**Fig. S1.** *CellRox fluorescence in a slice.* 

A. Effect of H<sub>2</sub>O<sub>2</sub> added to ACSF on the CellRox fluorescence.

**B.** Fluorescence transients following the exchange of glucose-ACSF for pyruvate-ACSF. Note the absence of fluorescence decline in a region of interest localized within a cell soma while prominent fluorescence decline in a region of interest involving the intracellular space. This effect may be explained by washing out the oxidized dye due to high superfusion rate.

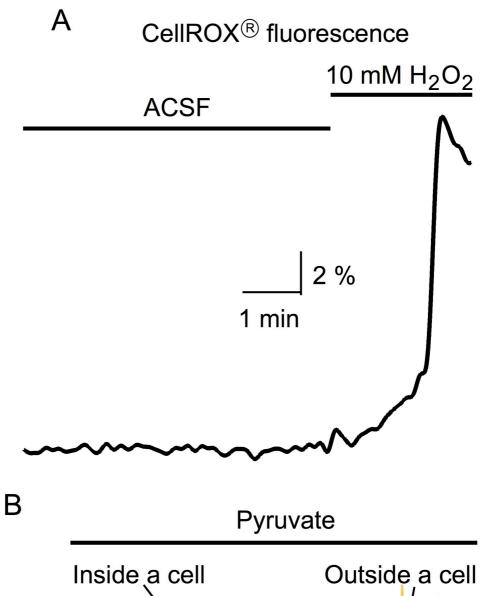
**Fig. S2.** *Effect of DHEA on network excitability.* 

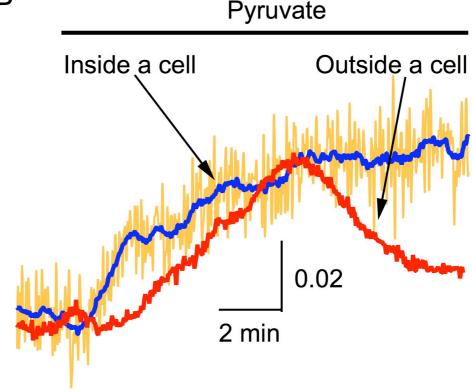
**A.** Increase of LFPs following application of 0.3 mM DHEA. **B.** Emergence of spontaneous network activity in the presence of DHEA.

**Fig. S3.**  $K^+$ -induced spreading depression in mouse cortex.

Supplementation of Tempol significantly reduced the rate of CSD occurrence although CSD events propagated efficiently.

Figure S1





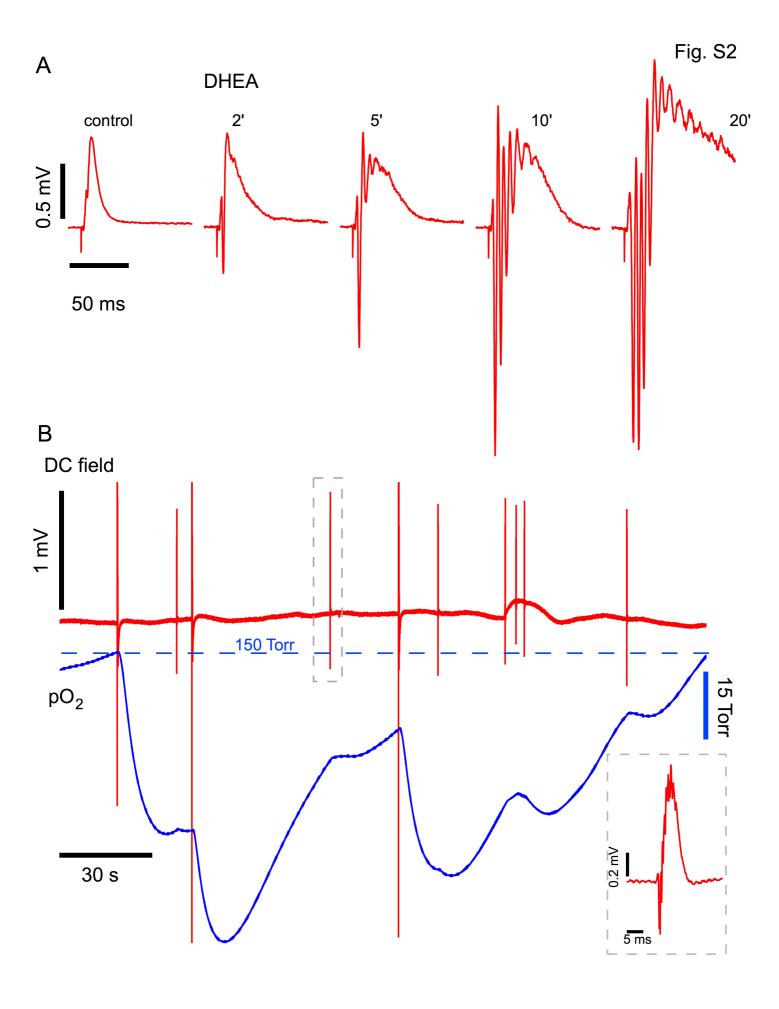


Figure S3

