Corrigendum

APP and APLP2 are essential at PNS and CNS synapses for transmission, spatial learning and LTP

Sascha W Weyer, Maja Klevanski, Andrea Delekate, Vootele Voikar, Dorothee Aydin, Meike Hick, Mikhail Filippov, Natalia Drost, Kristin L Schaller, Martina Saar, Miriam A Vogt, Peter Gass, Ayan Samanta, Andres Jäschke, Martin Korte, David P Wolfer, John H Caldwell and Ulrike C Müller

Correspondence to: u.mueller@urz.uni-hd.de

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Since the publication of this paper, the authors have noticed an error in the labelling of the x-axis in Figure 7C. The correct figure is shown here.

Figure 7 APPsα-DM mice show strong deficits in hippocampus-dependent learning and memory. (A) T-maze spontaneous alternation. % Alternations in six trials of task, chance level 50%. APPsα-DM mice showed less alternation than APLP2-KO mice (genotype $F(1,20) = 17.4$ $P < 0.0005$; one sample t -test versus 50%: APLP2-KO $t(13) = 14.0$ $P < 0.0001$, APPsα-DM $t(9) = 3.9$ $P < 0.0038$). APPsα-DM $n = 10$, APLP2-KO $n = 14$; graphs represent data pooled from two independent cohorts of female mice tested independently. (B) Radial-maze working memory (WM) errors by time. APLP2-KO control mice learned the test well, making less than two errors per trial at the end of training. APPsα-DM performed significantly worse, making on average 10 errors per trial at the beginning as well as at the end of training (genotype $F(1,7) = 8.0$ $P < 0.0256$, time $F(2,14) = 3.4$ $P < 0.0642$, time $\times$ genotype $F(2,14) = 2.2$ ns; time split by genotype: APPsα-DM $F(2,6) = 1.1$ ns, APLP2-KO $F(2,8) = 6.9$ $P < 0.0179$). APPsα-DM $n = 4$, APLP2-KO $n = 5$, all males. (C) Radial-maze, WM errors by bait. Working memory errors made before collection of baits 1–2, 3–4, 5–6, 7–8; averaged across trials. In both groups, the number of errors increased with the number of baits already collected, reflecting the increasing difficulty and challenge of working memory. In APPsα-DM, this increase was significantly steeper (genotype $F(1,7) = 11.3$ $P < 0.0121$, bait $F(3,21) = 89.9$ $P < 0.0001$, bait $\times$ genotype $F(3,21) = 11.3$ $P < 0.0001$). APPsα-DM $n = 4$, APLP2-KO $n = 5$, all males. (D) IC corner preference learning. Visits to the target corner during acquisition (sessions 1–2, 2–13, 13–14) and reversal (sessions 1–2, 3–7, 8–9), chance = 25% (dashed line). APPsα-DM preferred the target corner more strongly than APLP2-KO mice during acquisition were impaired at the beginning of reversal but were better at the end of the reversal (genotype $F(1,18) = 7.0$ $P < 0.0162$, phase $\times$ genotype $F(1,18) = 31.7$ $P < 0.0001$, time $F(2,36) = 430.9$ $P < 0.0001$, time $\times$ genotype $F(2,36) = 2.5$ $P < 0.0928$, time $\times$ phase $\times$ genotype $F(2,36) = 12.5$ $P < 0.0001$). APPsα-DM $n = 9$, APLP2-KO $n = 13$, all females. (E) IC patrolling task. Correct visits during sessions 1–2, 3–12, and 13–14. APPsα-DM showed strongly impaired learning (genotype $F(1,20) = 13.9$ $P < 0.0013$, time $F(2,40) = 100.9$ $P < 0.0001$, time $\times$ genotype $F(2,40) = 5.6$ $P < 0.0072$). APPsα-DM $n = 9$, APLP2-KO $n = 13$, all females. *** $P < 0.001$, ** $P < 0.01$, * $P < 0.05$.