1. No.
   2019Y011

2. Title
   The impacts of cigarette smoke on skeletal muscle in sarcopenia

3. Period
   2019-2021

4. Summary
   To elucidate the effects of smoking and smoking cessation on sarcopenia pathology, 16-week-old SAMP1 mice were intraperitoneally treated with nicotine tartrate dihydrate or Vehicle (PBS) in the following three groups. 1) V-V group: 4 weeks in Vehicle, 2) N-N group: 4 weeks in Nicotine, (3) N-V group: 2 weeks of Nicotine administration followed by 2 weeks of Vehicle administration.

   The results showed that nicotine suppressed body weight gain partly by reducing food intake, and this trend disappeared after administration was discontinued. In addition, soleus muscle weight and exercise tolerance assessed by treadmill test were significantly lower in both the N-N and N-V groups than in the V-V group, but there was no difference between the N-N and N-V groups. In this study, Nicotine decreased muscle mass and exercise tolerance, but there was no recovery after discontinuation of treatment. In the future, it is necessary to investigate the molecular mechanism by which sarcopenia progresses with Nicotine, and to examine the conditions under which muscle mass and exercise tolerance are restored after Nicotine discontinuation.