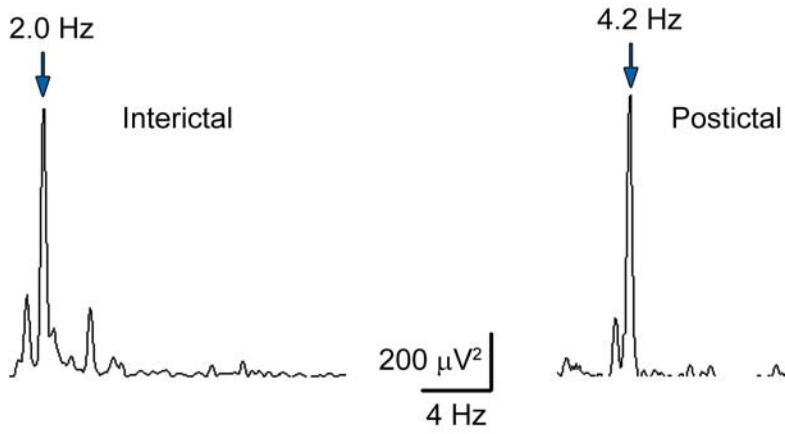


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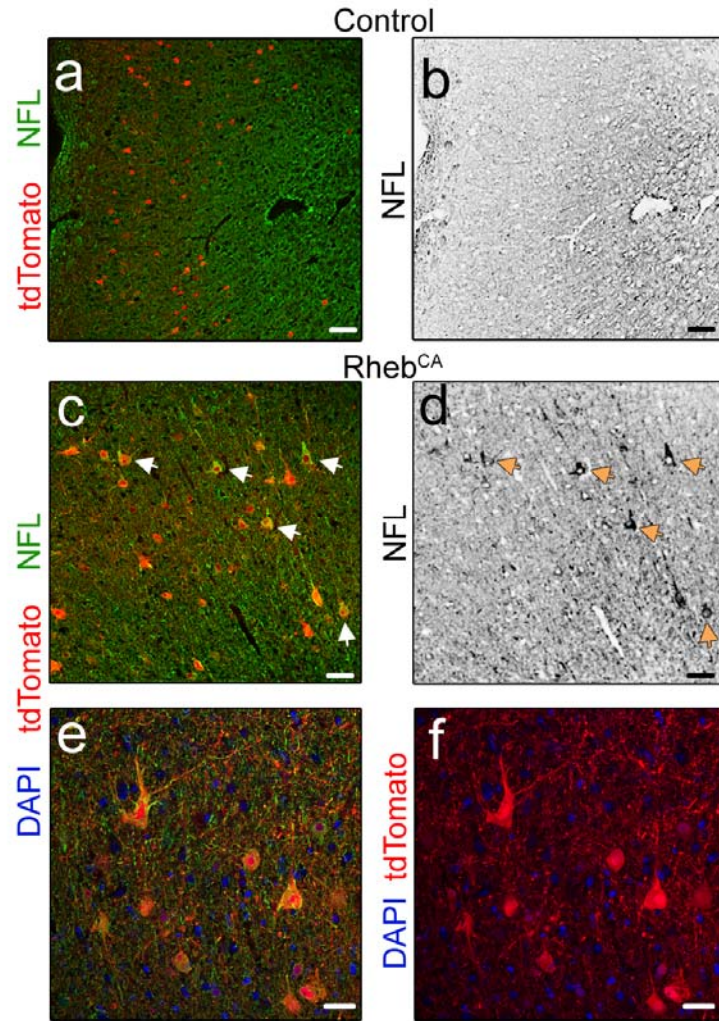
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5 **Supplementary Figure 1.** Power spectra of the pre- and post-ictal periods for the EEG

6 trace shown in Figure 1f.

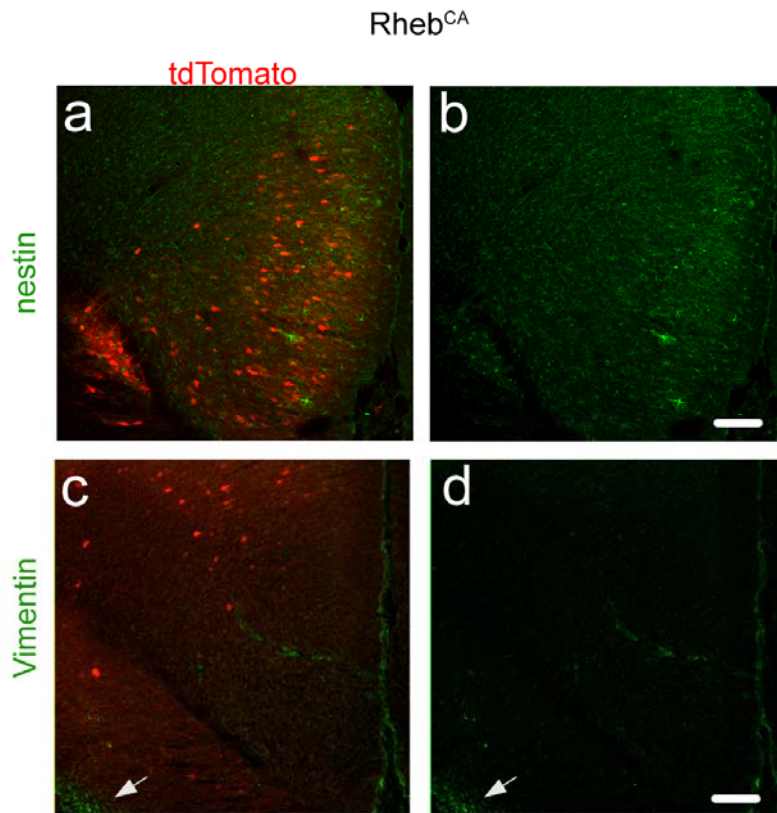
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9 **Supplementary Figure 2. Neurofilament light chain accumulates in the soma of**
 10 **dysmorphic neurons. (a and c)** Immunostain of neurofilament light chain (NF-L, green)
 11 in a coronal section containing control (a) or Rheb^{CA} (c) electroporated neurons (in red).
 12 Rheb^{CA}-electroporated neurons (arrows) accumulate NF-L immunoreactivity in the soma.
 13 **(b and d)** Gray scale rendering of the image in (a and c) without showing electroporated
 14 cells. **(e and f)** Higher magnification of the neurons shown in (c) illustrating that NF-L-
 15 immunopositive neurons are dysmorphic. Scale bar: 50 μ m.

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19 **Supplementary Figure 3.** Images of immunostaining for nestin (a and b) and vimentin
20 (b and c) in coronal sections containing Rheb^{CA}-electroporated neurons in the mPFC of
21 mice displaying seizures. The white arrow points towards the neurogenic zone illustrating
22 positive staining with the vimentin antibody. Scale bar: 100 μ m

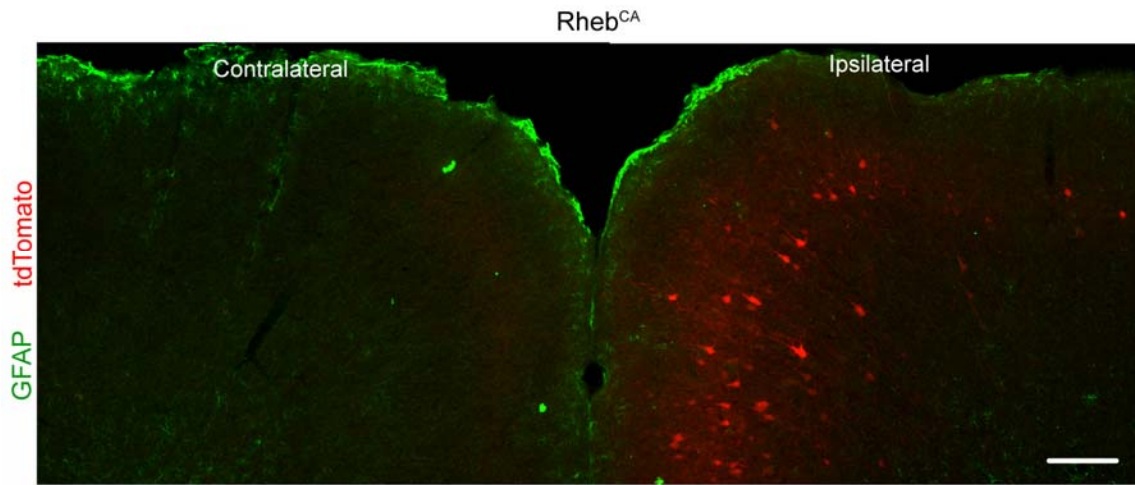
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30 **Supplementary Figure 4.** GFAP immunostaining (green) in coronal sections containing
31 Rheb^{CA}-electroporated neurons (red) in the anterior cingulate cortex of mice that did not
32 exhibit seizures.

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34 **Supplementary Table 1: Primary and Secondary antibodies**

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Antibody	Company	Catalog Number	Host animal	Concentration used in IHC
Primary				
GABA	Sigma	A2052	Rabbit	1:4000
GFAP	DAKO	Z0334	Rabbit	1:4000
MBP	Abcam	ab40390	Rabbit	1:2000
Nestin	Novus Biologicals	NB100-1604	Chicken	1:300
NeuN	Millipore	MAB 377	Mouse	1:4000
NF-L	Cell Signaling	C28E10	Rabbit	1:500
pS6 (S240/244)	Cell Signaling	D68F8	Rabbit	1:4000
SMI 311	Covance	SMI-311R	Mouse	1:4000
Secondary				
Vimentin	MBL	JM-3634-100	Rabbit	1:500
DAPI	Life Technologies	D1306		1:36000
Secondary				
α Mouse IgG Alexa Fluor 633	Life Technologies	A-21052	Goat	1:1000
α Mouse IgG Alexa Fluor 488	Life Technologies	A-11001	Goat	1:1000
α Rabbit IgG Alexa Fluor 555	Life Technologies	A-31572	Donkey	1:1000
α Rabbit IgG Alexa Fluor 647	Life Technologies	A-31573	Donkey	1:1000
α Chicken IgY Alexa Fluor 488	Life Technologies	A-11039	Goat	1:1000
α Goat IgG Alexa Fluor 568	Life Technologies	A-11057	Donkey	1:1000

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