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慢变刺激下神经元的阵发放电

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通过对H-H方程Hopf分叉的数值计算以及神经元放电的仿真研究,从理论和仿真实验两方面都证明了慢变刺激可以引起神经元的阵发放电。结果提示,足够大的突触慢反应可以引起神经元的阵发放电和/或超常兴奋,这或许正是某些疾病(如癫痫)突发的原因。

BURSTING OF NEURONS UNDER SLOW WAVE STIMULATION

Hopf bifurcation of the H-H equations was computed by numerical methods and bursting of neurons were studied by simulation. It is shown that slow wave can induced bursting. The results prompt that bursting or ultraexciting of neurons can be induced by slow time-course EPSC/EPSP when it is big enough. And it is maybe just the seizure reason of some diseases (such as epilepsy).

关键词

H-H模型(H-H model); Hopf分叉(Hopf bifurcation); 神经元(Neuron); 阵发放电(Bursting); 慢变刺激(Slow wave stimulation)