1. No.
   2019Y009

2. Title
   Effect of cigarette components on liver steatosis and virus infection

3. Period
   2019-2021

4. Summary
   In this study, we examined the effect of tobacco components on the hepatitis C virus (HCV) propagation and hepatic lipid accumulation in cell culture system. In this study, we found 2-amino-9H-pyrido[2,3-b]indole (AaC) suppressed HCV production and 2-amino-3-methylimidazo(4,5-f)quinoline (IQ) promoted lipid droplet accumulation. By focusing on the structure of these compounds, we searched for compound having higher activities and identified that NeoB reduced both the HCV production and lipid droplet accumulation in hepatocytes. We then established a total synthesis of NeoB and synthesized 16 derivatives using this total synthetic pathway. We identified NeoB derivatives showing stronger activities to reduce the HCV production and lipid droplet accumulation. The above data provide the basic evidence suggesting the impact of smoking on HCV propagation and liver steatosis, and new lead compounds useful for controlling the virus infection and liver steatosis.