1. No.
   2023G024

2. Title
   Effect of Nicotine on Auditory Selective Attention

3. Period
   2023-2025

4. Summary
   In this research project, we demonstrated that a stand-alone training system (Fed3) can be applied to auditory training to facilitate operant conditioning. We established a behavioral paradigm to detect two types of auditory attention, in which a single target tone was embedded within a sequence of sounds and animals received a reward by reporting the target tone. We showed that selective attention could be detected by manipulating the level of background noise, while sustained attention could be assessed based on the relationship between the position of the target tone within the sequence and the correct response rate. Furthermore, nicotine administration was found to affect selective attention.

   In future studies, we aim to perform electrophysiological recordings in behaving animals to elucidate the neural representations underlying attention and cognition. We have also established an experimental system to visualize neural pathways related to attention, and we plan to investigate how selective manipulation of specific neural circuits alters attentional processes.