

***Comm6* Cas9-CKO Strategy**

Designer: Xiaojing Li

Reviewer: JiaYu

Design Date: 2020-10-14

Project Overview

Project Name

Commd6

Project type

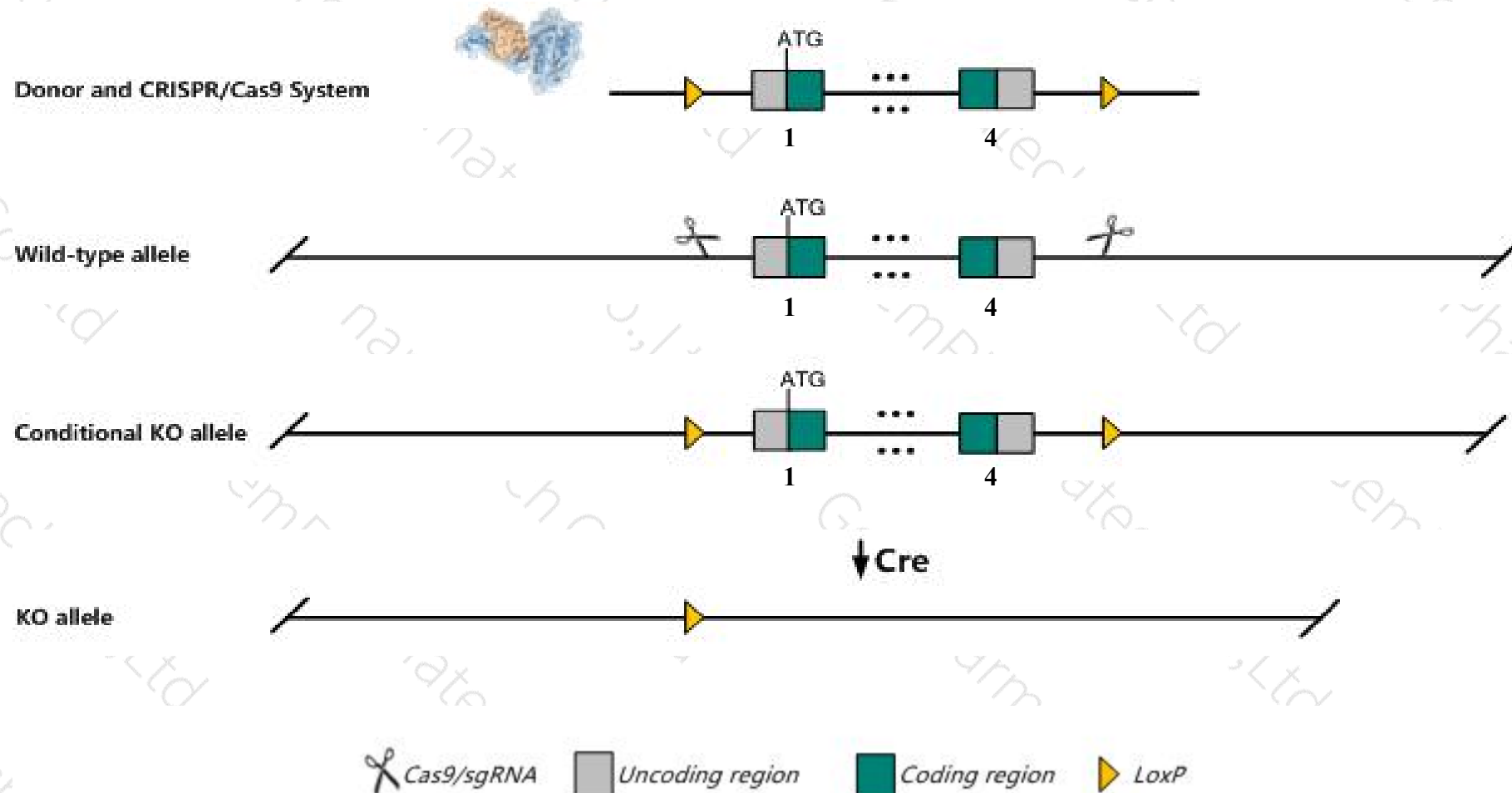
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Commd6* gene. The schematic diagram is as follows:



- The *Commd6* gene has 4 transcripts. According to the structure of *Commd6* gene, exon1-exon4 of *Commd6-201*(ENSMUST00000100339.8) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Commd6* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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.

- The *Commd6* gene is located on the Chr14. 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)

Commd6 COMM domain containing 6 [Mus musculus (house mouse)]

Gene ID: 66200, updated on 13-Mar-2020

Summary



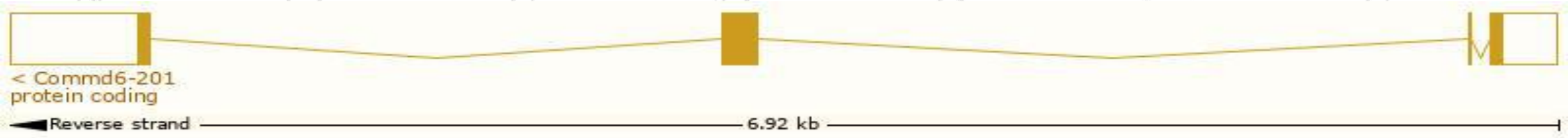
Official Symbol	Commd6 provided by MGI
Official Full Name	COMM domain containing 6 provided by MGI
Primary source	MGI:MGI:1913450
See related	Ensembl:ENSMUSG00000075486
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110059J08Rik, 1700063H17Rik
Expression	Ubiquitous expression in bladder adult (RPKM 15.4), placenta adult (RPKM 14.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

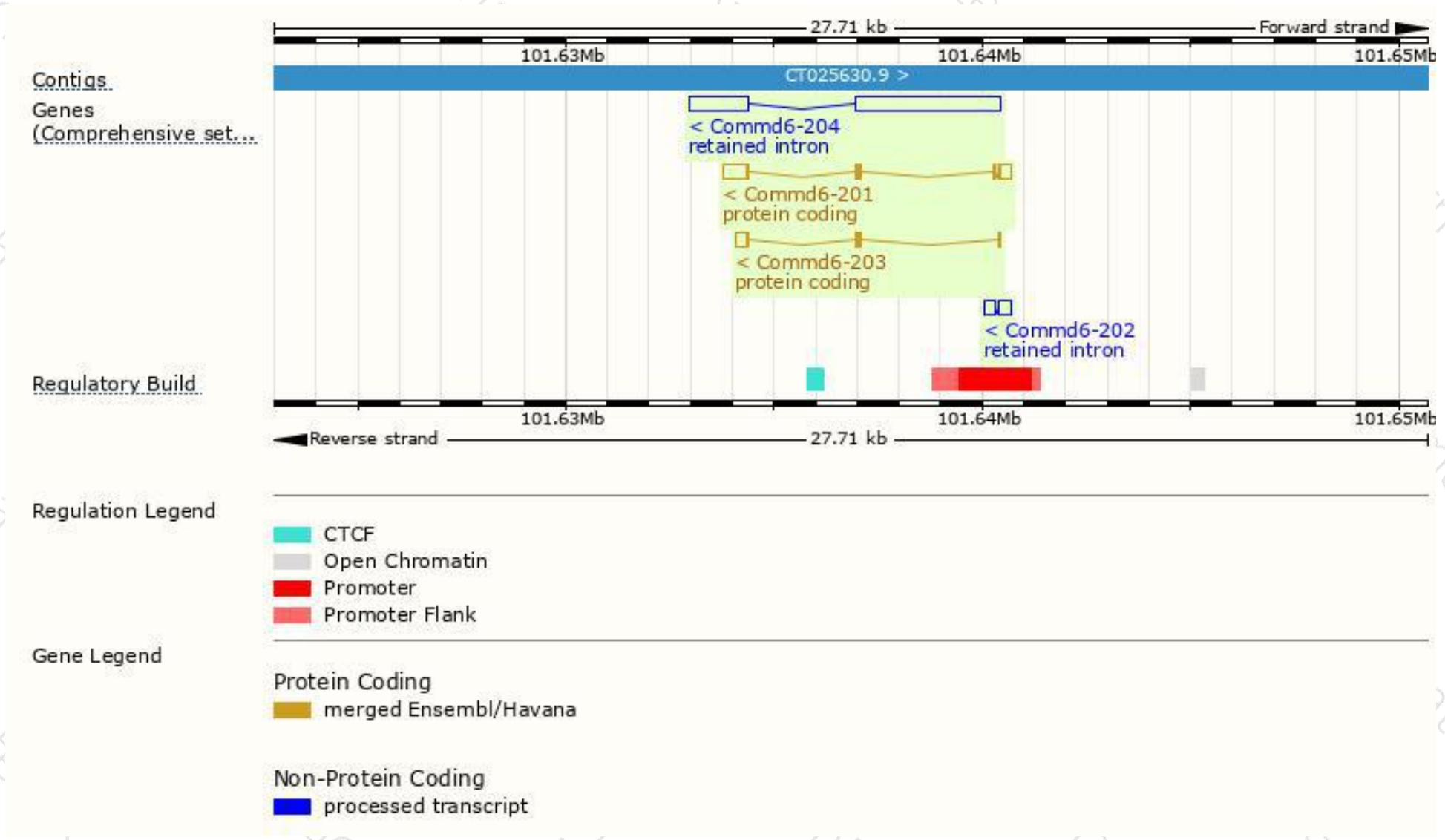
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Commd6-201	ENSMUST00000100339.8	1090	87aa	Protein coding	CCDS37000	B7ZNP2 Q3V4B5	TSL:1 GENCODE basic APPRIS P3
Commd6-203	ENSMUST00000168587.2	519	83aa	Protein coding	CCDS49557	B7ZNP3	TSL:1 GENCODE basic APPRIS ALT2
Commd6-204	ENSMUST00000227868.1	4907	No protein	Retained intron	-	-	
Commd6-202	ENSMUST00000131022.1	542	No protein	Retained intron	-	-	TSL:1

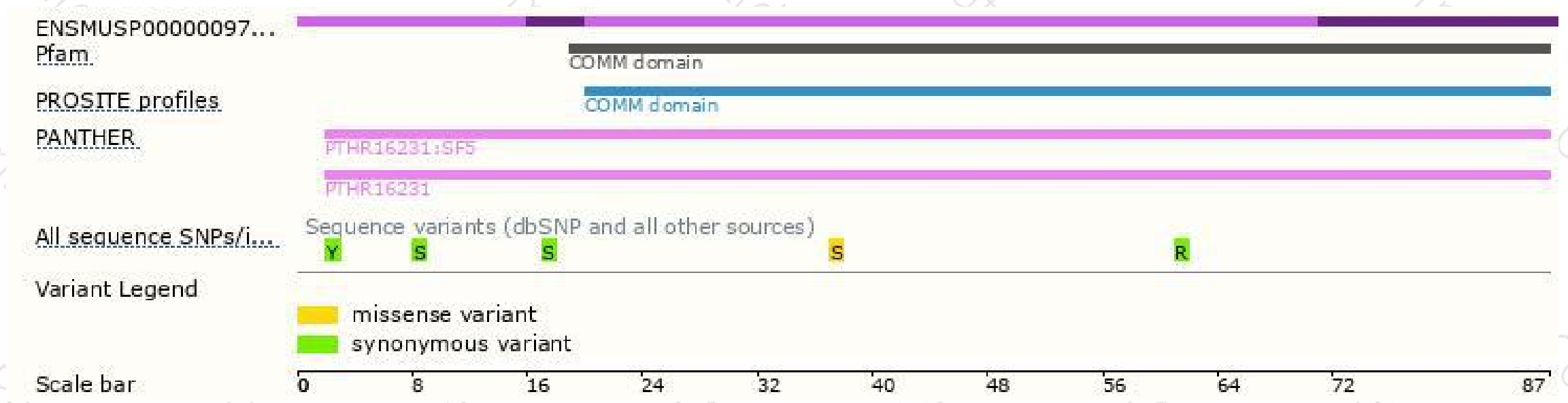
The strategy is based on the design of *Commd6-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

