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Correction: Aerobic exercise alleviates cognitive impairment in T2DM mice through gut microbiota

Shuping Ruan, Juan Liu, Xiaoqing Yuan, Xinhua Ye & Qing ZhangCorrection to: *Scientific reports* <https://doi.org/10.1038/s41598-025-07220-1>, published online 04 July 2025

The original version of this Article contained errors.

In Figure 5g, the β -actin loading control image in the Western blots panel was a duplication of the image for β -actin in Figure 5e.

The original Figure 5 and accompanying legend appear below.

In addition, the Funding statement was incorrect. It now reads:

"This study was supported by grants from the Science and Technology Project of Changzhou Health Commission (ZD202317, ZD202434) and the Clinical Research Project of Changzhou Medical Center of Nanjing Medical University (CMCC202310)."

The original Article has been corrected.

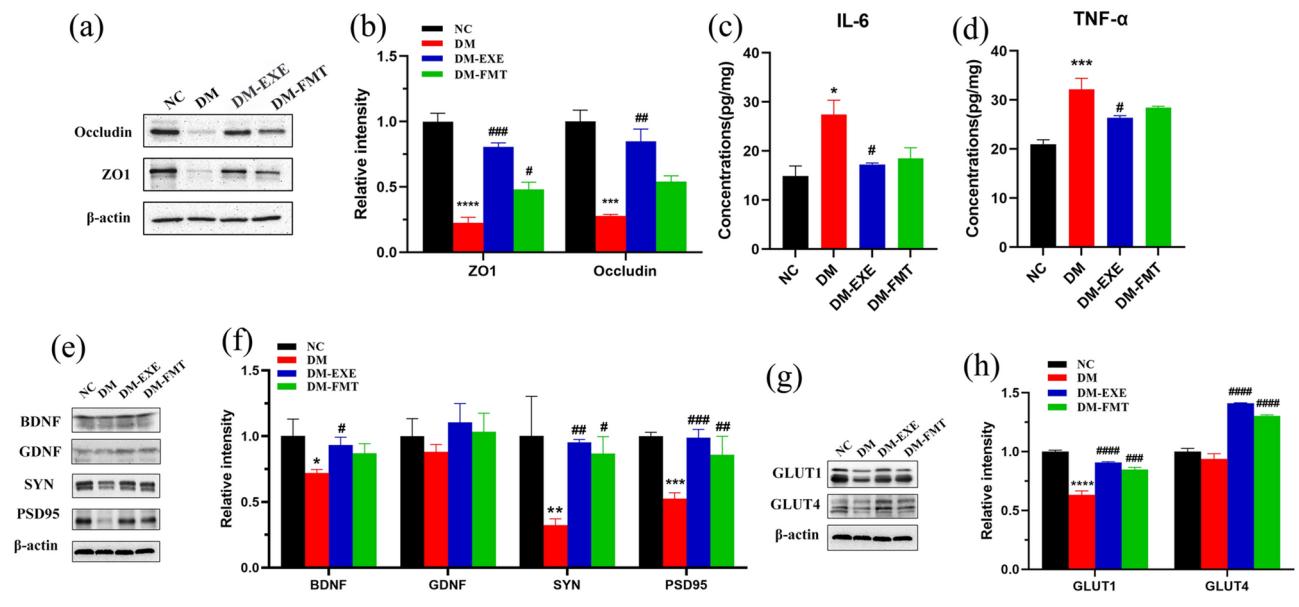


Fig. 5. The exploration on the mechanism of exercise alleviating cognitive impairment in T2DM mice through microbiota. **(a, b)** Western blot analysis for tight junction proteins (Occludin and ZO1) and their quantification in the colonic mucosa. Proinflammatory factors IL-6 **(c)** and TNF- α **(d)** in the hippocampus detected by ELISA. **(e, f)** Western blot analysis for neurotrophic factors (BDNF and GDNF), synaptic proteins (SYN and PSD95), and **(g, h)** glucose transporter (GLUT1 and GLUT4) in the hippocampus. The membrane images were cropped from different membranes to remove irrelevant parts (Supplementary Fig. S1). * $P < 0.05$, ** $P < 0.005$, *** $P < 0.001$, **** $P < 0.0001$ versus NC group. # $P < 0.05$, ## $P < 0.005$, ### $P < 0.001$, ##### $P < 0.0001$ versus DM group.

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