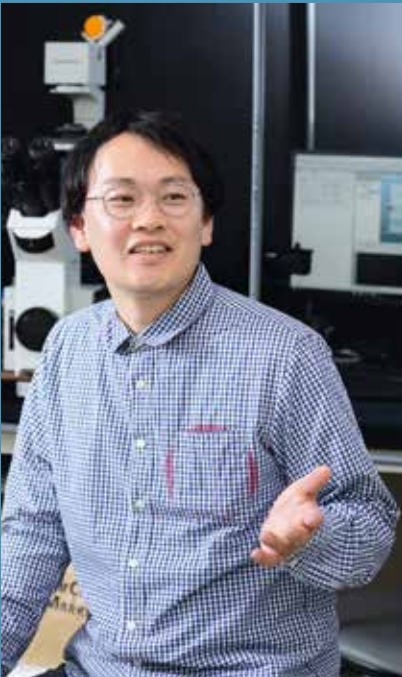


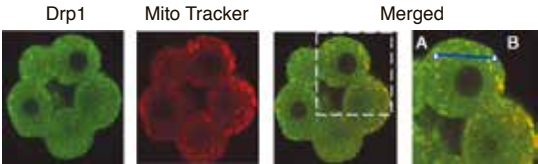


Assoc. Prof.
WAKAI Takuya

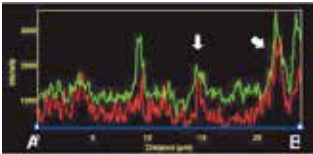


Basic and applied research on organelles in mammalian oocytes and embryos

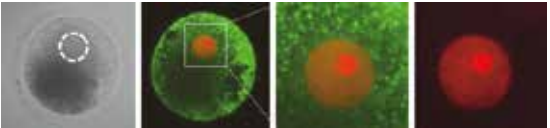
Gametes (oocytes and spermatozoa) are highly specialized cells for the transmission of genes to the progeny. Our laboratory is interested in understanding the mechanisms of oocyte development, maturation and fertilization in mammals. Problems in oocyte quality cause the infertility, and the development of organelles, such as mitochondria and endoplasmic reticulum, is a key determinant for the successful fertilization and subsequent embryonic development. We are using several techniques to address the roles of organelles in oocytes including in vitro maturation, fertilization, genetic manipulation and live cell imaging.



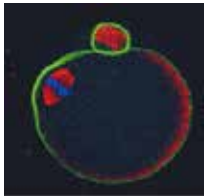
Expression of Drp1 protein, which is a critical factor associated with the division of mitochondria, in mouse embryos and the co-distribution with mitochondria



Expression of H2B-mCherry RNA injected into porcine immature oocyte



Normal (right) and sex-reversed mice (left) by genome editing of Sry. Both animals had morphologically normal uterus and ovaries.



Actin cap in mouse oocyte