1. No.
   2022G018

2. Title
   Elucidation of the Molecular Mechanism between the Exacerbation of Bronchial Asthma and Cigarette Smoking

3. Period
   2022-2024

4. Summary
   Various factors contribute to the exacerbation of bronchial asthma, including the activation of dendritic cells (DCs), which is considered one of the causes of asthma worsening. Additionally, smoking has been identified as a contributing factor to exacerbation. This study aims to elucidate the molecular mechanisms underlying bronchial asthma and clarify their relationship with smoking.

   We established hTFAM-overexpressing mice with impaired mitochondrial function. We found that the activation of dendritic cell harvested from the bone marrow of these mice is closely linked to mitochondrial function. hTFAM-overexpression mice exhibited reduced antibody production capacity *in vivo*. This molecular mechanism is likely dependent on the urea cycle. Furthermore, we aim to clarify the relationship between DC activation and bronchial asthma, and to explore the development of new therapeutic drugs for bronchial asthma.