1. **No.**

   FP01912143

2. **Title**

   The Neural Circuit Change Related to the Treatment and Therapeutic Possibilities Verification of Noninvasive Brain Stimulation for the Nicotine Addiction

3. **Period**

   2018-2020

4. **Summary**

   The purpose of this study was to clarify abnormalities in the network between brain regions associated with nicotine dependence caused by smoking by analyzing EEG under various conditions, and to provide a foothold for the treatment of non-invasive brain stimulation methods. The results showed that the effects of nicotine on the neural circuits related to dependence and an increase in current source density in the amygdala and ventral medial prefrontal cortex (vmPFC), which are sites of the reward and affective neural circuits related to dependence. Many studies have reported that the medial prefrontal cortex is related to the desire to smoke, and it is possible that the pharmacological effects of nicotine-containing smoking on the frontal lobe could be captured by EEG analysis. In this study, it was suggested that stimulation of the medial prefrontal cortex may be effective as a therapeutic site for noninvasive brain stimulation.