1. No.
   2021Y014

2. Title
   Investigation of therapeutic effects of immunomodulation via nicotinic receptors by brain ischemic mice model

3. Period
   2021-2023

4. Summary
   Malignant functions of lymphocytes entered from peripheral circulation into the brain are suggested to be involved in the pathology of cerebral ischemic stroke. Nicotinic receptors are expressing on the peripheral lymphocytes to regulate their immunological functions. Here, we evaluate the therapeutic strategy of immunomodulation for post-stroke pathology. Cerebroventricular injection of 5% Evans blue stained the CLNs, confirming the direct connection between the CLNs and the brains. In the stroke model mice induced by transient middle cerebral artery occlusion (tMCAO), infarct volume was not altered by CLNE 1 or 3 days after reperfusion. Impaired motor coordination was suppressed with drastic reduction of increased number of lymphocytes infiltrating from peripheral to the brain three days after tMCAO. CLNE is suggested to ameliorate neurological function after ischemic stroke by suppression of brain infiltration of peripheral lymphocytes. Modulation to infiltration of peripheral lymphocytes into the brain could be a beneficial strategy for stroke pathology. Pharmacological effects of nicotinic modulator on stroke pathology will be evaluated.