

Supporting Information

Faulkner *et al.* 10.1073/pnas.0806658105

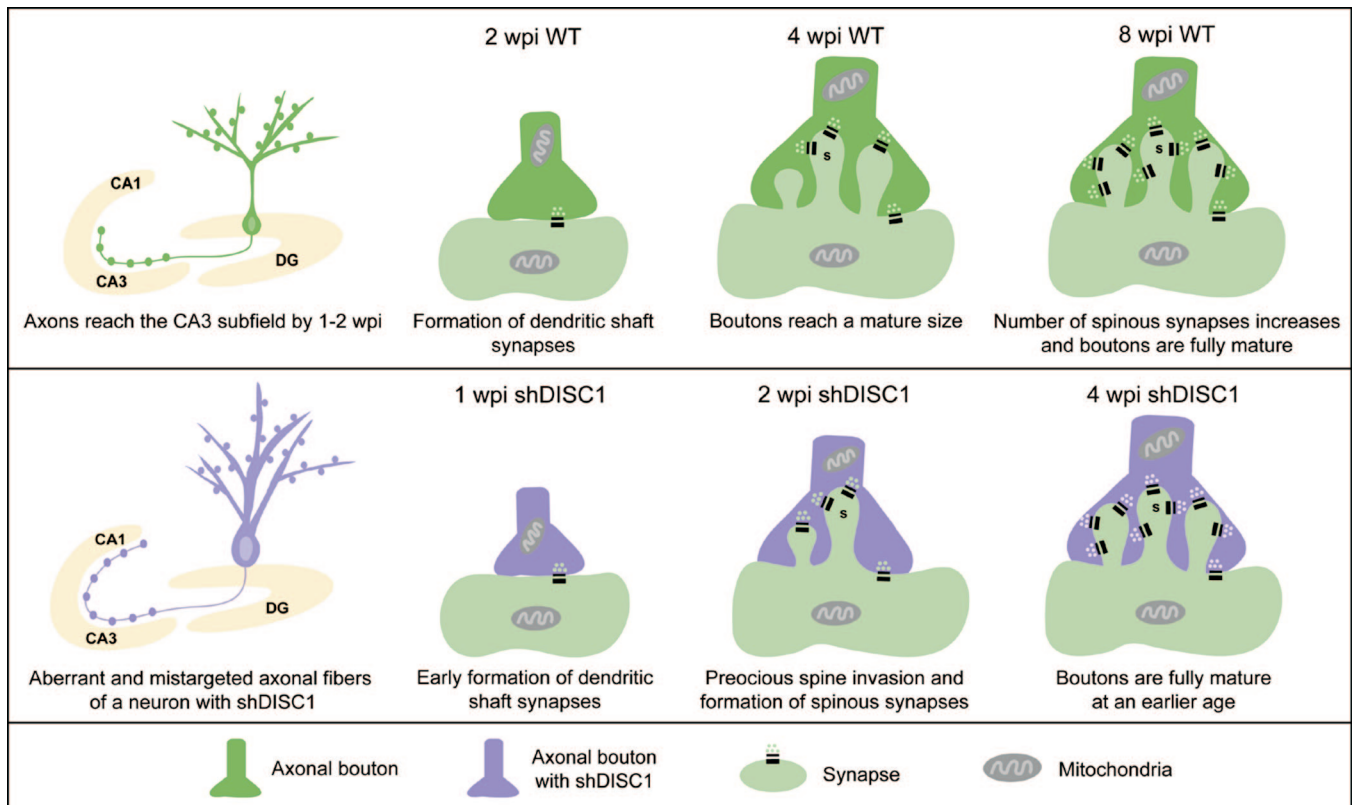


Fig. S1. A model for axonal development and formation of mossy fiber synaptic outputs of newborn DG cells in the adult hippocampus and the effects of DISC1 knockdown. Adult-born hippocampal granule cell mossy fibers reach the CA3 subfield and begin to form synaptic contacts with the dendritic shafts of CA3 pyramidal cells by 2 weeks. Adult-born mossy fiber boutons go through a series of development and maturation processes to reach morphologic maturity by 8 weeks. Adult-born DG cells with DISC1 knockdown (shDISC1) have mistargeted mossy fibers and an acceleration of synapse formation. These boutons begin to form synaptic contacts at 1 week and reach morphologic maturity by 4 weeks.

Table S1. Data and statistical comparisons for bouton morphologic analysis

| | Bouton perimeter | Shaft synapse density | Spine synapse density | Spine density | Synapses per spine |
|------------------------------------|--------------------------|-----------------------|-----------------------|--------------------------|--------------------------|
| 1.5 wpi WT (<i>n</i> = 4) | 4.88 ± 0.46* | 0.00 | 0.00* | 0.00* | 0.00* |
| 2 wpi WT (<i>n</i> = 8) | 6.91 ± 0.65* | 0.25 ± 0.14 | 0.00* | 0.00* | 0.00* |
| 4 wpi WT (<i>n</i> = 8) | 12.33 ± 1.58 | 0.12 ± 0.08 | 0.39 ± 0.07* | 0.43 ± 0.17 | 1.33 ± 0.26 [†] |
| 8 wpi WT (<i>n</i> = 8) | 11.31 ± 1.25 | 0.14 ± 0.07 | 0.65 ± 0.14 | 0.31 ± 0.07 | 2.25 ± 0.27 |
| 16 wpi WT (<i>n</i> = 6) | 11.72 ± 1.47 | 0.00 | 0.61 ± 0.13 | 0.28 ± 0.08 | 2.54 ± 0.34 |
| Unlabeled control (<i>n</i> = 12) | 11.72 ± 0.66 | 0.02 ± 0.02 | 0.88 ± 0.07 | 0.40 ± 0.05 | 2.45 ± 0.26 |
| 1 wpi shDISC1 (<i>n</i> = 5) | 4.10 ± 0.87* | 0.20 ± 0.20 | 0.00* | 0.00* | 0.00* |
| 1.5 wpi shDISC1 (<i>n</i> = 7) | 6.65 ± 0.64* | 0.18 ± 0.06 | 0.11 ± 0.09* | 0.11 ± 0.09 [†] | 0.29 ± 0.18* |
| 2 wpi shDISC1 (<i>n</i> = 7) | 8.67 ± 0.80 [†] | 0.09 ± 0.05 | 0.34 ± 0.11* | 0.22 ± 0.07 | 1.18 ± 0.40 [†] |
| 4 wpi shDISC1 (<i>n</i> = 4) | 12.54 ± 3.23 | 0.04 ± 0.02 | 0.57 ± 0.18 | 0.26 ± 0.09 | 2.27 ± 0.33 |
| 8 wpi shDISC1 (<i>n</i> = 11) | 11.47 ± 1.52 | 0.05 ± 0.02 | 0.42 ± 0.06* | 0.23 ± 0.04 | 2.68 ± 0.78 |
| 16 wpi shDISC1 (<i>n</i> = 10) | 12.20 ± 1.03 | 0.07 ± 0.03 | 0.63 ± 0.12 | 0.35 ± 0.06 | 2.27 ± 0.32 |
| 2 wpi shDISC1 CA1 (<i>n</i> = 3) | 5.86 ± 0.17 [‡] | 0.00 | 0.00 | 0.00 | 0.00 |

For all WT and DISC1 knockdown (shDISC1) boutons analyzed, the mean value ± SEM for each parameter is given. Values for WT and shDISC1 were compared with the control at each time point.

**P* < 0.01 vs. control.

[†]*P* < 0.05 vs. control.

[‡]*P* < 0.05 vs. 2 wpi shDISC1.