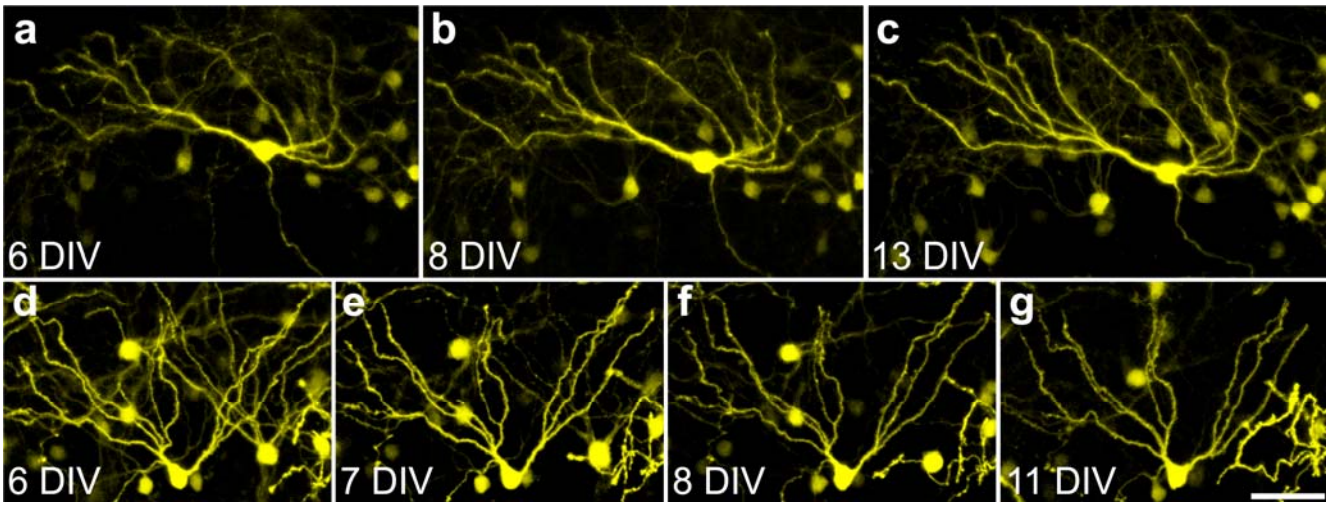
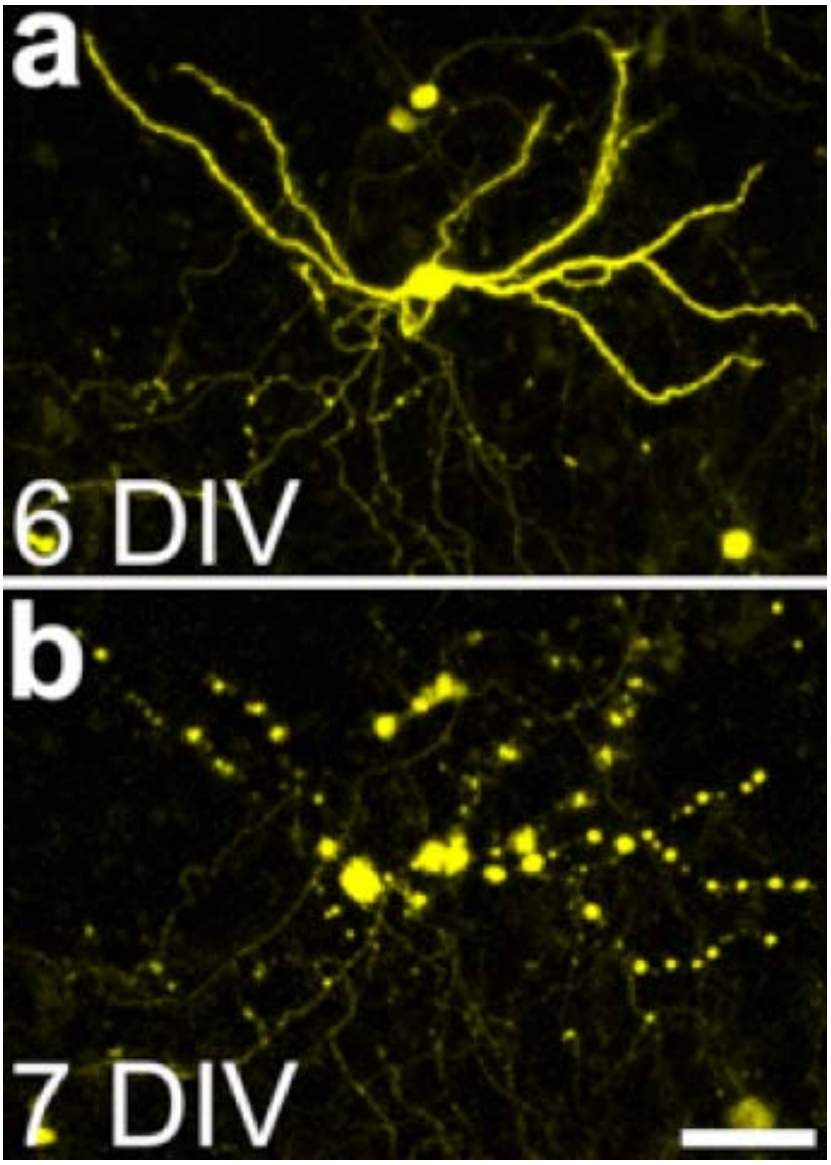
Supplementary Table 1: Recurrent basal dendrite formation and branch-to-dendrite conversion in control and kainic acid treated explants.

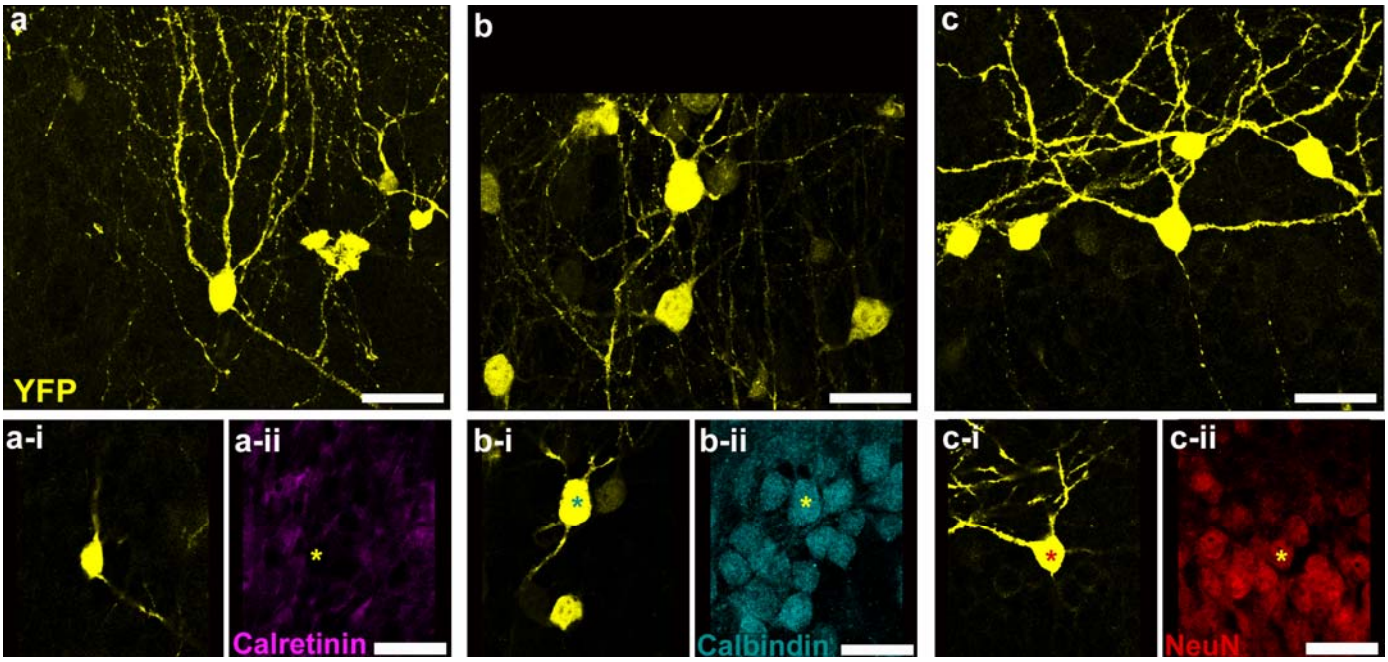
	Control (n=23 cells)	Kainic acid (n=20 cells)	Z-Test for significance P value
Percentage of granule cells developing recurrent basal dendrites	13%	25%	0.54
Percentage of granule cells exhibiting branch-to-dendrite conversion	22%	25%	0.90



Supplemental Figure 1: Serial confocal maximum projections of YFP-expressing granule cells exhibiting stable dendritic structure. Representative images of two YFP-expressing granule cells (**a-c** and **d-g**, respectively) not exhibiting dendritic rearrangements or granule cell dispersion over the course of the imaging period. Scale bar, 50 μm.



Supplemental Figure 2: Serial confocal maximum projections of a dying YFP-expressing granule cell. (**a**) Confocal maximum projections of a YFP-expressing dentate granule cell after 6 DIV, and during exposure to kainic acid one day later (**b**). This cell died during exposure, as is evident by the disruption of its processes and compartmentalization of YFP (**b**). Scale bar, 50 μm.



Supplemental Figure 3: Postmitotic age of YFP-expressing granule cells *in vitro*. **(a-c)** Representative confocal maximum projections of YFP-expressing dentate granule cells at seven days *in vitro*. **(a)** Optical sections through the granule cell soma showing the lack of colocalization between Thy1-YFP-expression **(a-i)** and calretinin-immunoreactivity **(a-ii,** yellow asterisk**)**. **(b)** Optical sections through a granule cell soma illustrating the colocalization of Thy1-YFP-expression **(b-I,** cyan asterisk**)** with calbindin (**b-ii,** yellow asterisk**)**. (**c)** Optical sections through a granule cell soma demonstrating colocalization of Thy1-YFP-expression **(c-i,** red asterisk**)** with NeuN **(c-ii,** yellow asterisk**)**. Scale bars, 30 μm.