Docket #: S23-333

PR-Flpo knock-in mice - Jackson Labs 037008

PRFlpo CRISPR-derived knock-in mice are designed to have 2A-flpo sequence inserted into the 3' UTR of the progesterone receptor (Pgr) gene. The endogenous Pgr promoter/enhancer regions direct expression of optimized flpo recombinase to parts of the reproductive system such as uterus, ovary, oviduct, pituitary gland, and mammary gland, as well as smooth muscle without disrupting endogenous gene expression. PR, a nuclear hormone receptor, binds to steroid hormones in the cytoplasm, causing their translocation into the nucleus and leading to increased transcription of target genes. The presence of 2A-flpo cassette in the 3' UTR allows for expression of PR and flpo. Homozygous mice are viable and fertile. When these mice are bred with mice containing FRT-flanked sequence, flpo-mediated recombination will result in deletion of the FRT-flanked sequences in flpo-expressing cells. PR has been implicated in breast, uterine, and ovarian cancers, as well as smooth muscle tumors.

Applications

- These mice can be used for developing or testing modulators of circuits or cells in health or disease for peripheral reproductive tissues (uterus, ovary, breast, vagina such as uterine cancer, ovarian cancer, breast cancer, endometriosis, pregnancy, preeclampsia, menopausal atrophy), sexual behavior and libido (hyposexual desire disorder, menopause, other causes of abnormal libido), cardiovascular system (such as blood vessel vasodilation), hot flashes and sweats in menopause, and cognitive symptoms in various conditions (such as migraine, seizures, mood, appetite, emotional changes in menopause or across the menstrual cycle).

Innovators

- Taehong Yang
- Nirao Shah

Licensing Contact

Michael Bellas

Licensing Associate

Email