

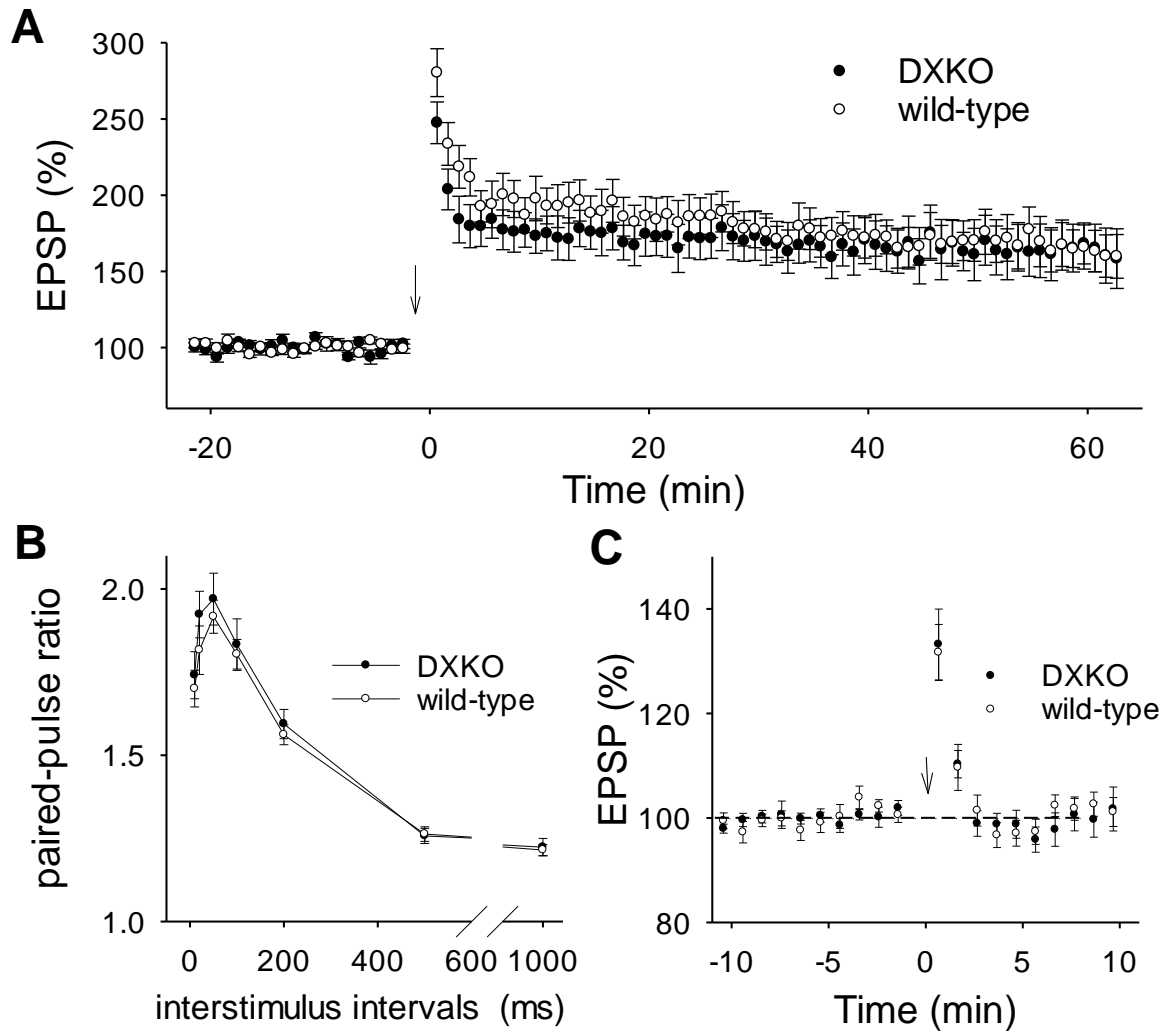
*Supplementary Material*

**Drebrin isoforms critically regulate NMDAR- and mGluR-dependent  
LTD induction**

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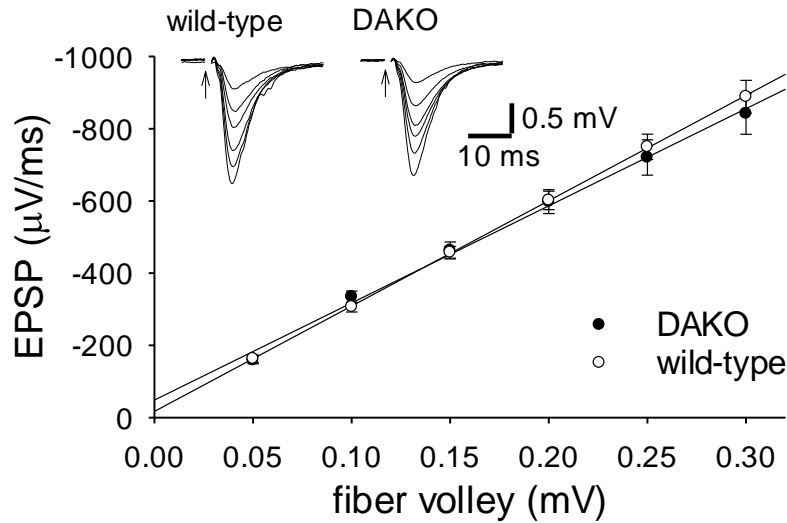
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## Supplementary Figures



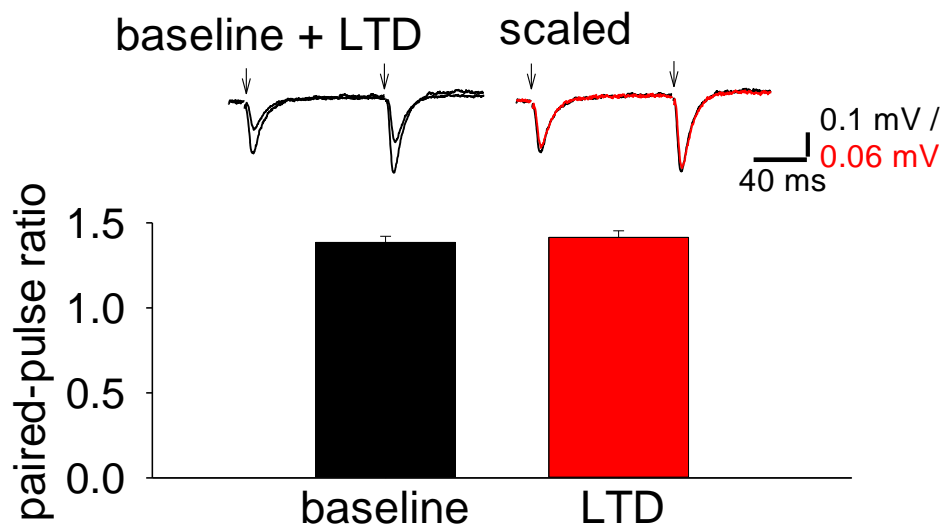
**Supplementary Figure 1.** LTP and presynaptic properties in developing DXKO mice.

(A) Summary of LTP experiment in P18–20 wild-type ( $n = 11$  from four mice) and DXKO mice ( $n = 9$  from four mice). LTP amplitude is similar between them. (B) Paired-pulse ratio was not different between wild-type and DXKO mice (wild-type,  $n = 10$  from three mice; DXKO,  $n = 12$  from three mice). (C) Posttetanic potentiation induced by a 100 Hz 1 sec stimulation was not different between wild-type and DXKO mice in the presence of  $50 \mu\text{M}$  D-APV (wild-type,  $n = 9$  from three mice; DXKO,  $n = 10$  from three mice).



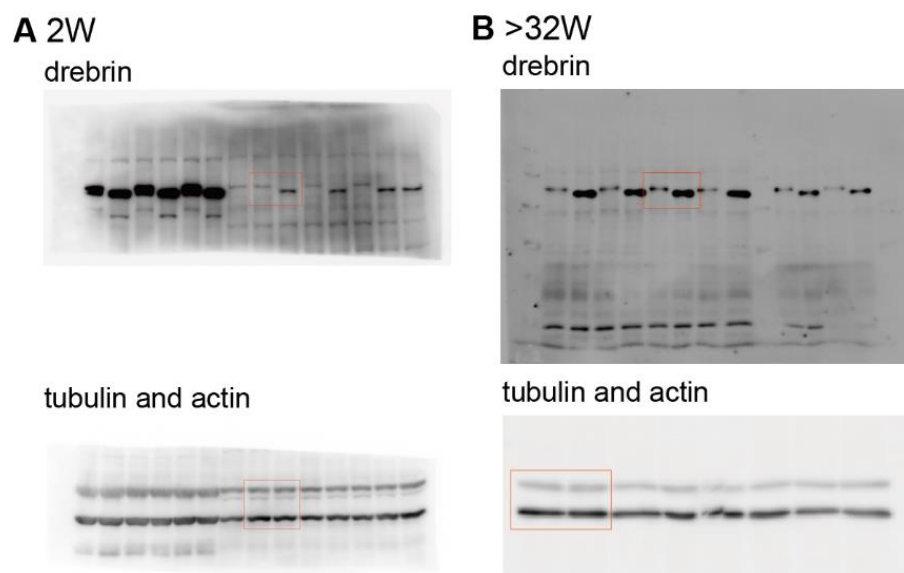
**Supplementary Figure 2.** Input-output relationship in developing wild-type and DAKO mice.

The input-output relationship is similar in postnatal 2-week-old wild-type and DAKO mice (wild-type,  $n = 11$  from four mice; DAKO,  $n = 13$  from four mice).



**Supplementary Figure 3.** LTD in adult DAKO mice is not associated with paired-pulse ratio.

Average of paired-pulse ratios before and 60 min after LFS in adult DAKO mice. No significant difference was detected in paired-pulse ratios before and 60 after LFS, suggesting that minimal presynaptic changes are involved in LTD in the adult hippocampus of DAKO mice ( $n = 5$  from two mice).



**Supplementary Figure 4.** Original images of western blot gels shown in Figures 5A (A) and 5B (B).