

Pkd2l1 Cas9-KO Strategy

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Project Overview

Project Name

Pkd2l1

Project type

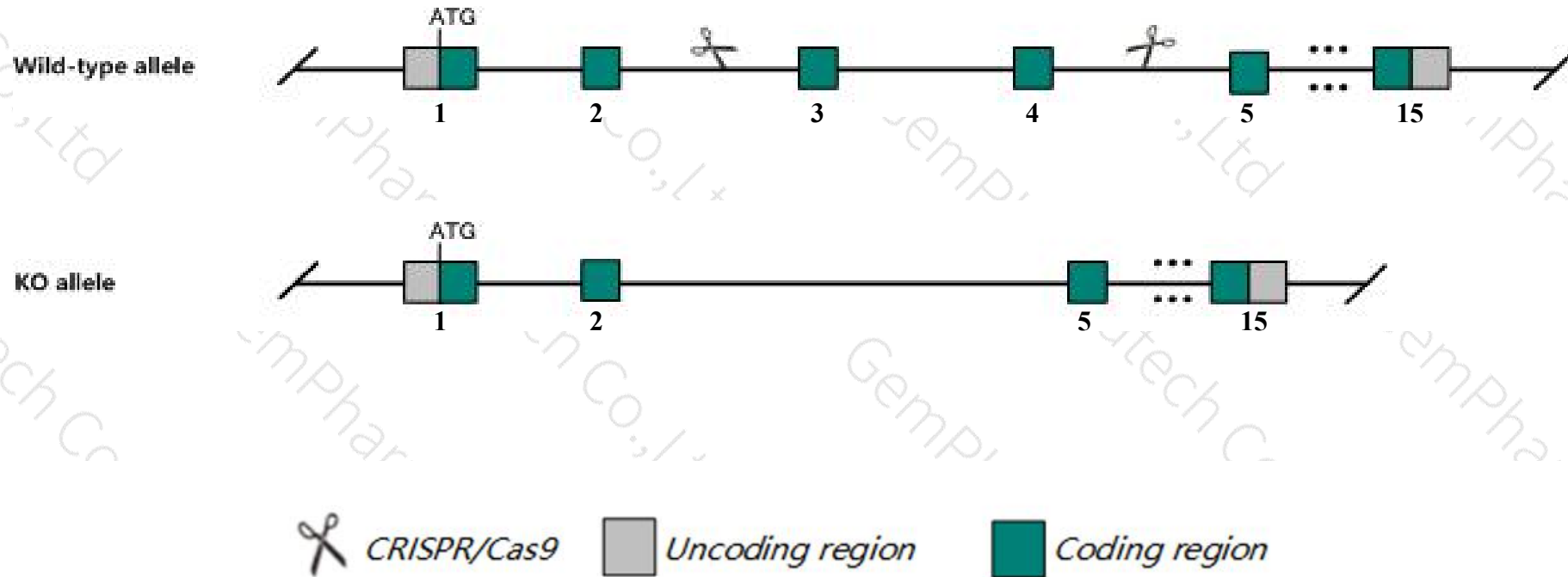
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pkd2l1* gene. The schematic diagram is as follows:



- The *Pkd2l1* gene has 2 transcripts. According to the structure of *Pkd2l1* gene, exon3-exon4 of *Pkd2l1-201* (ENSMUST00000042026.4) transcript is recommended as the knockout region. The region contains 382bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pkd2l1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit decreased chorda tympani nerve response to sour tastants.
- The *Pkd2l1* gene is located on the Chr19. 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 gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Pkd2l1 polycystic kidney disease 2-like 1 [*Mus musculus* (house mouse)]

Gene ID: 329064, updated on 8-Oct-2019

Summary

- Official Symbol** Pkd2l1 provided by [MGI](#)
- Official Full Name** polycystic kidney disease 2-like 1 provided by [MGI](#)
- Primary source** [MGI:MGI:1352448](#)
- See related** [Ensembl:ENSMUSG00000037578](#)
- 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** PCL; Pkd1; PKD2L; TRPP3; BC046386; B830002B15
- Expression** Biased expression in testis adult (RPKM 2.9), cerebellum adult (RPKM 1.0) and 3 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 19 C3; 19 36.91 cM See Pkd2l1 in [Genome Data Viewer](#)

Exon count: 26

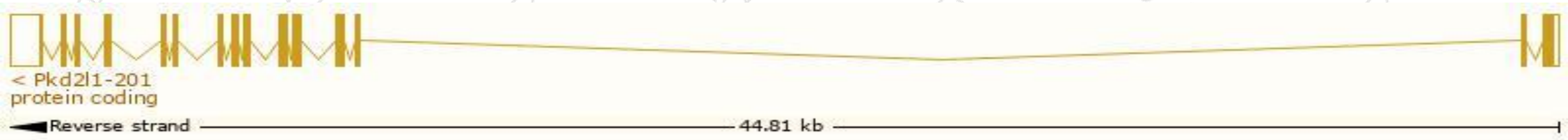
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	19	NC_000085.6 (44147637..44248328, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	19	NC_000085.5 (44222127..44266932, complement)

Transcript information (Ensembl)

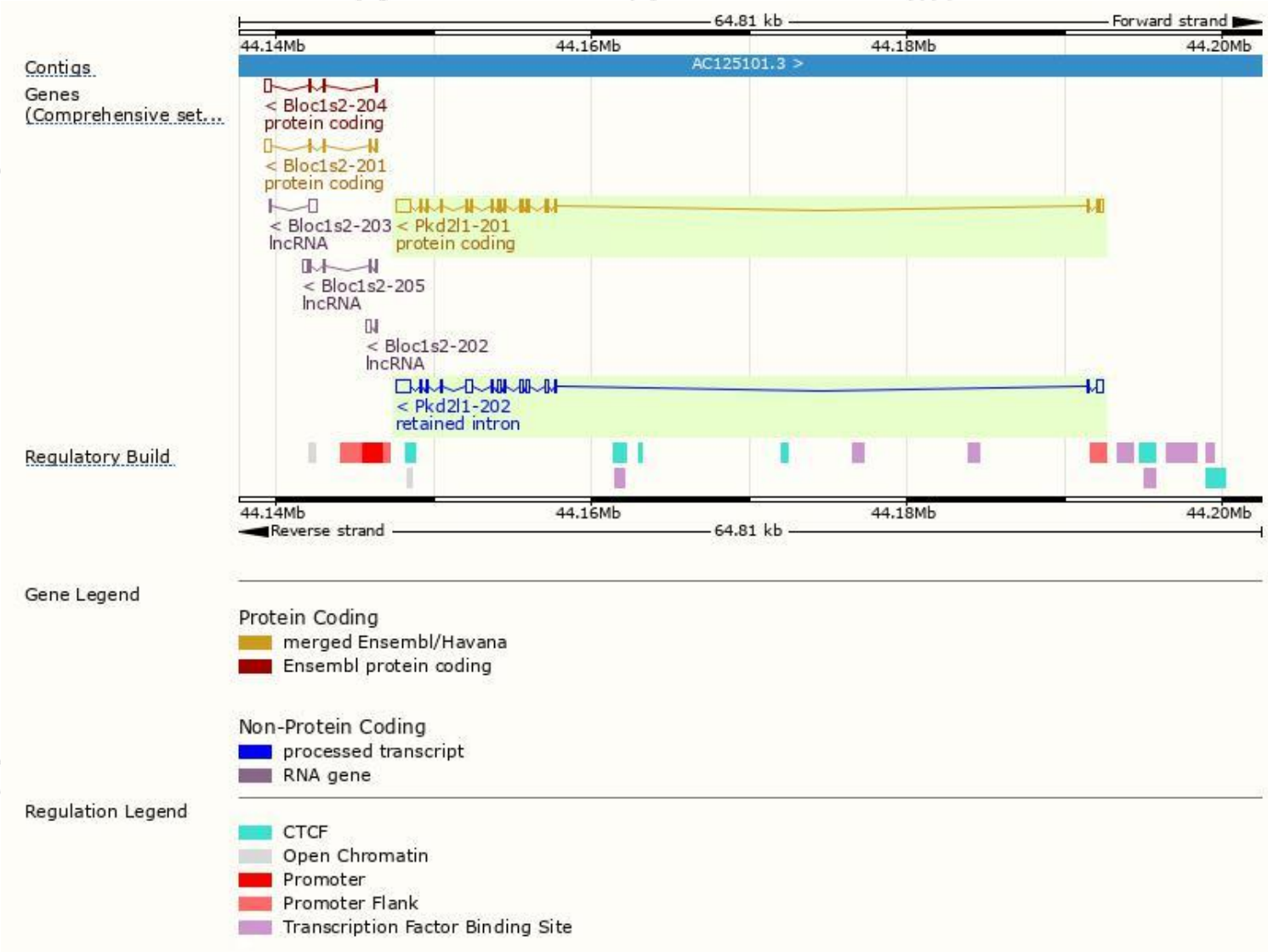
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pkd2l1-201	ENSMUST00000042026.4	3321	760aa	Protein coding	CCDS29846	A2A259	TSL:1 GENCODE basic APPRIS P1
Pkd2l1-202	ENSMUST00000161357.1	3529	No protein	Retained intron	-	-	TSL:2

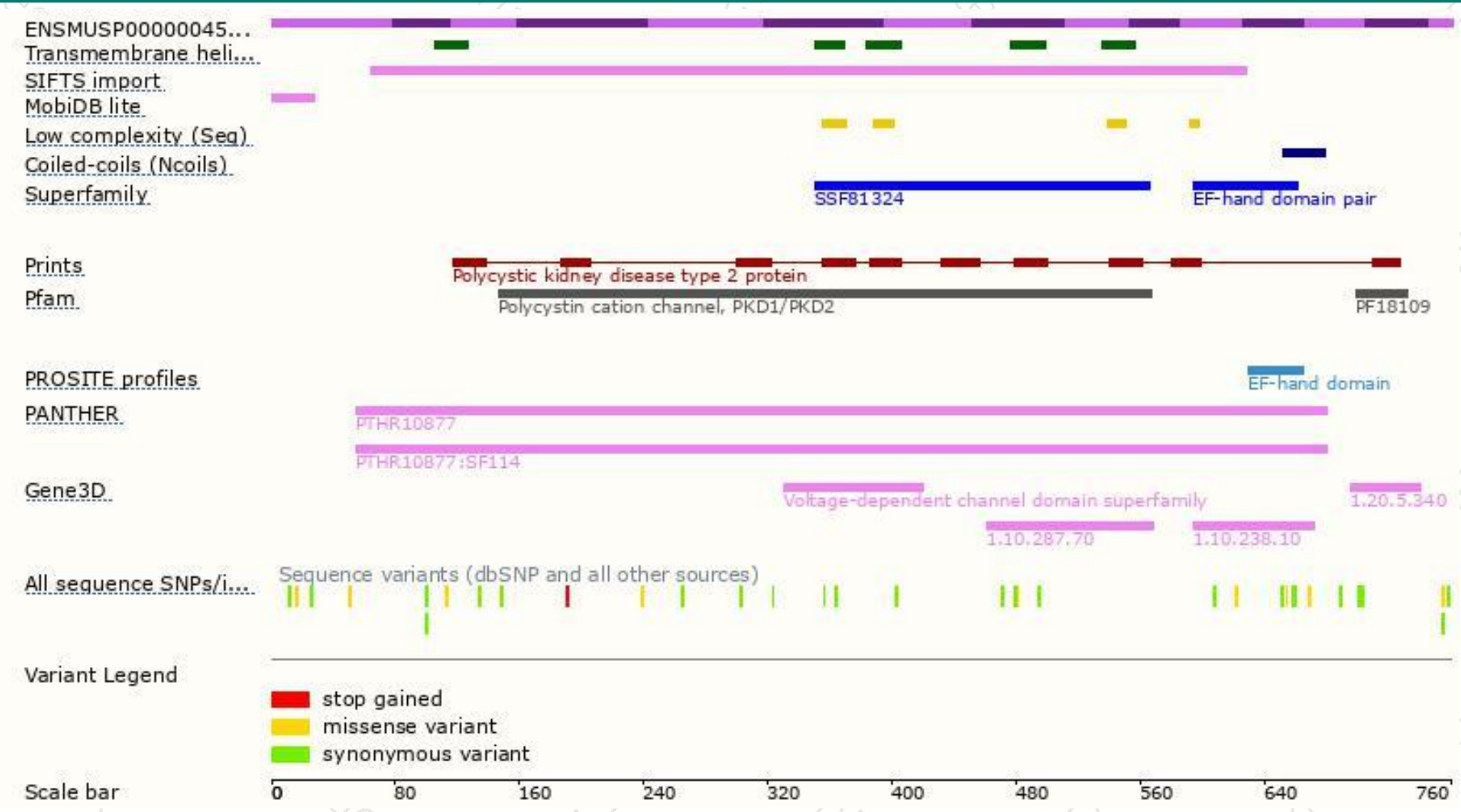
The strategy is based on the design of *Pkd2l1-201* transcript,The transcription is shown below



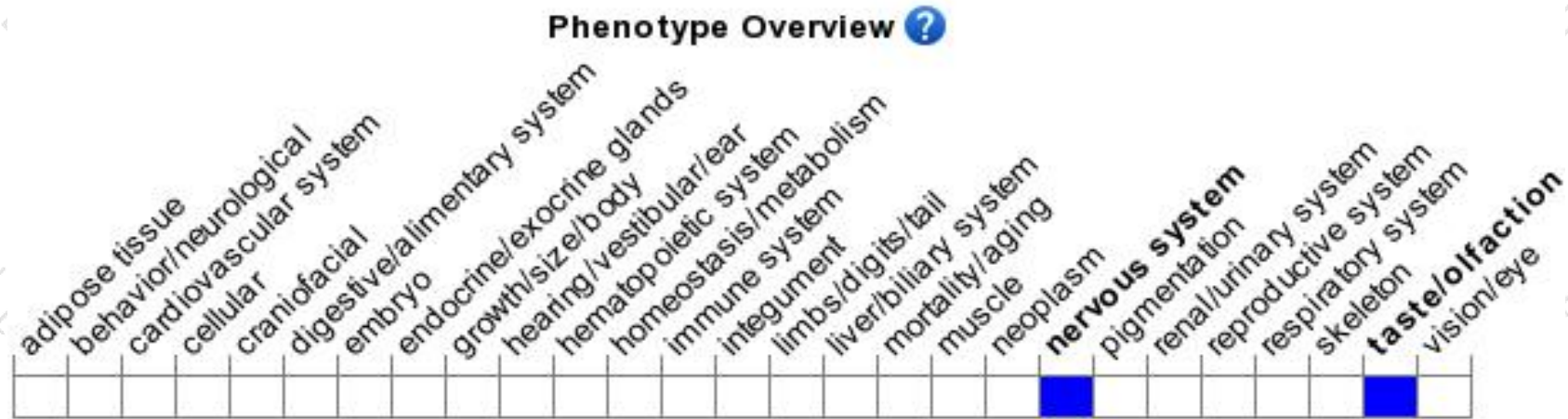
Genomic location distribution



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 knock-out allele exhibit decreased chorda tympani nerve response to sour tastants.

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

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