1. No.
   2021Y006

2. Title
   Analysis of the effect of smoking on pathophysiology of cerebral infarction by zebrafish live imaging.

3. Period
   2021-2023

4. Summary
   RNA-seq analysis has indicated that the process of protein translation and elongation plays a crucial role in the recovery from cerebral infarction in zebrafish. However, in the zebrafish smoking model, we observed a more extensive cessation of blood flow to the site of thrombus induction and significant hemorrhage. Furthermore, the smoking model exhibited delayed reconstruction of the vascular network and a postponed resumption of blood flow. This implies that the recovery of brain function is also delayed in the smoking model. The mortality rate was higher than initially anticipated, making it challenging to evaluate brain function using electric shocks. As a result, we established a new method for analyzing brain function using the FMP Y-maze. We are also in the process of developing a method to induce thrombi in a site-specific manner and to analyze the pathology of cerebral infarction in a smoking model without causing death. In conjunction with the minimally invasive analysis system established in this study, we plan to conduct molecular analyses such as RNA-seq to elucidate the effects of smoking on the pathology of cerebral infarction over time.