



# Retraction Note: *Bacopa monnieri* attenuates glutamate-induced nociception and brain mitochondrial toxicity in zebrafish

Mahima Sharma<sup>1</sup> · Pankaj Gupta<sup>2</sup> · Debapriya Garabadu<sup>1,3</sup>

Published online: 2 September 2023

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

**Metabolic Brain Disease (2021) 37:383–396**  
<https://doi.org/10.1007/s11011-021-00874-6>

The Editor-in-Chief has retracted this article. After publication, concerns were raised regarding data similarities between Fig. 5 in this article and the authors' other works in different animal models published within a similar time frame (Varshney V Garabadu D 2021, Singh NK & Garabadu D 2021). Further checks by the Publisher have found that in Fig. 7, all flow cytometry plots appear to have a high number of identical data points in Q4 (with rotation or flipping), as well as other areas of high similarity among the plots. Some of these flow cytometry plots also appear highly similar to Fig. 9 in another article from the same author group Varshney V and Garabadu D (2021).

The authors have stated that the raw data are not presently available.

The Editor-in-Chief therefore no longer has confidence in the presented data.

None of the authors agree to this retraction.

## References

- Varshney V, Garabadu D (2021) Ang (1–7)/Mas receptor-axis activation promotes amyloid beta-induced altered mitochondrial bioenergetics in discrete brain regions of Alzheimer's disease-like rats. *Neuropeptides* 86:102122. <https://doi.org/10.1016/j.npep.2021.102122>
- Singh NK, Garabadu D (2021) Alpha7 nicotinic acetylcholine receptor down regulation impairs mitochondrial function in streptozotocin-induced sporadic Alzheimer's disease model in rats. *Indian J Pharm Educ Res* 55:153–163. <https://doi.org/10.5530/ijper.55.1.17>
- Varshney V, Garabadu D (2021) Naringin Exhibits Mas receptor-mediated neuroprotection against amyloid Beta-Induced Cognitive deficits and mitochondrial toxicity in rat brain. *Neurotox Res* 39:1023–1043. <https://doi.org/10.1007/s12640-021-00336-y>

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

The online version of the original article can be found at <https://doi.org/10.1007/s11011-021-00874-6>.

✉ Debapriya Garabadu  
debapriya.2007@gmail.com;  
debapriya.garabadu@cup.edu.in

<sup>1</sup> Division of Pharmacology, Institute of Pharmaceutical Research, GLA University, Mathura, India

<sup>2</sup> Drug Standardization Unit, DDPR Central Research Institute for Homoeopathy, Noida, Uttar Pradesh, India

<sup>3</sup> Department of Pharmacology, School of Health Sciences, Central University of Punjab, Bathinda 151001, India