version, which remains publicly available <https://www.biorxiv.org/content/10.1101/795559v2>. Kang Zhang is a co-author on both papers and the only shared author between them. He agreed to the original bioRxiv manuscript and to its publication. Dr. Zhang was aware of the content and of the key dates mentioned above.

We note several problems with the PNAS paper, including inappropriate re-use of published data, misrepresentation of the data, and failure to cite the source of published data.

1. Images used in Figure 3E and Supplementary Figure 4 were generated by Daniel Chen and Dorota Skowronska-Krawczyk, neither of whom was credited in, nor aware of, the PNAS manuscript. Instrument records in the lower-left corner of the original images (blurred in the PNAS figures) confirm that these were taken by Drs. Chen and Skowronska-Krawczyk. See attached image files.

2. Fundus images in Figure 3E of the PNAS paper are not from the animals claimed. The image intended to show a young knockout (59 bp deletion in exon 3, generated in China) is actually an image made at UCSD of a 24-month-old C234W substitution mutant generated at UCSD in collaboration with Bruce Hamilton's laboratory and published in our Aging Cell paper.

3. All six fundus images in Figure S4C of the PNAS paper are further problematic. The three images claimed to be from an Elov12 knockout are taken from our paper and are from the C234W substitution mutations. The images claimed to be from 16-month old animals are instead 6-month old animals taken from Figure S5 of the Aging Cell paper. The 8-month wild-type sample is again from a 6-month old animal in our paper. The

image claimed to be from an 8-month old null is instead a 4-month old C234W mutant. The image claimed to be from a 4-month old null is also from a C234W animal.

4. The duplicated data in the PNAS publication did not cite the Aging Cell paper as its source, despite the overlap of a senior author. The PNAS paper indicates that it was sent for review on November 6 (a month after we posted the bioRxiv version of the Aging Cell paper and we note that PNAS has explicit instructions for citing preprints <https://www.pnas.org/page/authors/format>), and it was contributed for publication on December 17, 2019—after our paper was accepted for publication in Aging Cell and after Dr. Zhang was informed of this.

We, therefore, ask for corrective action by PNAS. The image duplication and misattribution cannot meet PNAS standards. If intentional, it would be misconduct. If unintentional, it is inconsistent with data handling practices adequate to maintain confidence in claims based on those data. As the PNAS paper appears to involve several laboratories, we recommend that the current version be retracted and later replaced with a version that can withstand scrutiny, as a means to protect both the integrity of the journal and the reputations of authors who were not involved in misuse or misrepresentation of our data.

Sincerely,

Attached:

1. PowerPoint presentation comparing figures.
2. Zip file with original images.