Alzheimer's Research & Therapy

CORRECTION

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Correction to: Preservation of dendritic spine morphology and postsynaptic signaling markers after treatment with solid lipid curcumin particles in the 5xFAD mouse model of Alzheimer's amyloidosis

Panchanan Maiti[1,2,3,4,5*], Zackary Bowers[1,2], Ali Bourcier-Schultz[5], Jarod Morse[5] and Gary L. Dunbar[1,2,3,4*]

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Following the publication of the original article [1] the authors noticed errors in the published Figs. 2, 4 and 5. The original article [1] has been updated.

Below are the corrected Figs. 2, 4 and 5.

Author details
[1]Field Neurosciences Institute Laboratory for Restorative Neurology, Central Michigan University, Mt. Pleasant, MI 48859, USA. [2]Program in Neuroscience, Central Michigan University, Mt. Pleasant, MI 48859, USA. [3]Department of Psychology, Central Michigan University, Mt. Pleasant, MI 48859, USA. [4]Field Neurosciences Institute, Ascension St. Mary's Hospital, Saginaw, MI 48604, USA. [5]College of Health and Human Services, Saginaw Valley State University, Saginaw, MI 48710, USA.

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1. Maiti P, Bowers Z, Bourcier-Schultz A, et al. Preservation of dendritic spine morphology and postsynaptic signaling markers after treatment with solid lipid curcumin particles in the 5xFAD mouse model of Alzheimer's amyloidosis. Alz Res Therapy. 2021;13:37. https://doi.org/10.1186/s13195-021-00769-9.

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*Correspondence: maiti1p@cmich.edu; dunba1g@cmich.edu
[4] Field Neurosciences Institute, Ascension St. Mary's Hospital, Saginaw, MI 48604, USA
[5] College of Health and Human Services, Saginaw Valley State University, Saginaw, MI 48710, USA
Full list of author information is available at the end of the article

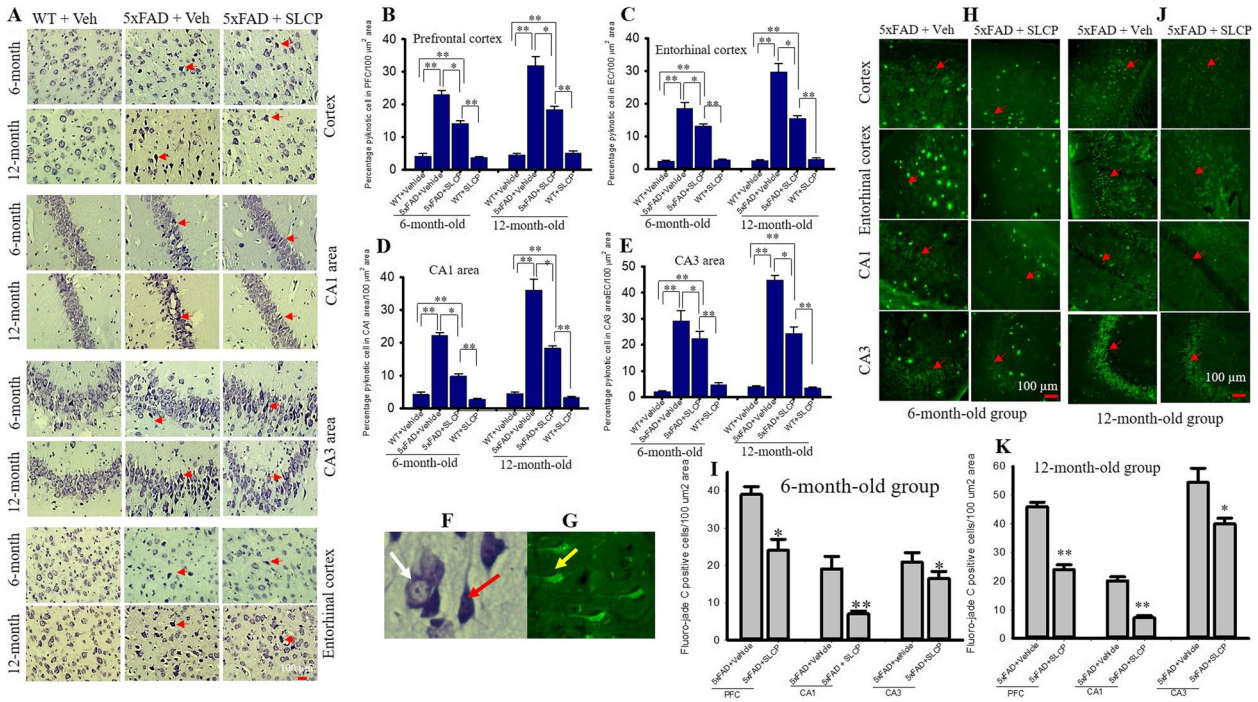

Fig. 2 SLCP treatment decreased pyknotic cells and degenerated neurons in PFC and hippocampus and entorhinal cortex of 5xFAD mice. Six and twelve-month-old 5xFAD and age-matched control mice were treated with SLCP (100 mg/kg) or vehicle for 2 months at which they were euthanized, and their brains were perfused with 4% paraformaldehyde. The brains were embedded in paraffin and cut on a rotary microtome into 5-µm coronal sections which were stained with 0.1% cresyl violet. Images were taken through compound light microscope using 40x objectives (total magnification 400x). There was a significant increase in the percentage of pyknotic cells in the PFC (**a**, **b**), and in the EC (**a**, **c**) and CA1 (**a**, **d**) and CA3 (**a**, **e**) areas of hippocampus of the vehicle-treated 5xFAD mice, but these increases were mitigated by SLCP treatments. **f** Image with the white arrow indicating normal and the red arrow indicating pyknotic neurons. **h**–**k** Forty-micron coronal sections were stained with fluoro-jade C (FJC) solution (0.0001%). Images were taken using a fluorescent microscope with a 20x objective (total magnification = × 200). There were significant increases in the number of FJCs in PFC, and in the CA1 and CA3 areas of the hippocampus in the vehicle-treated 5xFAD mice in both 6- (**h**, **i**) and 12-month-old (**j**, **k**) mice, whereas SLCP treatment prevented these increases. g Yellow arrow indicating FJB positive degenerated neuron. *$p < 0.05$, **$p < 0.01$ in comparison to WT + vehicle, 5xFAD + SLCP, and WT + SLCP. Red arrows indicate FJC-positive degenerated neurons. Large fluorescent signals are Aβ plaques. Scale bar = 100 µm and is applicable to all images

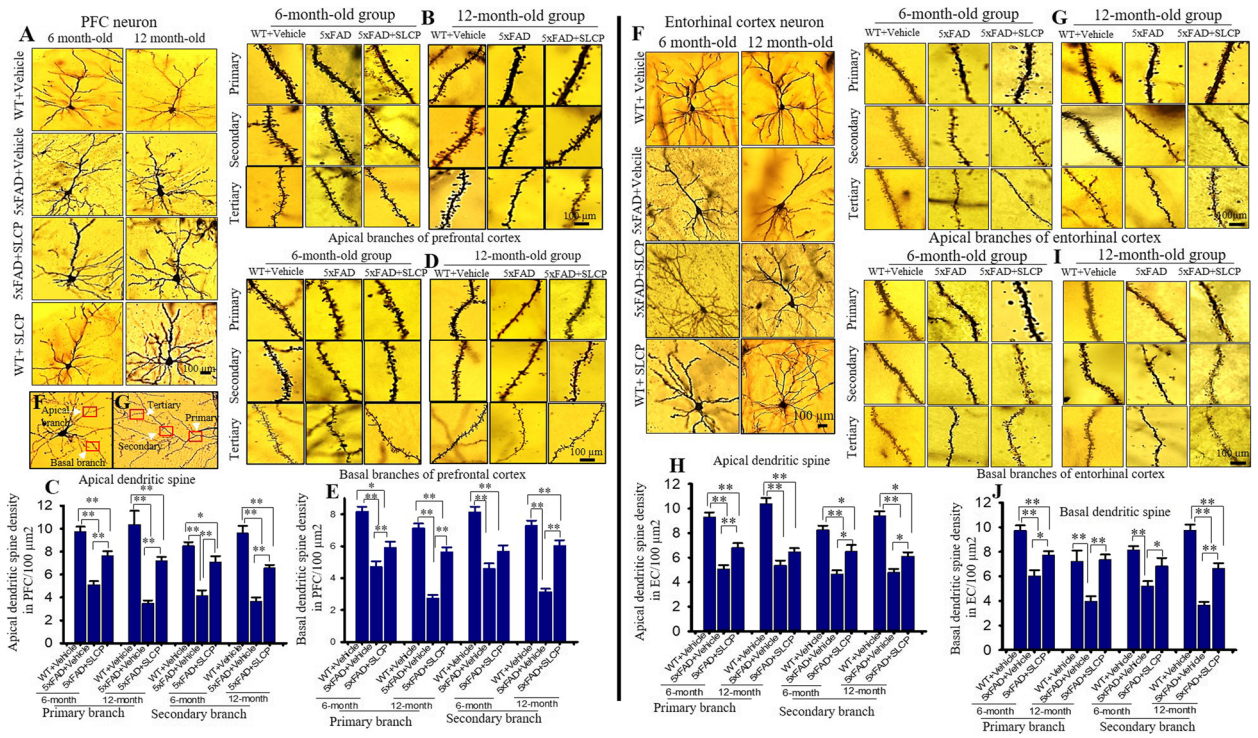

Fig. 4 SLCP treatment prevented abnormal dendritic arborization and loss of dendritic spines in the PFC and entorhinal cortex of 5xFAD mice. Six- and twelve-month-old 5xFAD and age-matched control mice were treated with SLCP (100 mg/kg) or vehicle for 2 months and then their brains were extracted and stained with Golgi-Cox stain over a 2-week period. Coronal sections (120 µm) were stained with 75% ammonium solution and 1% sodium thiosulphate. Cortical pyramidal neurons (layer II-III), along with dendritic spines from apical and basal branches (primary, secondary, and tertiary) were imaged using × 40 and × 100 objectives, respectively. **a** Representative images from layer II cortical pyramidal neurons processed with Golgi-Cox stain. Note that apical and basal branches are relatively less in vehicle-treated 5xFAD mice and that SLCP treatment prevented this loss. **b**, **d** Representative dendritic spine images from apical and basal branches. **c**, **e** Morphometric data revealed that the number of dendritic spines were significantly decreased in vehicle-treated 5xFAD mice in comparison to their WT counterparts, whereas SLCP treatment mitigated these losses. **f** Representative images of layer II pyramidal neurons from entorhinal cortex. Fewer apical and basal branches were observed less in the vehicle-treated 5xFAD mice, but SLCP treatments mitigated this loss. **g**, **i** Representative dendritic spine images from apical and basal branches. **h**, **j** Dendritic spine density was significantly decreased in 5xFAD mice in comparison to WT mice, but SLCP treatment prevented much of this loss. **k** Representative images of apical and basal dendrites. l Representative images of primary, secondary, and tertiary dendrites from apical branch. Scale bar = 100 µm and is applicable to all images. *$p < 0.05$, **$p < 0.01$ in comparison to WT + vehicle, 5xFAD + SLCP, and WT + SLCP

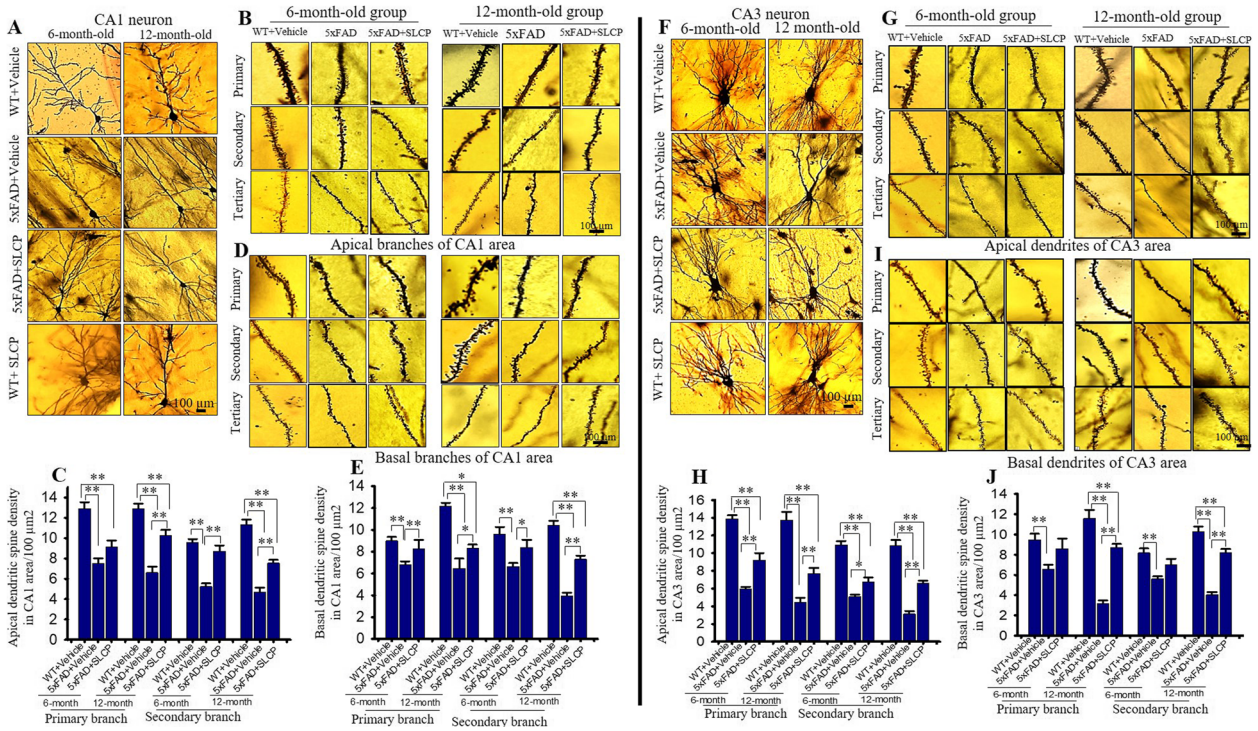

Fig. 5 SLCP treatment partially preserved dendritic arborization and dendritic spine number in hippocampus of 5xFAD mice. After 2 months of treatment with SLCP (100 mg/kg), the brains of the 6- and 12-month-old 5xFAD and age-matched control mice were processed using Golgi-Cox stain for 2 weeks. Coronal sections (120 µm) were stained with 75% ammonium solution and 1% sodium thiosulphate. CA1 and CA3 neurons and dendritic spines from apical and basal branches (primary, secondary, and tertiary) were imaged using 40x and 100x objectives, respectively (Olympus). **a**, **f** Representative images of CA1 and CA3 pyramidal neurons showed a decreased number of apical and basal branches in vehicle-treated 5xFAD mice in comparison to WT and SLCP-treated mice. **b**, **d** Representative dendritic spine images from apical and basal branches. **c**, **e** Morphometric data revealed that the number of dendritic spines in CA1 neurons were significantly decreased in vehicle-treated 5xFAD mice in comparison to WT and SLCP-treated mice. **g**, **i** Representative dendritic spine images from CA3 apical and basal branches, respectively. **h**, **j** Morphometric analyses showed that the number of dendritic spines were significantly decreased in vehicle-treated 5xFAD mice in comparison to their WT counterparts, and to SLCP-treated 5xFAD mice. Scale bar = 100 µm and is applicable to all images. *$p < 0.05$, **$p < 0.01$ in comparison to WT + vehicle, 5xFAD + SLCP, and WT + SLCP