

Pgrmc1 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Pgrmc1

Project type

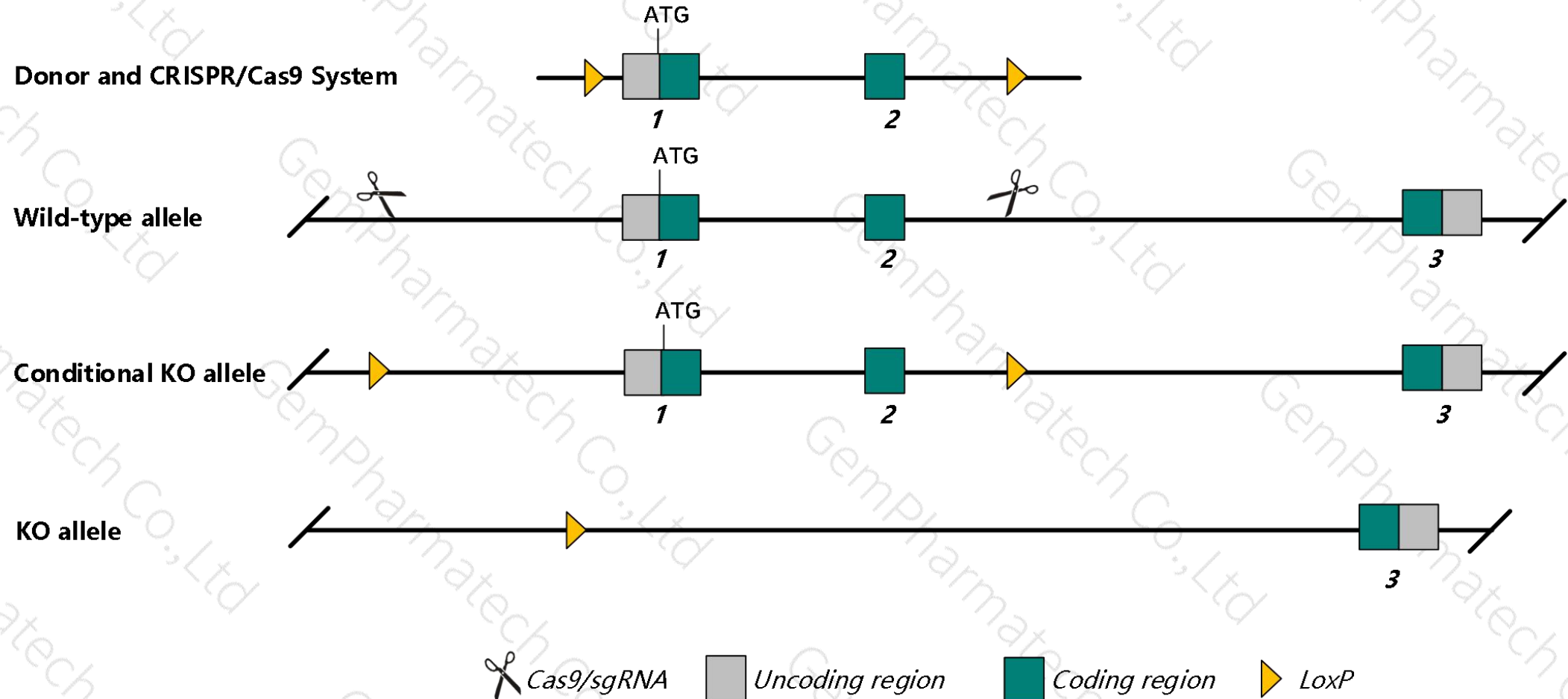
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pgrmc1* gene. The schematic diagram is as follows:



- The *Pgrmc1* gene has 1 transcript. According to the structure of *Pgrmc1* gene, exon1-exon2 of *Pgrmc1-201* (ENSMUST00000073339.6) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pgrmc1* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- According to the existing MGI data, Mice homozygous for a conditional allele activated in vomeronasal sensory neurons exhibit constant attraction behavior to recombinant major urinary proteins (rMUPs). in both estrus and diestrus females.
- The *Pgrmc1* gene is located on the ChrX. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Pgrmc1 progesterone receptor membrane component 1 [Mus musculus (house mouse)]

Gene ID: 53328, updated on 7-Apr-2019

Summary



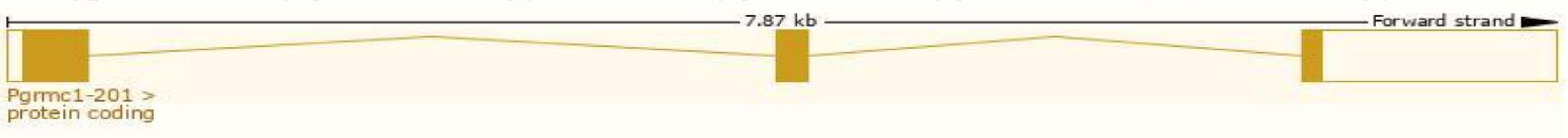
Official Symbol	Pgrmc1 provided by MGI
Official Full Name	progesterone receptor membrane component 1 provided by MGI
Primary source	MGI:MGI:1858305
See related	Ensembl:ENSMUSG00000006373
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AA415812, HPR6.6, PPMR, Vema, mPR
Expression	Ubiquitous expression in liver adult (RPKM 269.7), adrenal adult (RPKM 243.6) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

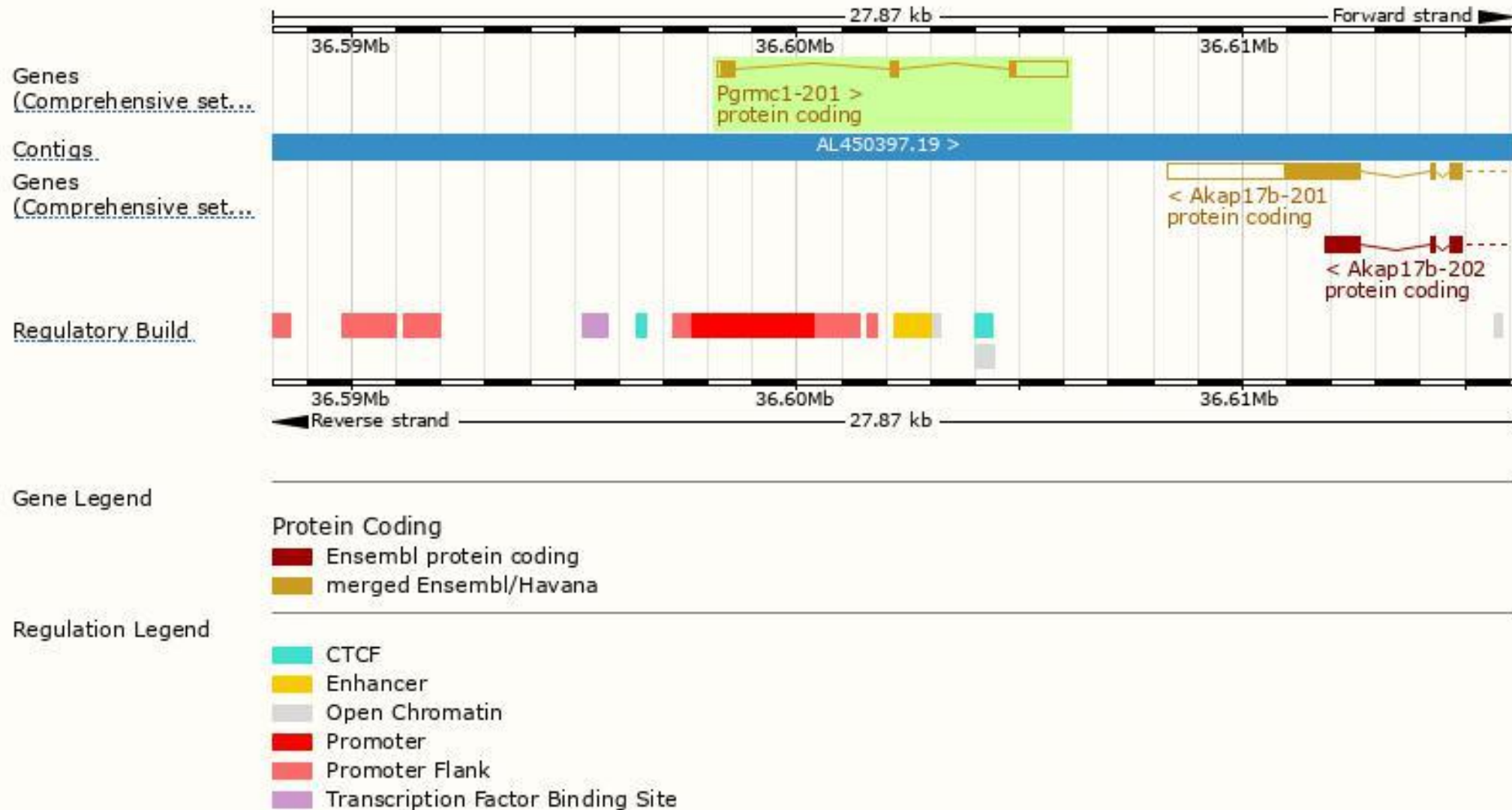
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pgrmc1-201	ENSMUST00000073339.6	1857	195aa	Protein coding	CCDS30060	Q55022 Q3TXU8	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *Pgrmc1-201* transcript, The transcription is shown below



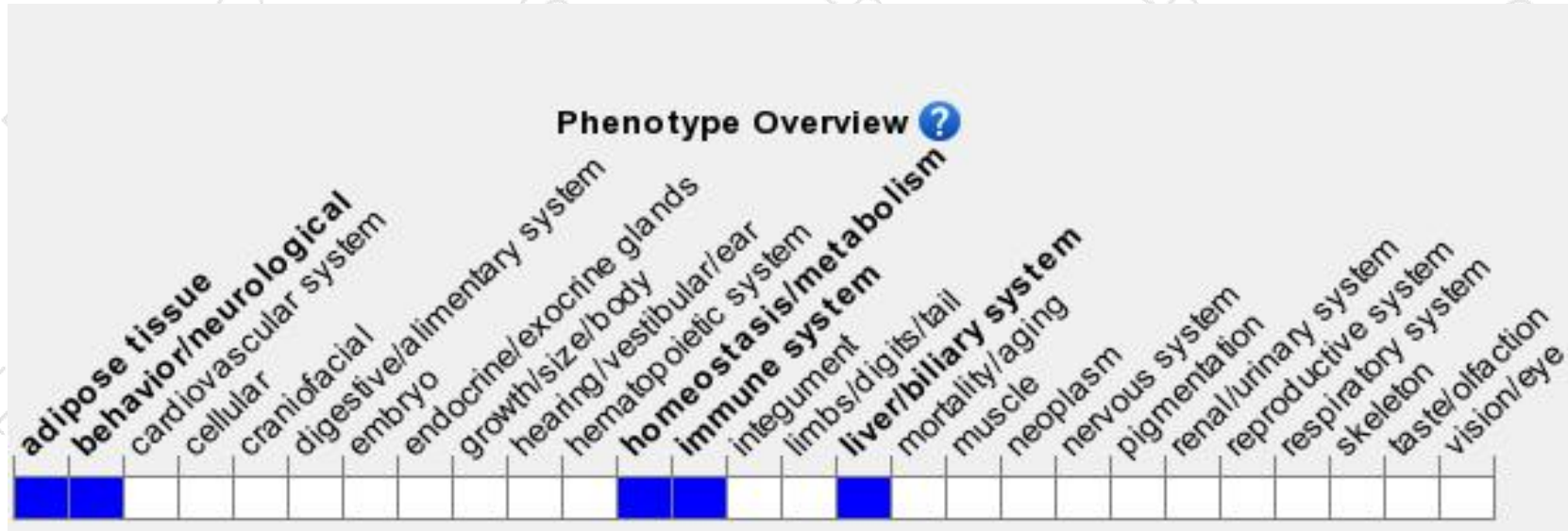
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Mice homozygous for a conditional allele activated in vomeronasal sensory neurons exhibit constant attraction behavior to recombinant major urinary proteins (rMUPs). in both estrus and diestrus females.

If you have any questions, you are welcome to inquire.

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