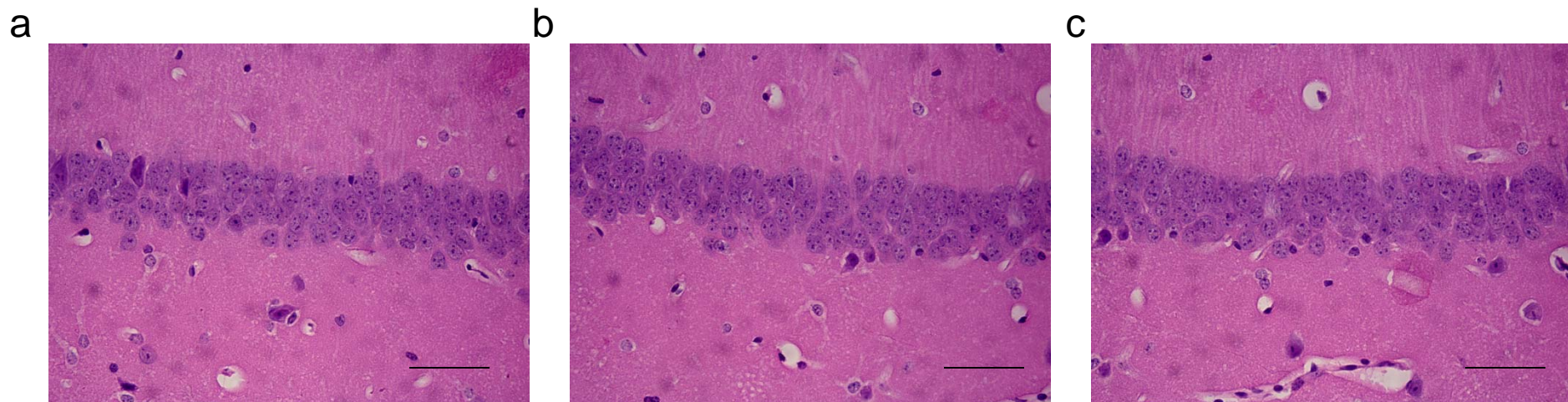


Supplemental Figure 1 Transgenic overexpression of SK2 increases survival of CA1 neurons following cardiac arrest. (a) Representative photomicrograph of hippocampal CA1 neurons from a wild type mouse stained with H&E 3 days after CA/CPR. Damaged neurons identified by the presence of pink eosinophilic cytoplasm and a dark pyknotic nucleus. (b) Representative photomicrograph of hippocampal CA1 neurons from an SK2 overexpressing transgenic mouse stained with H&E 3 days after CA/CPR. Damaged neurons identified by the presence of pink eosinophilic cytoplasm and a dark pyknotic nucleus. (c) Quantification of ischemic neurons in the CA1 region of the hippocampus 3 days after CA/CPR. Data is presented as mean \pm SEM. N = 7 and 10 for WT and SK2-OE, respectively. The symbol * indicates $P < 0.05$ compared to wild type.



Supplemental Figure 2. No damage observed in sham operated control mice. **a**, Representative photomicrograph of hippocampal CA1 neurons from a wild type mouse injected with vehicle (intraperitoneal (IP) injection) 30 minutes before and 6 hours after sham operation and stained with H&E 3 days later. **b**, Representative photomicrograph of hippocampal CA1 neurons from a wild type mouse injected with 16 mg/kg 1-EBIO (intraperitoneal (IP) injection) 30 minutes before and 6 hours after sham operation and stained with H&E 3 days later. **c**, Representative photomicrograph of hippocampal CA1 neurons from a wild type mouse injected with 0.1 mg/kg apamin (intraperitoneal (IP) injection) 30 minutes before and 6 hours after sham operation and stained with H&E 3 days later.

	Sham Vehicle	Sham 1-EBIO	CA/CPR Vehicle	CA/CPR 1-EBIO
Total Distance Day -1 (cm)	10790±381	11124±388	11043±370	9704±345
Total Distance Day 5 (cm)	10405±331	9691±294	9901±664	7987±569
Velocity Day -1 (cm/s)	6.0±0.21	6.2±0.21	6.1±0.21	5.4±0.20
Velocity Day 5(cm/s)	5.8±0.19	5.4±0.16	5.5±0.37	4.4±0.32

Supplemental Table 1. Open Field Data. Total distance moved and velocity was measured before surgery (Day -1) and 5 days after sham or CA/CPR (Day 5). Statistical analysis using One-Way ANOVA revealed no significant differences. Data are presented as mean±SEM

	Sham	CA/CPR 15min	CA/CPR 3hr	CA/CPR 24hr	CA/CPR+1-EBIO
Membrane Potential (mV)	-62.6±0.8	-65.3±1.9	-65.5±2.3	-59.7±1.6	-70.4±1.2 [#]
Input Resistance (MΩ)	165.8±12.6	181.6±23.9	187.9±57.1	155.7±27.6	226.1±42.3
Access Resistance (MΩ)	16.0±0.9	18.3±0.8	14.7±1.8	21.1±1.1 [*]	15.2±1.2

Supplemental Table 2. Biophysical properties of CA1 neurons. * indicates P < 0.05 compared to Sham. # indicates P < 0.05 compared to Sham, not significantly different from CA/CPR alone at same timepoint (3 hr). Data are presented as mean±SEM