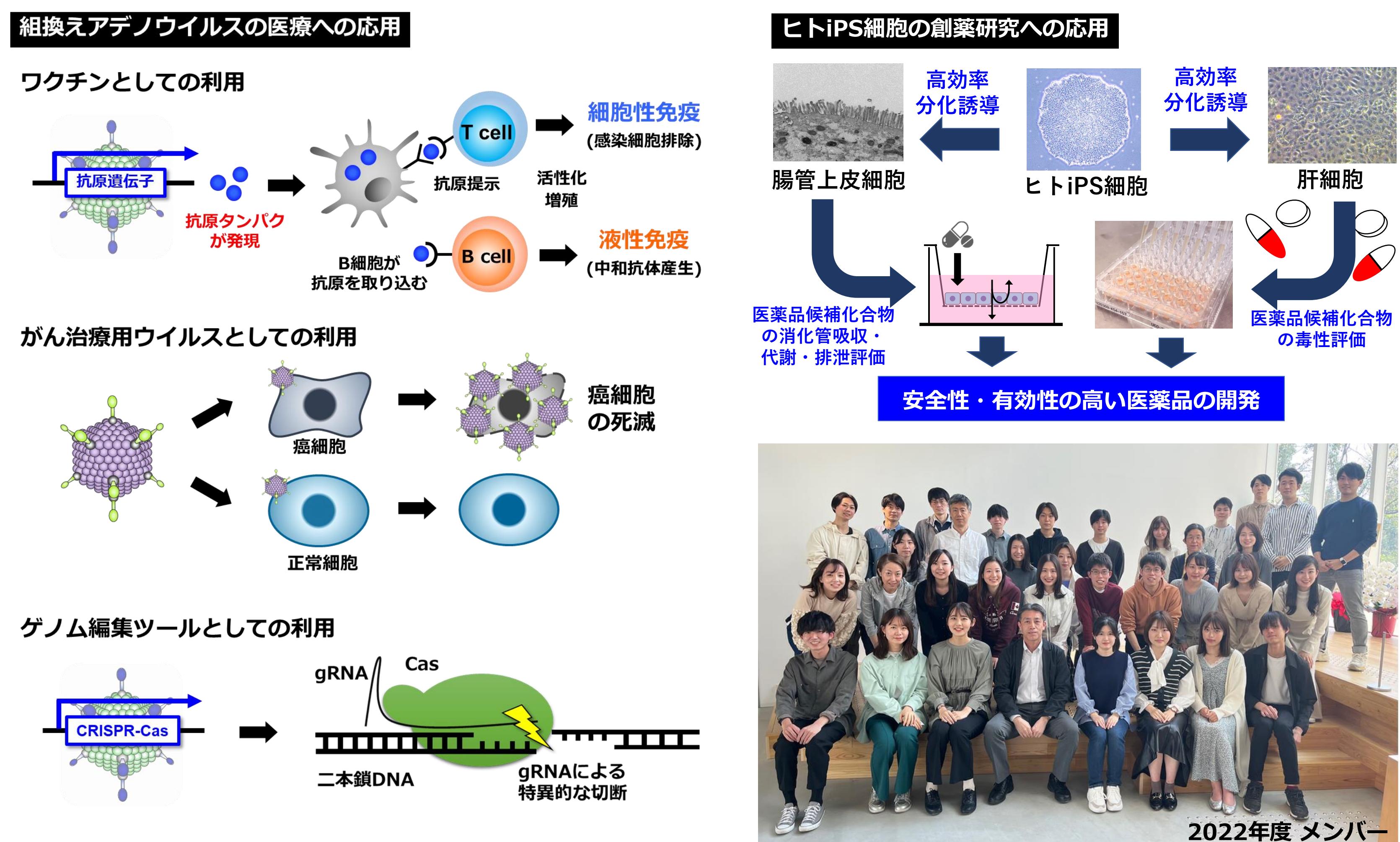


組換えアデノウイルスやiPS細胞、オルガノイド培養技術などの創薬基盤技術の開発を通して次世代医療に貢献する！

水口 裕之 教授 | 櫻井 文教 准教授 | 立花 雅史 特任准教授 | 植山(鳥羽) 由希子 助教

当研究室では、分子生物学をはじめとする最先端の生命科学研究を進める上で必須の基盤技術である遺伝子導入・発現制御技術の開発と次世代医療へ応用や、iPS細胞やオルガノイド培養技術を用いた幹細胞生物学の技術を活用した創薬研究への応用など、独自の観点からの分子細胞生物学研究を開拓しております。我々とともに生命科学を学び、楽しみ、当領域を将来先導する気概とやる気に満ちた学生の参画を大歓迎しております。



研究課題

- 新規遺伝子導入技術の開発と遺伝子治療、ワクチン、ウイルス療法、再生医療等への応用
- ヒトiPS細胞から肝臓細胞、小腸上皮細胞等への分化制御に関する分子生物学的解析やオルガノイド培養系を用いた創薬研究・再生医療研究への応用
- ゲノム編集技術の開発と遺伝子治療、幹細胞研究への応用

主要論文

- Yamashita T. et al., Monolayer platform using human biopsy-derived duodenal organoids for pharmaceutical research. *Mol. Ther. Methods. Clin. Dev.*, 22, 263-278 (2021)
- Deguchi S. et al., In vitro model for a drug assessment of cytochrome P450 family 3 subfamily A member 4 substrates using human induced pluripotent stem cells and genome editing technology. *Hepatol. Commun.*, 7, 3648-3657 (2021)
- Shimizu K. et al., Adenovirus vector-induced IL-6 promotes leaky adenoviral gene expression, leading to acute hepatotoxicity. *J. Immunol.*, 206, 410-421 (2021)
- Ichikawa M. et al., Vinblastine treatment enhances the intestinal functions and decreases the undifferentiated cell contamination of human iPS cell-derived intestinal epithelial-like cells. *Mol. Ther. Methods. Clin. Dev.*, 20, 463-472 (2021)
- Ono R. et al., Efficient antitumor effects of a novel oncolytic adenovirus fully composed of species B adenovirus serotype 35. *Mol. Ther. Oncolysis*, 20, 399-409 (2021)
- Kiso A. et al., TLL1 negatively regulates hepatic differentiation of human iPS cells through TGFβ signaling. *Hepatol. Commun.*, 4, 255-267 (2020)
- Takayama K. et al., Generation of human iPS cell-derived intestinal epithelial cell monolayers by CDX2 transduction. *Cell. Mol. Gastroenterol. Hepatol.*, 8, 513-526 (2019)
- Wakabayashi K. et al., A microRNA derived from adenovirus virus-associated RNAII promotes virus infection via post-transcriptional gene silencing. *J. Virol.*, 93, e01265-18 (2019)
- Negoro R. et al., Efficient generation of small intestinal epithelial-like cells from human iPS cells for drug absorption and metabolism studies. *Stem Cell Rep.*, 11, 1539-1550 (2018)
- Machitani M. et al., Type I interferons impede short-hairpin RNA-mediated RNA interference via inhibition of dicer-mediated processing to small interfering RNA. *Mol. Ther. Nucleic Acids*, 6, 173-182 (2017)
- Hemmi M. et al., Th17 Promotes Induction of antigen-specific gut-mucosal CTLs following adenovirus vector vaccination. *Front Immunol.*, 8, 1456 (2017)
- Takayama K. et al., Prediction of inter-individual differences in hepatic functions and drug sensitivity by using human iPS-derived hepatocytes. *Proc. Natl. Acad. Sci. USA*, 111, 16772-16777 (2014)
- Blumberg R. et al., Protective mucosal immunity mediated by epithelial CD1d and IL-10. *Nature*, 509, 497-502 (2014)