

Apobec4 Cas9-CKO Strategy

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Project Overview

Project Name

Apobec4

Project type

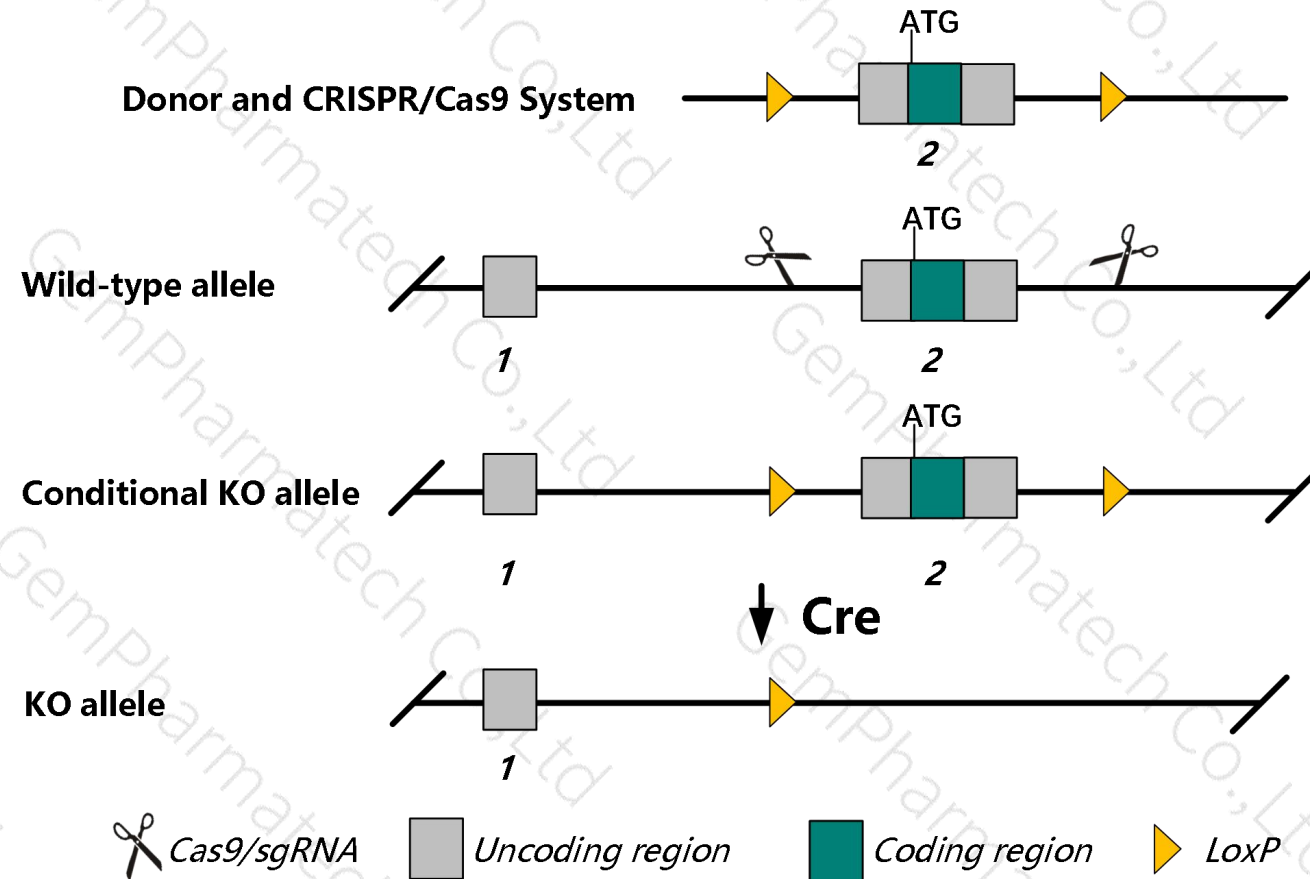
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Apobec4* gene. The schematic diagram is as follows:



Technical routes

- The *Apobec4* gene has 1 transcript. According to the structure of *Apobec4* gene, exon2 of *Apobec4-201* (ENSMUST00000068875.4) 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 *Apobec4* 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.

Notice

- The partial intron of *Rgl1* gene will be deleted together in this strategy.
- The floxed region is near to the N-terminal of *Gm28792* gene, this strategy may influence the regulatory function of the N-terminal of *Gm28792* gene.
- The *Apobec4* gene is located on the Chr1. 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)

Apobec4 apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 4 (putative) [Mus musculus (house mouse)]

Gene ID: 71281, updated on 26-Mar-2020

Summary



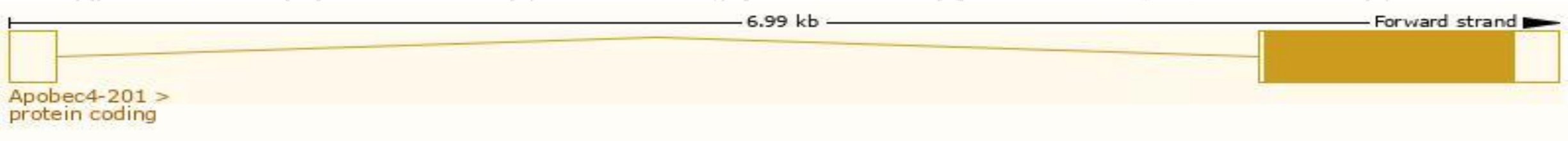
Official Symbol	Apobec4 provided by MGI
Official Full Name	apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 4 (putative) provided by MGI
Primary source	MGI:MGI:1918531
See related	Ensembl:ENSMUSG00000055547
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4933431M11Rik
Expression	Restricted expression toward testis adult (RPKM 23.3) See more
Orthologs	human all

Transcript information (Ensembl)

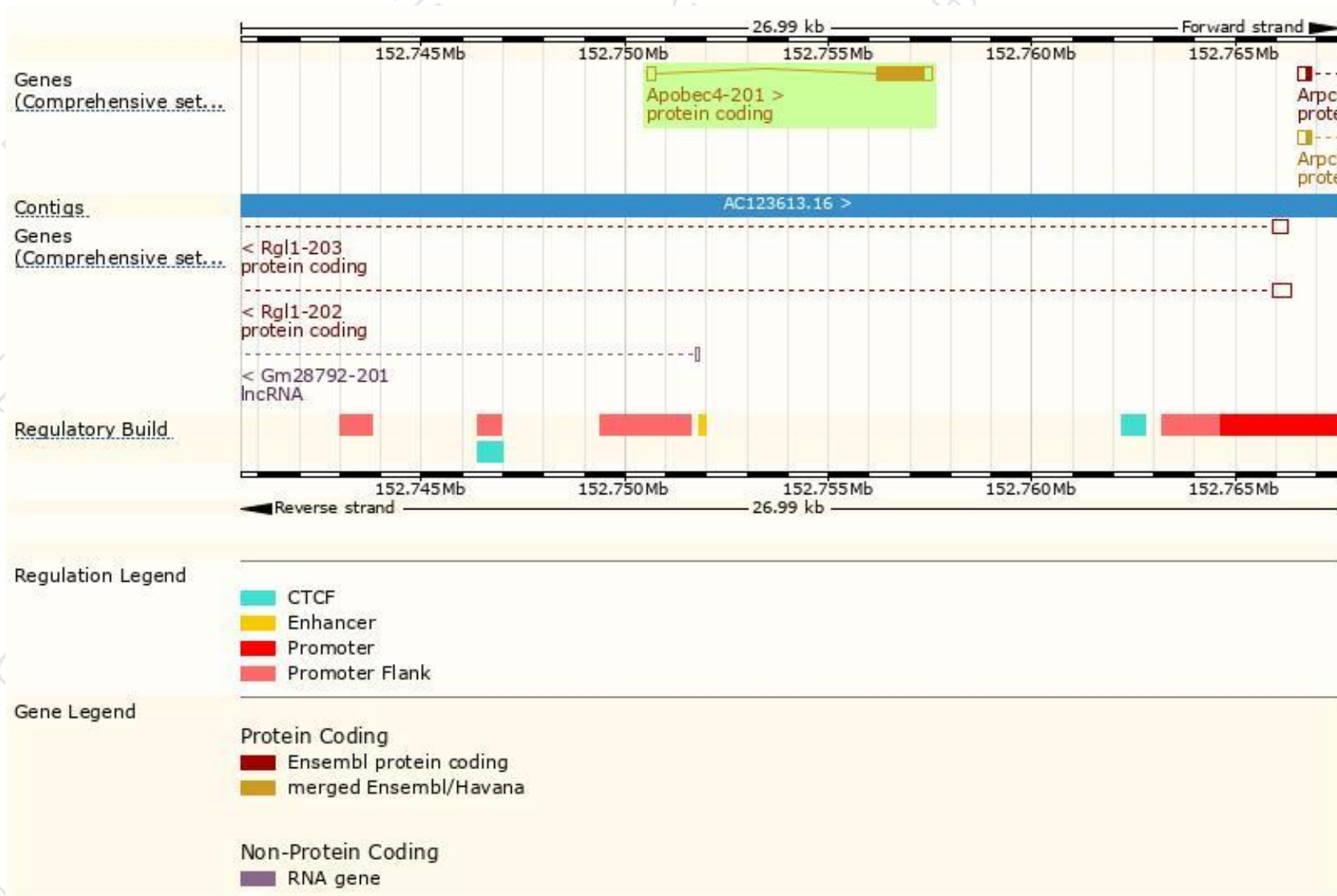
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Apobec4-201	ENSMUST00000068875.4	1566	374aa	Protein coding	CCDS35738	Q497M3	TSL:1 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P1

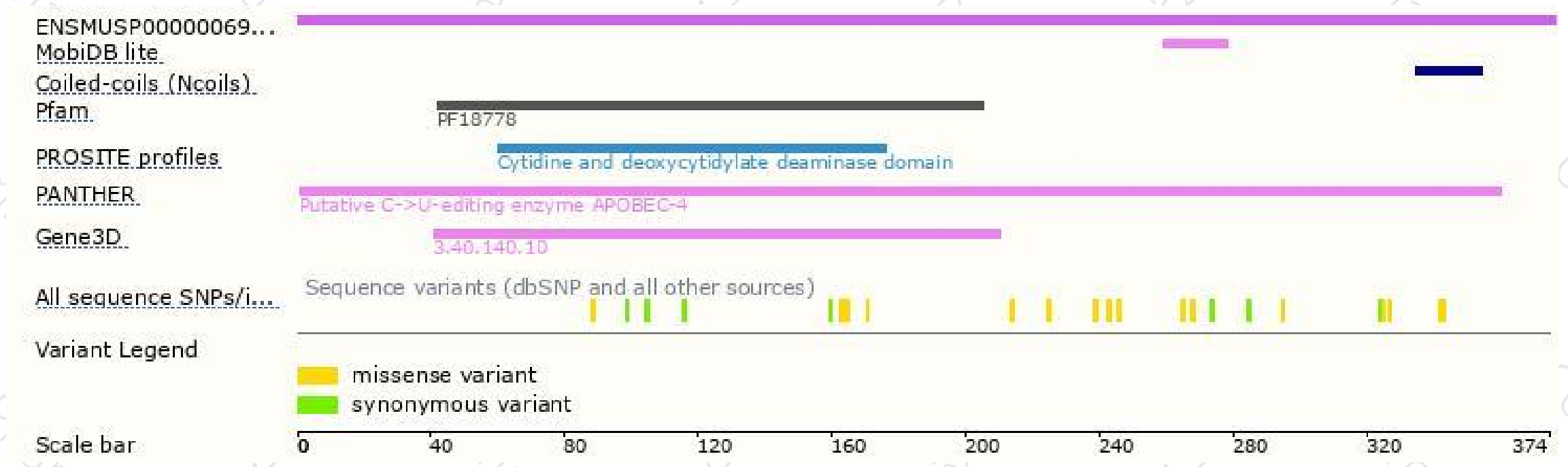
The strategy is based on the design of *Apobec4-201* transcript, the transcription is shown below



Genomic location distribution



Protein domain



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

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