

# The 2<sup>nd</sup> International Neuroinflammation Congress and 2<sup>nd</sup> Student Festival of Neurosience

Shefa Neuroscience Research Center, Tehran, Iran, 17-19 April, 2018

### The Neuroscience Journal of Shefaye Khatam

Volume 6, No. 2, Suppl 1

### **Poster Presentation**

# The Role of Neuronal Nitric Oxide Synthase on the Anti-Seizure Effects of 5-HT1A Receptors in Perforant Pathway Kindling Model in Rat

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Published: 17 April, 2018

#### **Abstract**

Neuronal nitric oxide synthase (nNOS) plays a role in synaptic potentiation and kindling process. The relationship between nNOS and 5-HT1A receptors also nearly has been specified. In this research, we investigate the role of nNOS on the anticonvulsant effect of 5-HT1A receptors. 24 male  $(280 \pm 30 \text{ g})$  were randomly assigned to four groups (vehicle,NI,Way 100635 and NI + Way100635) (n = 6). Animals received one of the above compounds 30 min before application of the kindling stimulus. In the NI + Way100635 group, 10 min later Intra ventricle injection Way100635, intraperitoneal nitroindazole (NI) was injected. After application daily stimulation (12 times a day, with a 5 minute interval), up to five days, the seizure and electrophysiological quantities (after discharge duration and local field potentials) were recorded and measured. Data analysis showed that the Way100635 and NI+Way groups were kindled significantly faster than the vehicle group (P <0.001). The changes in afterdischarge duration increased in the NI + Way group over the five days when compared to the control group, but was not significant (P> 0.05). Also, the slope of field potentials in the NI + Way group was significantly higher than that of the vehicle group (P <0.05). Likely, nNOS is one of the mediators of the inhibitory effect of serotonin 5-HT1A receptors, and activating this pathway augments the anticonvulsant effects of serotonin.

**Keywords:** Serotonin, Kindling, Nitric Oxide Synthase, Seizure

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