

Abstract Submitted
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Bursting dynamics of in vitro neural networks and their stimulation driven learning. JOON HO CHOI, JUNE HOAN KIM, KYOUNG J. LEE — Recent studies have indicated that recurring neural “bursts” may play an essential role in neural information processing and memory. One key element of this hypothesis involves the translation of temporal patterns of stimuli into spatiotemporally distributed information. One ideal system to investigate this issue is cultured network of neurons grown on multi-electrode array (MEA). Based on such in vitro systems, we have investigated the changes incurred by extrinsic stimuli in the spontaneously recurring bursting activities. We have employed, in particular, two-channel paired, delayed, tetanic stimuli to evoke different patterns of bursting activities. Our preliminary data suggests that the neural network can exhibit some learning behavior.

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