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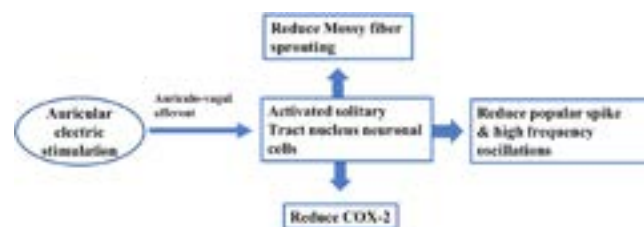
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Anticonvulsive mechanisms of long-term auricular electric stimulation in kainic acid-induced epileptic seizure rats

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According to the traditional Chinese Medicine theory, three yang meridians of hand and foot distribute to ears, and cranial nerves including 5th, 7th, 9th and 10th also distribute to ears, while 7th, 9th and 10th cranial nerves have parasympathic components. The vagal nerve stimulation had been used to treat intractable epilepsy. Therefore, the purpose of the present study is to investigate the anticonvulsive mechanisms of electric stimulation (ES) at ears. The ES was applied to ears 20 mins (each ear 10 mins alternately), three times/week for 6 weeks in kainic acid-induced epileptic seizure rats. The results were found that 2 Hz auricular ES for 6 weeks could ameliorate mossy fiber sprouting in the hippocampus region, and also could reduce popular spike and high frequency oscillations of hippocampal CA1 region. In addition, 2 Hz auricular ES also could reduce the COX-2 levels in the hippocampus and the

number of COX-2 immunoreactive cells in the hippocampal CA1 region in kainic acid-induced epileptic seizure rats. Based on the results mentioned above, we suggest the anticonvulsive effects of 2 Hz auricular ES for 6 weeks are involved in the inhibition of mossy fiber sprouting formation, the reduction of epileptic discharge, and anti-inflammation.



Biography

Ching-Liang Hsieh is a doctor majored in both Western medicine and Chinese medicine. He is the director of Research Center for Chinese Medicine and Acupuncture, and the Graduate Institute of Integrated Medicine, and Graduate Institute of Acupuncture Science at China Medical University (CMU). He is also one of the editorial board of Evidence-Based Complementary and Alternative Medicine. Professor Hsieh has two PhD degrees: one from Kyushu University, Japan (1995), and one from Guangzhou Chinese Medicine University, China (2004). He was previously the director of the School of Chinese Medicine, Graduate Institute of Chinese Medical Science, and Acupuncture Research Center at CMU; deputy superintendent at CMU Hospital. He has published more than 200 papers.

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