

5 Supplementary material

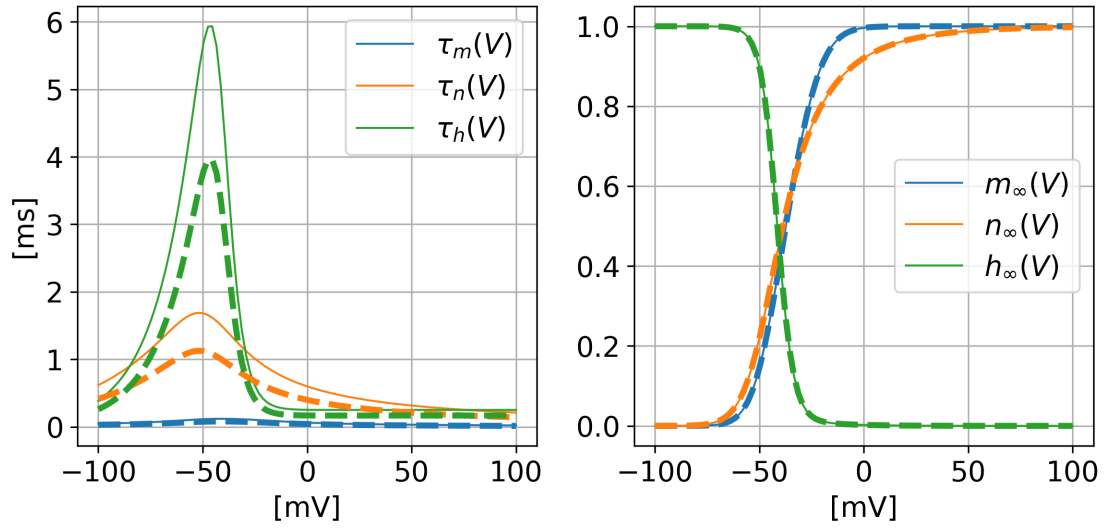


Figure S5: Effect of λ on the gating time constants (left) and steady-state levels (right) in the Hodgkin-Huxley model. Solid line: $\lambda = 1$. Dashed line: $\lambda = 1.5$.

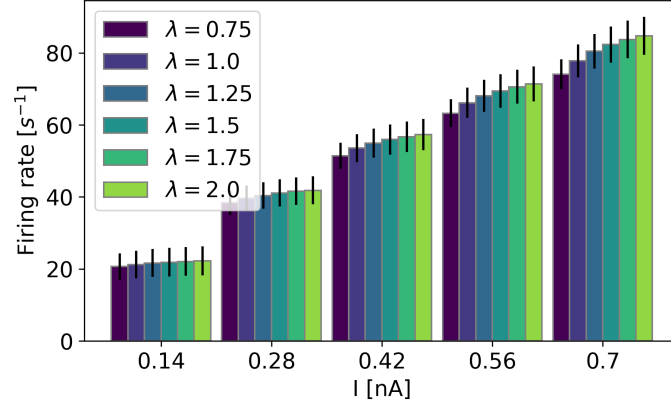


Figure S6: Robustness analysis: same results as in Fig. 1A, with results averaged over 100 independent repetitions. For each repetition, the value of each simulation parameter was randomly drawn from a uniform distribution with bounds $\pm 10\%$ of the nominal values listed in Table 1. Vertical bars: s.e.m.

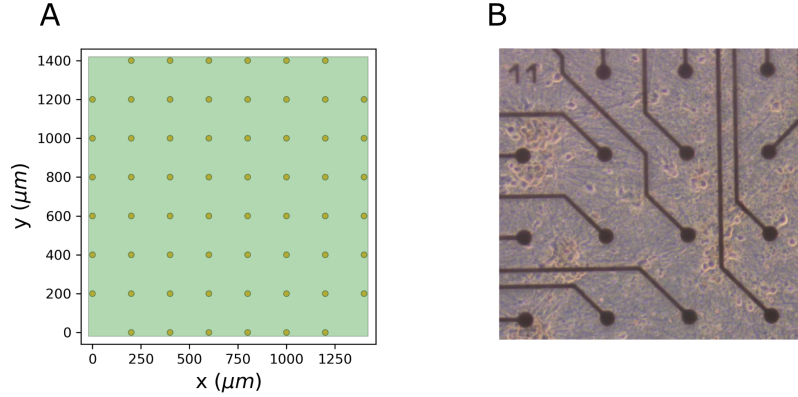


Figure S7: A: Layout of the recording electrodes. Population activity was recorded using Multi-Electrode Array (MEA) chips featuring 60 individual electrodes (60MEA200/30iR-ITO chips, MultiChannel Systems, Germany). The 60 electrodes have a diameter of $30\mu\text{m}$ and are separated by $200\mu\text{m}$. The extracellular voltage recorded by each electrode is sampled at 25 kHz. Each neuronal population was recorded using 2 sets of MEA chips simultaneously. B: Zoomed phase contrast microscopy image of an exemplary MEA chip showing different neurons. Reproduced from [21].