Laboratory Animal Science
Laboratory Animal Resource Center

Principal Investigator　Fumihiro Sugiyama
E-mail.address　bunbun@md.tsukuba.ac.jp
URL　http://www.md.tsukuba.ac.jp/basic-med/lab-animal/

Other Faculty Members
Assistant Professor Seiya Mizuno: konezumi@md.tsukuba.ac.jp
Assistant Professor Kazuya Murata: kmutata@md.tsukuba.ac.jp

Major Scientific Interests of the Group

Comparative analyses of mouse and human genomes have strongly guided the importance of mutant mice for understanding the mechanism of human diseases. Our main task are the development and characterization of new gene-modified mouse (GMM) models for human diseases. Further, we investigate a new strategy for genome modification and create novel mouse resources for analyzing gene function in vivo. Moreover, we study spermatogenesis and oogenesis using GMMs.

Projects for Regular Students in Doctoral or Master's Programs

1）Development of a mouse model for human diseases
2）Creation of a new strategy for analyzing gene function in mice
3）Investigation of spermatogenesis and oogenesis in mice

Study Programs for Short Stay Students (one week – one trimester)

1）Manipulation of mouse embryos
2）Genome manipulation using the CRISPR/Cas9 system

Selected Publications

1) Hoshino Y, Mizuno S, Kato K, Mizuno-Iijima S, Tanimoto Y, Ishida M, Kajiwara N, Sakasai T, Miwa Y, Takahashi S, Yagami K, Sugiyama F. Simple generation of hairless mice for in vivo imaging. Exp Anim. 66(4):437-445, 2017.
2) Hasegawa Y, Hoshino Y, Abdelaziz E. Ibrahim, Kato K, Daitoku Y, Tanimoto Y, Ikeda Y, Oishi H, Takahashi S, Yoshiki A, Yagami K, Iseki H, Mizuno S, Sugiyama F. Generation of CRISPR/Cas9-mediated bicistronic knock-in Ins1-cre driver mice. Exp Anim. 65(3):319-327, 2016.
3) Al-Soudy AS, Nakanishi T, Mizuno S, Hasegawa Y, Shawki HH, Katoh MC, Basha WA, Ibrahim AE, El-Shemy HA, Iseki H, Yoshiki A, Hiromori Y, Nagase H, Takahashi S, Oishi H, Sugiyama F. Germline recombination in a novel Cre transgenic line, Prl3b1-cre mouse. Genesis. 54(7):389-397, 2016.
4) Mizuno S, Takami K, Daitoku Y, Tanimoto Y, Dinh TT, Mizuno-Iijima S, Hasegawa Y, Takahashi S, Sugiyama F (Corresponding author), Yagami K. Peri-implantation lethality in mice carrying megabase-scale deletion on 5qc3.3 is caused by Exoc1 null mutation. Sci Rep. 5:13632, 2015.
5) Mizuno S, Dinh TT, Kato K, Mizuno-Iijima S, Tanimoto Y, Daitoku Y, Hoshino Y, Ikawa M, Takahashi S, Sugiyama F (corresponding author), Yagami K., Simple generation of albino C57BL/6J mice with G291T mutation in the tyrosinase gene by the CRISPR/Cas9 system. Mamm Genome. 25:327-343, 2014.