1. **No.**

   FP01907129

2. **Title**

   In vivo Depiction of Brain α7 Nicotinic Receptor and neuroinflammation in Psychiatric Disorders with or without Smoking Dependence

3. **Period**

   2016-2020

4. **Summary**

   We evaluated the α7 nicotinic receptor and neuroinflammation in the living brain of patients with schizophrenia using double PET tracers [11C]MeQAA and [11C]DPA713, and tried to explore changes in those PET parameters between patients with and without smoking. Global reduction in the α7 nicotinic receptor and increase in neuroinflammation were found in schizophrenian patients, in which the α7 nicotinic receptor reduction was dominant in the middle prefrontal cortex and α7 nicotinic receptor in the middle parietal cortex was associated with scores of negative symptoms. Neuroinflammation was remarkable in the temporal cortex and thalamus in the patients. Although the sample size was small, a smaller reduction in α7 nicotinic receptor in the smoking patients than nonsmoking patients along with increased neuroinflammation provided an idea that smoking would increase the α7 nicotinic receptor to compensate for reduction in nicotine-dopamine relay as neuroinflammation worsens in schizophrenia under smoking. Further examination with the ample sample size is needed to confirm this in future.