1. No.
   2021G027

2. Title
   Effects of Smoking on the Human Ovarian Function toward Pregnancy

3. Period
   2021-2023

4. Summary
   The purpose of this study was to examine how smoking affects the regulatory mechanism of human ovarian function. We conducted an investigation by adding cigarette smoke extract (CSE) to a human granulosa cell tumor cell line (KGN cells). CSE significantly inhibited the proliferation ability of granulosa cells. Furthermore, the expression of HIF-1α, VEGF, GLUT1, and NDRG1 was promoted even under normoxia. Since the expression of VEGF, GLUT1, and NDRG1 was suppressed by knockdown of HIF-1α, it was inferred that HIF-1α promotes the transcriptional activity of these genes.

   When examining the effect of CSE on hormone production, Progesterone and Estradiol were suppressed, and Testosterone increased. We investigated sex steroid hormone-related genes and found that Estradiol affects both the production pathway and metabolic pathway.