1. No.
   2019G024

2. Title
   Potential protective actions of CRF2 receptor agonists against nicotine-induced cellular stress on pancreatic β-cells

3. Period
   2019-2021

4. Summary
   It is reported that nicotine may exert adverse actions on glucose metabolism. Recently, urocortin (Ucn) family peptides, which is also belonging to corticotropin-releasing factor related peptides, are reported to be expressed in pancreatic β cells. Therefore, we hypothesized that Ucns (including endogenous Ucns) may exert some beneficial effects on pancreatic β cells against nicotine-induced adverse actions and examined by the effects on insulin release, anti-oxidative actions, and cell-proliferative actions. Nicotine suppressed insulin release from pancreatic β cells and cell proliferation of pancreatic β cells and increased oxidative stress. Ucns improved the cell status on all these nicotine-induced adverse actions, i.e., Ucns increased nicotine-suppressed insulin release from pancreatic β cells, recovers nicotine-suppressed cell proliferation, and nicotine-induced oxidative stress. But scavenging nicotine-induced oxidative stress by tempol resulted in small recovery on insulin release from pancreatic β cells, indicating that beneficial actions of Ucns may be consisted of not only anti-oxidative actions but also some other actions.