Apol6 Cas9-CKO Strategy

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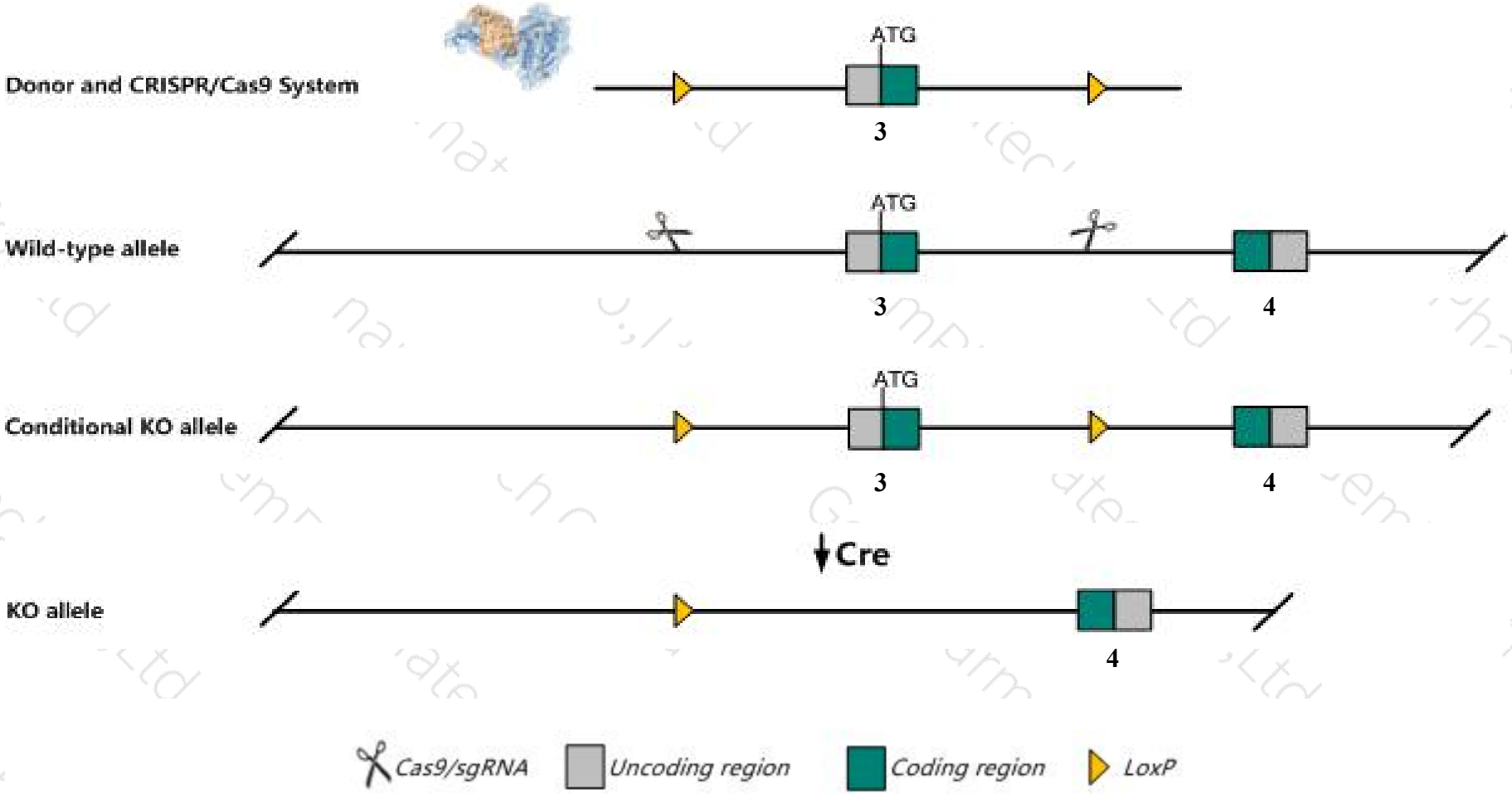
Project Overview

Project Name	***Apol6***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Apol6* gene. The schematic diagram is as follows:



Technical routes

➢ The *Apol6* gene has 7 transcripts. According to the structure of *Apol6* gene, exon3 of *Apol6-201*(ENSMUST00000127957.7) 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 *Apol6* 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.

Notice

➢ The KO region contains functional region of the Apol6 gene.Knockout the region may affect the function of Mb gene.

➢ The *Apol6* gene is located on the Chr15. 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）

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Apol6 apolipoprotein L 6 [Mus musculus (house mouse)]

Gene ID: 71939, updated on 13-Mar-2020

Summary

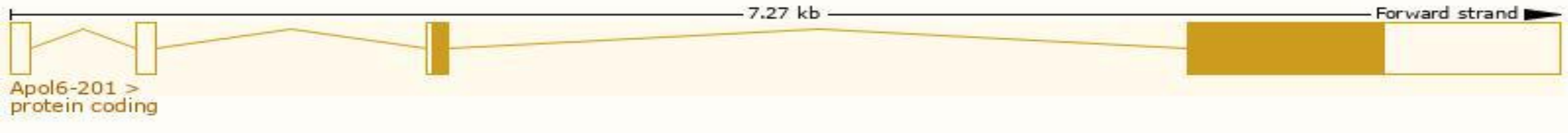
Official Symbol	Apol6 provided by MGI
Official Full Name	apolipoprotein L 6 provided byMGI
Primary source	MGI:MGI:1919189
See related	Ensembl:ENSMUSG00000033576
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310076O14Rik
Expression	Biased expression in subcutaneous fat pad adult (RPKM 49.6), genital fat pad adult (RPKM 29.2) and 4 other tissuesSee more

Transcript information（Ensembl）

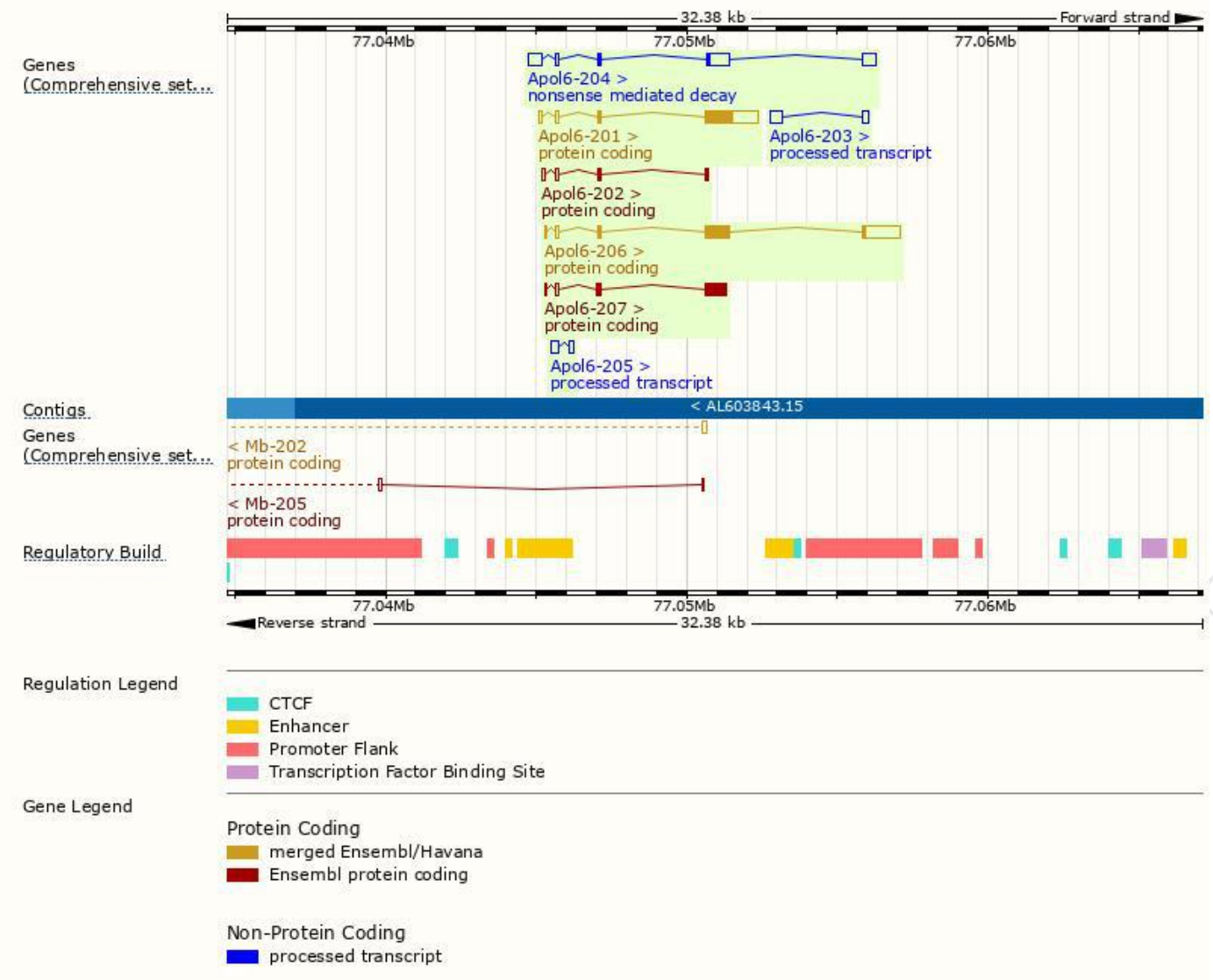
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Apol6-206	ENSMUST00000149569.8	2314	321aa	Protein coding	CCDS49655	B7ZC54	TSL:1 GENCODE basic APPRIS ALT2
Apol6-201	ENSMUST00000127957.7	2034	329aa	Protein coding	CCDS49656	B7ZC55	TSL:2 GENCODE basic APPRIS P4
Apol6-207	ENSMUST00000152949.1	995	262aa	Protein coding	-	B7ZC57	CDS 3' incomplete TSL:3
Apol6-202	ENSMUST00000129468.7	398	55aa	Protein coding	-	B7ZC56	CDS 3' incomplete TSL:2
Apol6-204	ENSMUST00000142405.7	1829	59aa	Nonsense mediated decay	-	D6RFC1	TSL:1
Apol6-203	ENSMUST00000139304.1	595	No protein	Processed transcript	-	-	TSL:3
Apol6-205	ENSMUST00000148197.1	397	No protein	Processed transcript	-	-	TSL:5

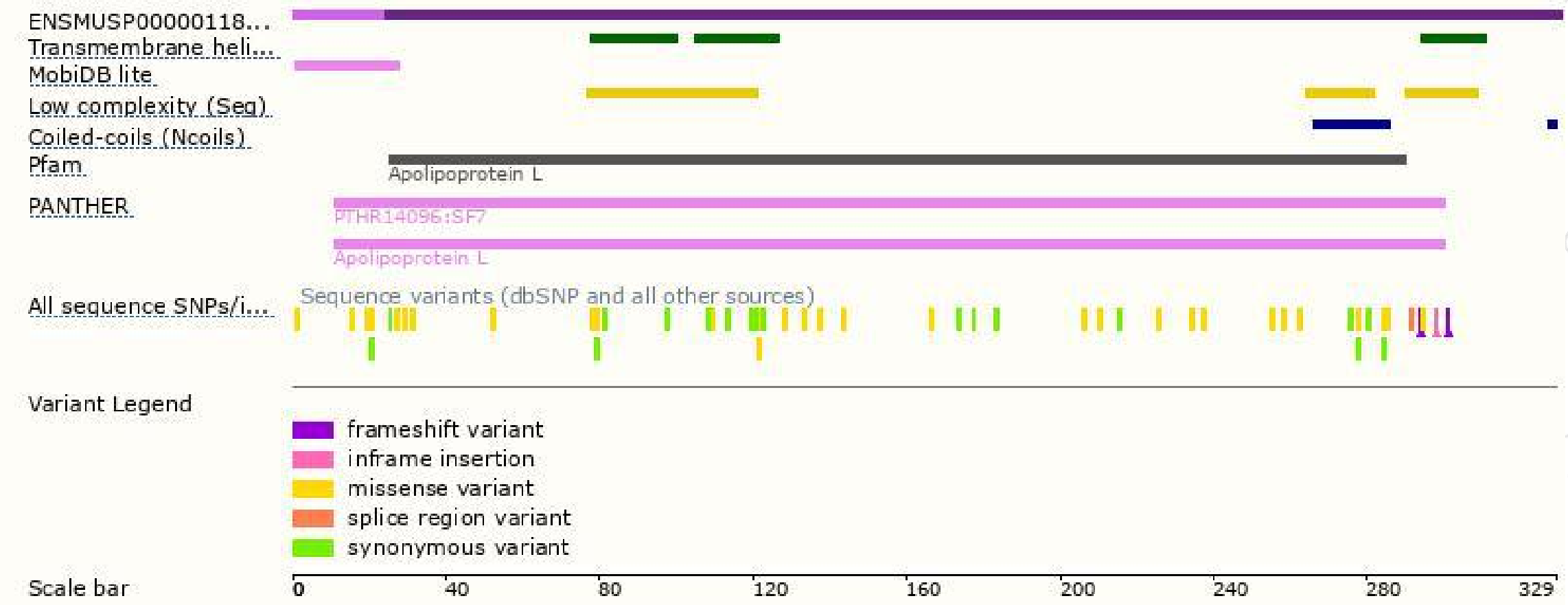
The strategy is based on the design of *Apol6-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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