1. **No.**

   FP01812175

2. **Title**

   Identification and analysis of the chemicals associated with the chromosomal instability in the tobacco smoke using human artificial chromosome

3. **Period**

   2017-2019

4. **Summary**

   Recently, it was known that smoking was deeply involved in the development of chromosomal instability. In this study we searched for substances that are directly involved in the development of chromosomal instability from substances in the tobacco smoke and found that butyraldehyde was the causative substance. In addition, the frequency of chromosomal instability tends to increase depending on the concentration of butyraldehyde, suggesting that it may be via aldehyde metabolism or calcium signaling pathway. These findings may be useful for study future treatments or prevention for smoking-related cancers.