

Supplementary file

Phenomenological models of $\text{Na}_v1.5$.

A side by side, procedural, hands-on comparison between Hodgkin-Huxley and kinetic formalisms

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Figure S1

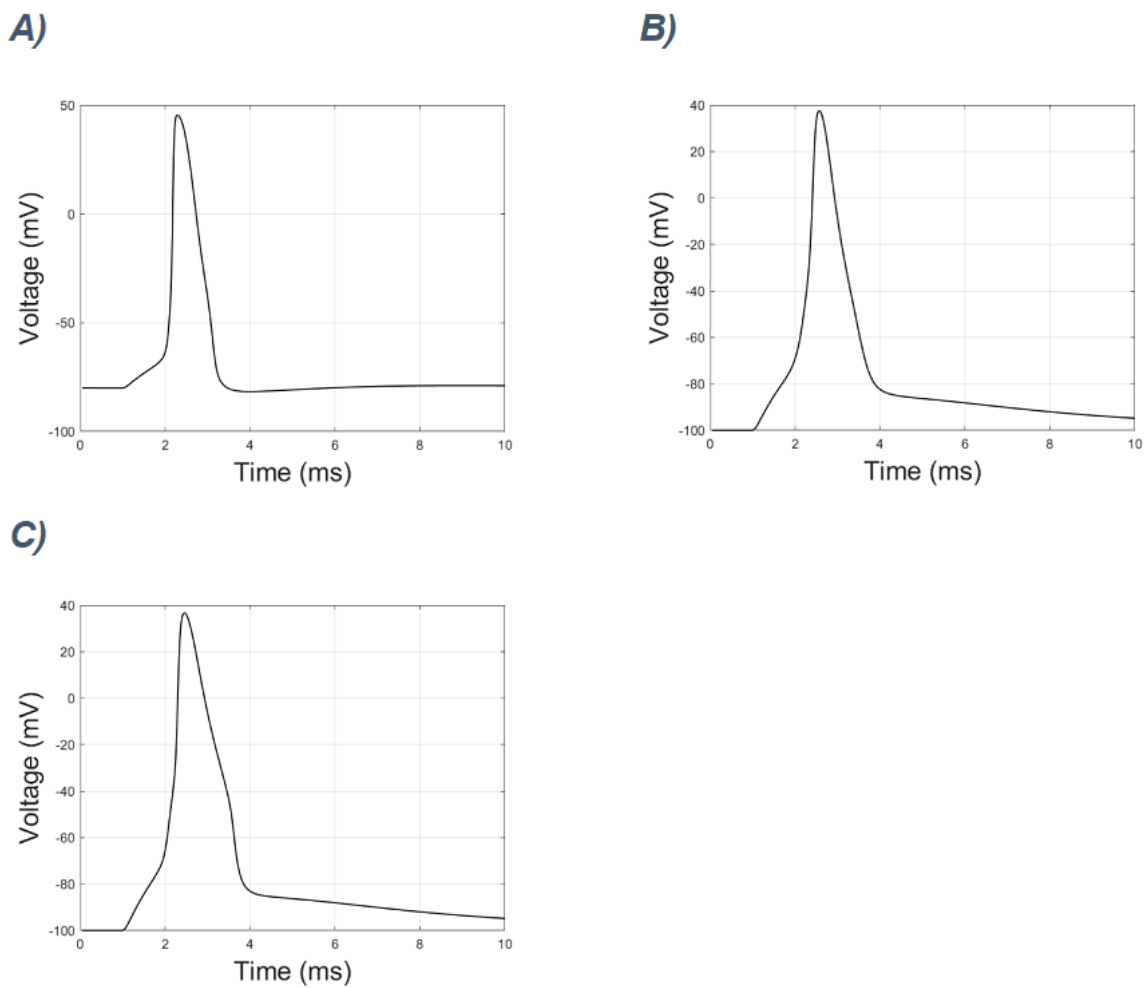


Figure S1. Action potential in a reduced spinal motoneuron³² following a depolarizing somatic stimulus. A) Voltage displacement at the soma of the original cell model. B) Voltage displacement at the same location after substituting the original model of sodium channel with the $\text{Na}_v1.5$ model built according to the HH formalism, or C) according to the $\text{Na}_v1.5$ Markov-type kinetic model.

Figure S2

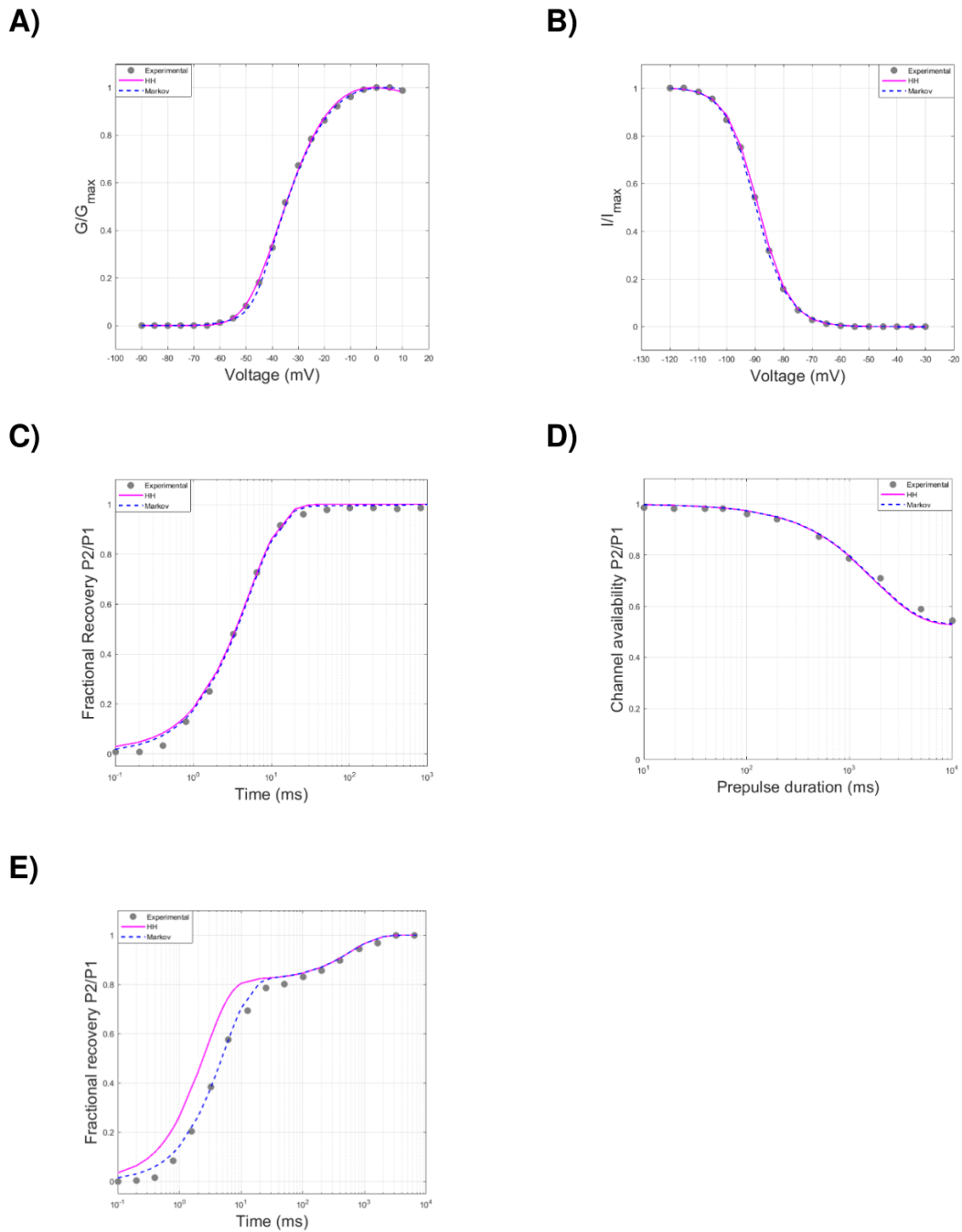


Figure S2

Overview of the experimental²² data (gray circle) comparison with the simulated data, modelled according to the HH formalism (pink solid line) or the Markov-type kinetic formalism (blue dashed line). A) activation protocol; B) steady-state availability protocol; C) recovery from fast inactivation protocol; D) development of slow inactivation protocol; E) recovery from slow inactivation protocol.