# Review of: "Depolarization block of interneurons"

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Title: Depolarization block of interneurons

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In this paper the authors study the behavior of the mathematical model of hippocampal interneurons. This model is the Hodgkin-Huxley model and is modified to reproduce the electrophysiology of these fast-spiking neurons. In this model, the synaptic input current is modeled in two ways, one is deterministic the other one is a stochastic process depending on random events. In the manuscript, the authors proved that, in presence of large depolarizing input currents, the system of inhibitory interneurons undergoes a depolarization block, a phenomenon that has been observed in other kind of neurons. The authors also showed that numerical simulations showed that an inhibitory synaptic current can reactivate neural activity when synaptic current and depolarizing current are in a given interval when numerical stimulations are given to interneurons. Using the mathematical model of hippocampal interneurons, authors show an important mechanism which stops sustained neural activity when a neuron receives a strong excitation.

This is a well-written paper containing interesting results which merit publication. A few minor revisions are listed below.

1. P4. Table 1

$E_{Na} = - 55$ mV ,

+55mV ?

2. P7, last sentence

In this figures, the number of action potentials ….

In these figures?