**Supplementary Material for the paper:**

**"The accumulation of extracellular $K^+$ as *in vivo* model of epilepsy in CA1 pyramidal neurons" by V. Carpentieri, C. Bernard & M. Migliore**

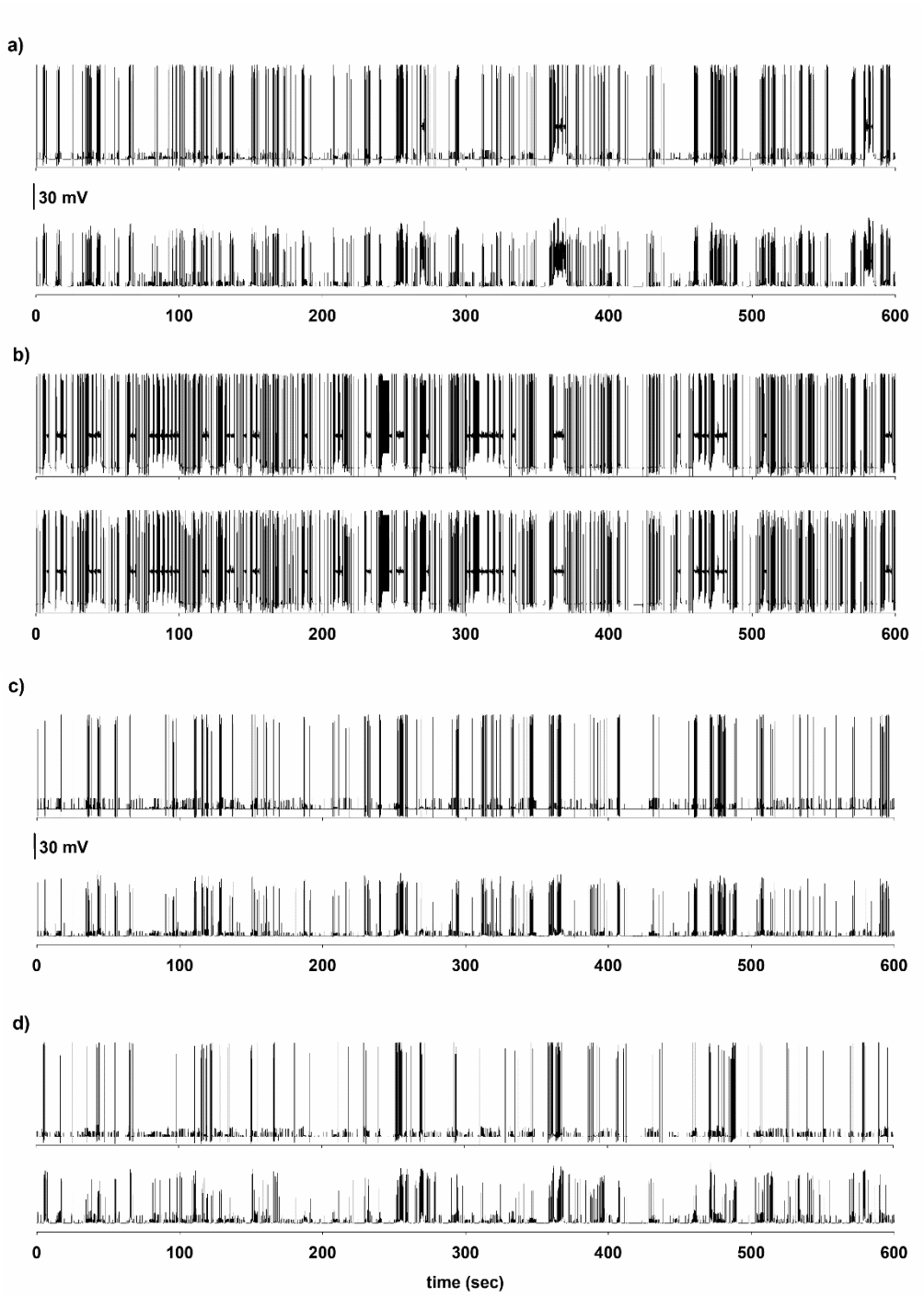


**Figure SF1: a)** Full 10 min traces of soma and apic 47 from the simulation in Fig. 4a **b)** Full 10 min traces of soma and basal 42 from the simulation in Fig. 4b. **c)** Full 10 min traces of soma and apic 47 from the simulation in Fig. 4c. **d)** Full 10 min traces of soma and apic 47 from the simulation in Fig. 4d.

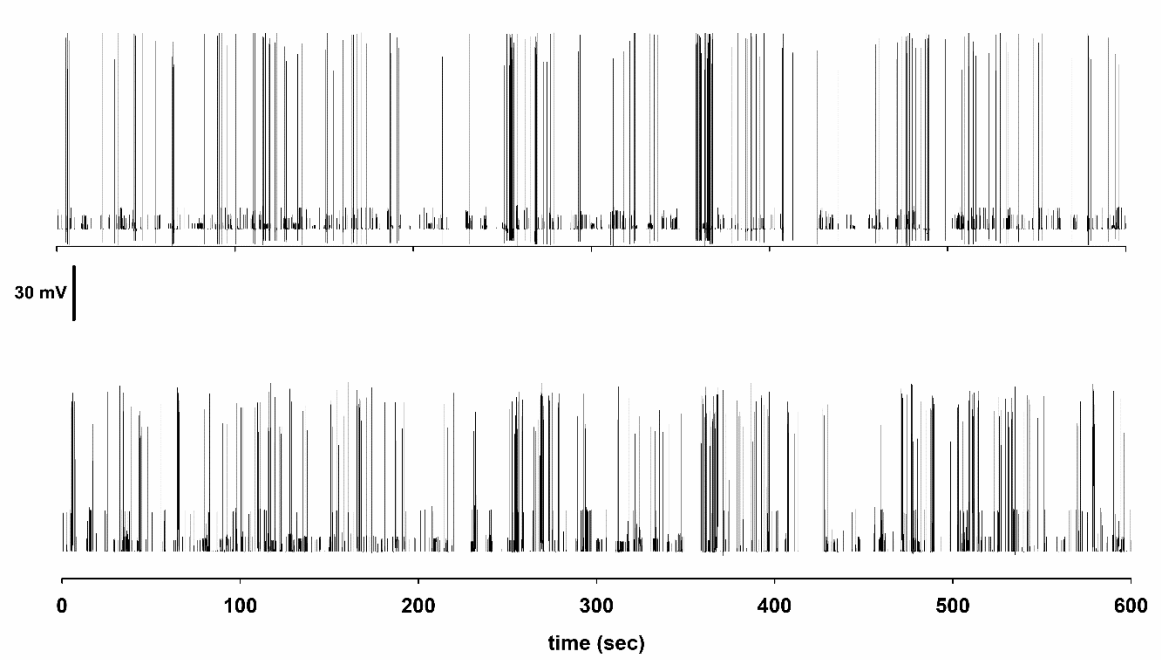


**Figure SF2:** Full 10 min traces of soma and apic 47 from a simulation under control conditions using synaptic weights of 60 nS.

**Supplementary Movie SM1**:
Movie illustrating $[K^+]_e$ over the entire neuron during the 10 min simulations of Fig.1c (left) and Fig. 1e (right); $[K^+]_e$ levels are color coded. Time (in min) is indicated in the lower right.

**Supplementary Movie SM2.**
Movie illustrating $[K^+]_e$ over the entire neuron during the 10 min simulation of Fig.2b. $[K^+]_e$ levels are color coded. Time (in min) is indicated in the lower right.