

P2ry10 Cas9-CKO Strategy

Designer:

Huan Wang

Design Date:

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Project Overview

Project Name

P2ry10

Project type

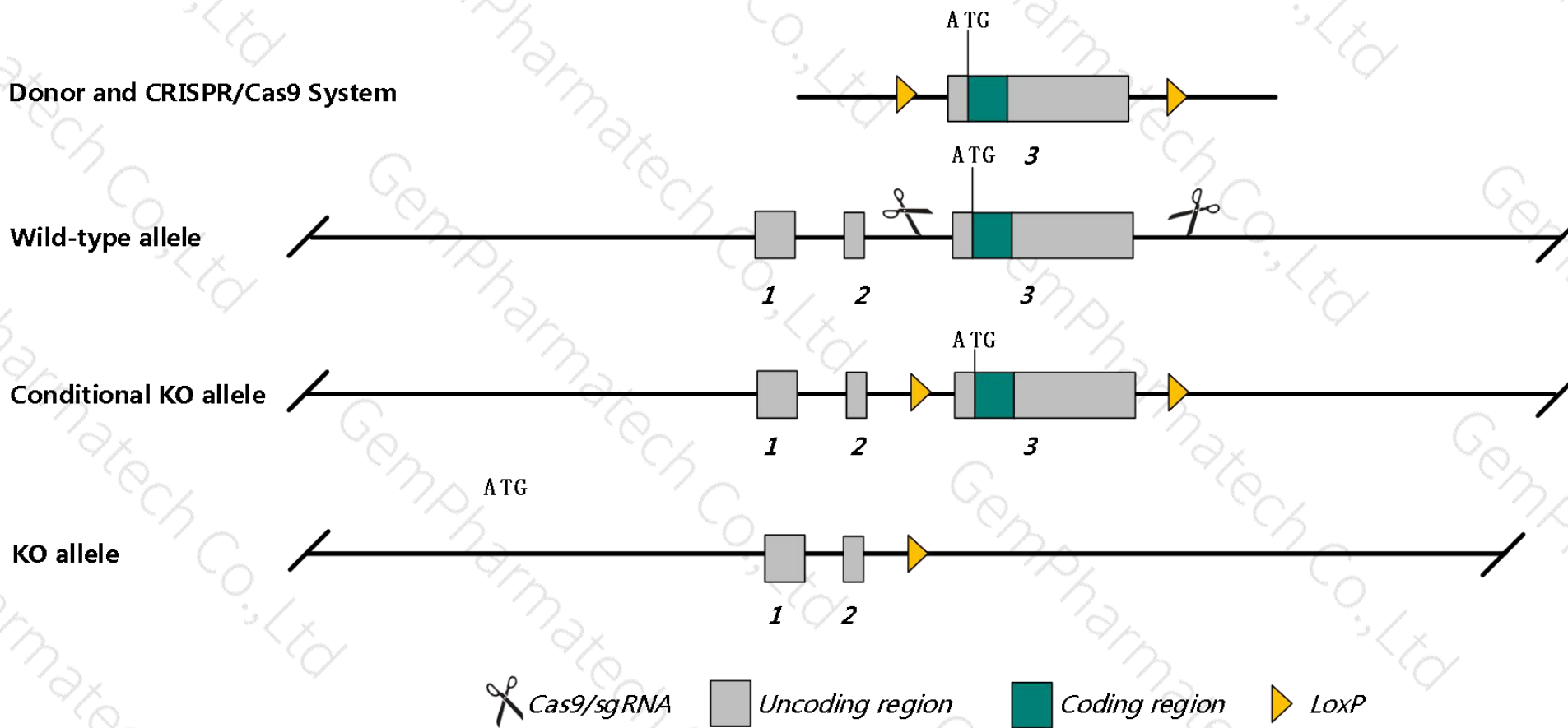
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *P2ry10* gene. The schematic diagram is as follows:



- The *P2ry10* gene has 3 transcript. According to the structure of *P2ry10* gene, exon3 of *P2ry10*-201 ([ENSMUST00000053375.3](#)) transcript is recommended as the knockout region. The region contains most of coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *P2ry10* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA 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 or cell types.

- The *P2ry10* 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 the loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

P2ry10 purinergic receptor P2Y, G-protein coupled 10 [*Mus musculus* (house mouse)]

Gene ID: 78826, updated on 31-Jan-2019

Summary



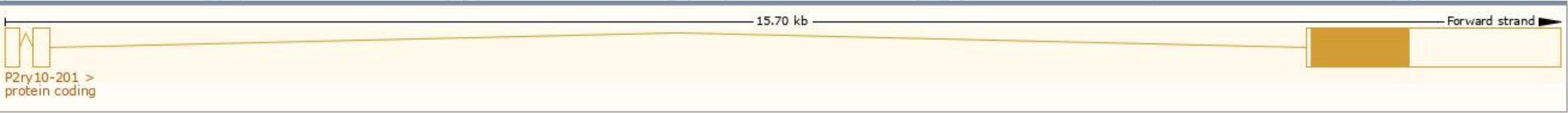
Official Symbol	P2ry10 provided by MGI
Official Full Name	purinergic receptor P2Y, G-protein coupled 10 provided by MGI
Primary source	MGI:MGI:1926076
See related	Ensembl:ENSMUSG00000050921
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	P2Y10; Lypsr2; 5830408N17Rik
Expression	Biased expression in thymus adult (RPKM 15.8), spleen adult (RPKM 5.6) and 1 other tissue See more
Orthologs	human all

Transcript information (Ensembl)

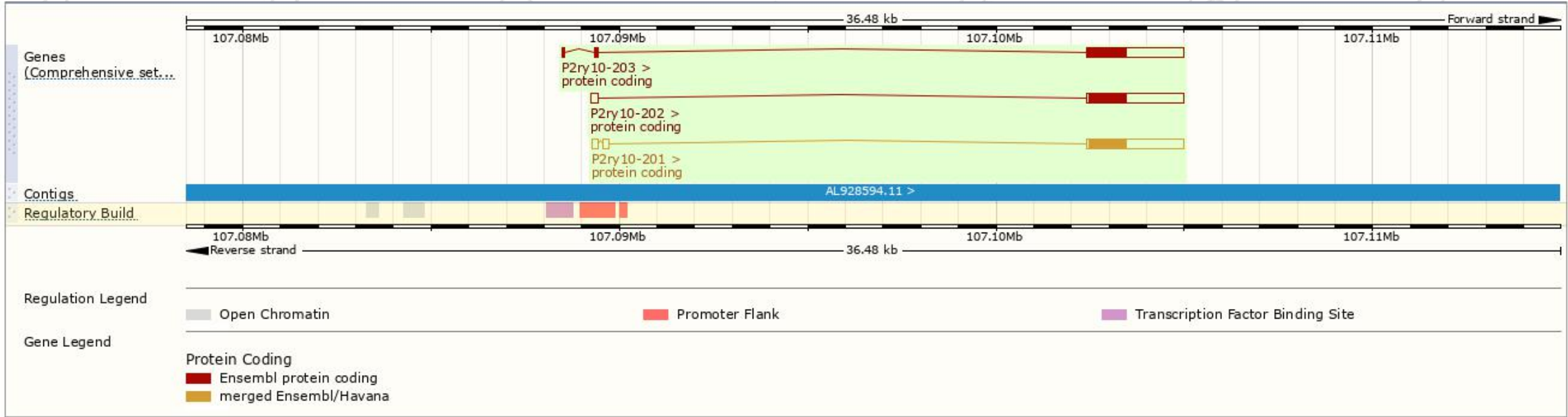
The gene has 3 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
P2ry10-203	ENSMUST00000150494.1	2704	393aa	Protein coding	-	F6SDQ0	CDS 5' incomplete TSL:1
P2ry10-202	ENSMUST00000118666.7	2757	328aa	Protein coding	CCDS30346	Q8BFU7	TSL:1 GENCODE basic APPRIS P1
P2ry10-201	ENSMUST00000053375.3	2888	328aa	Protein coding	CCDS30346	Q8BFU7	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *P2ry10*-201 transcript, The transcription is shown below



Genomic location distribution



If you have any questions, you are welcome to inquire.
Tel: 400-9660890

