

Avl9 Cas9-CKO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Avl9

Project type

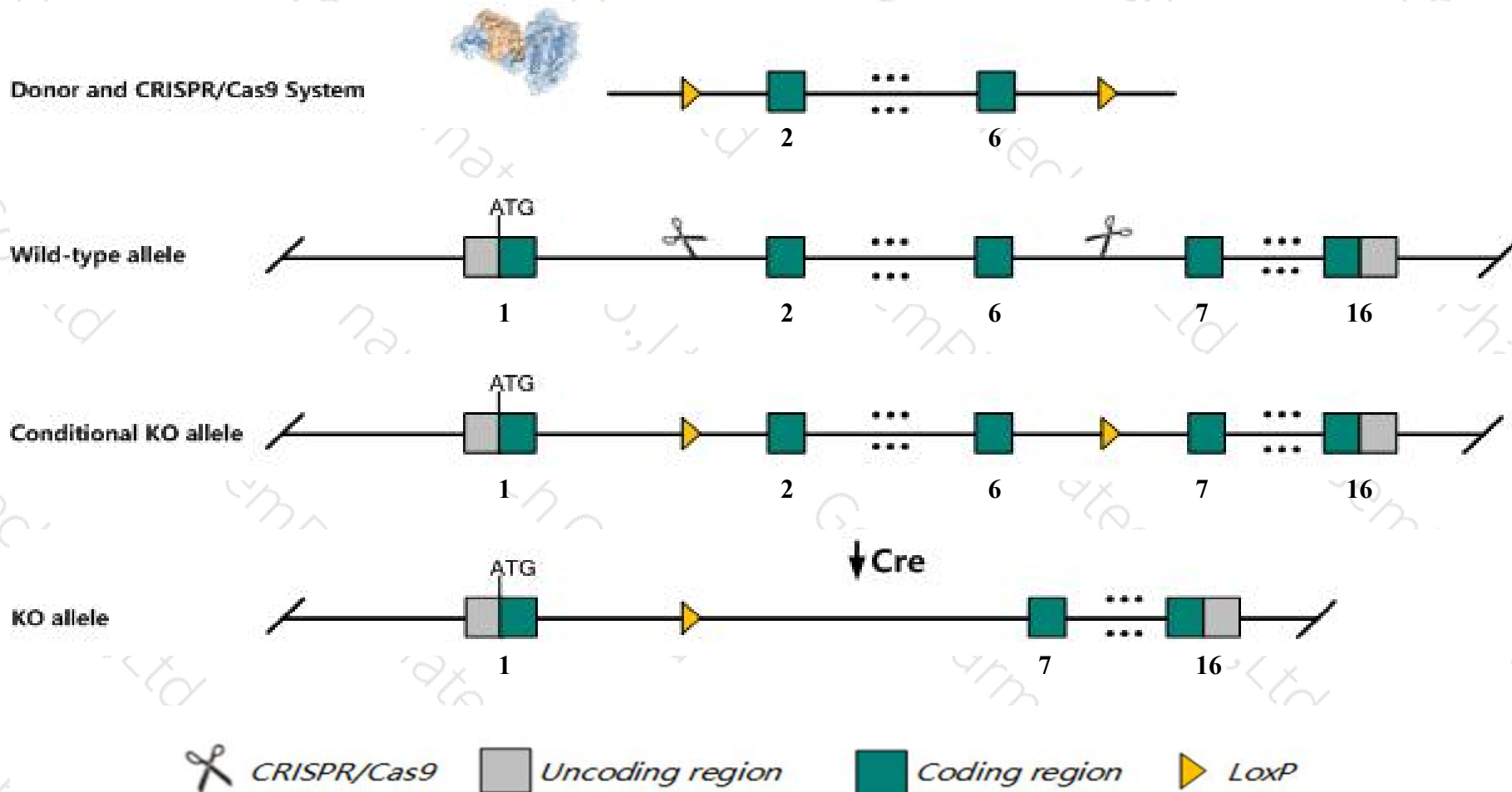
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Avl9* gene. The schematic diagram is as follows:



Technical routes

- The *Avl9* gene has 5 transcripts. According to the structure of *Avl9* gene, exon2-exon6 of *Avl9-201* (ENSMUST00000031805.10) transcript is recommended as the knockout region. The region contains 436bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Avl9* 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 *Avl9* gene is located on the Chr6. 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)

Avl9 AVL9 cell migration associated [Mus musculus (house mouse)]

Gene ID: 78937, updated on 13-Mar-2020

Summary



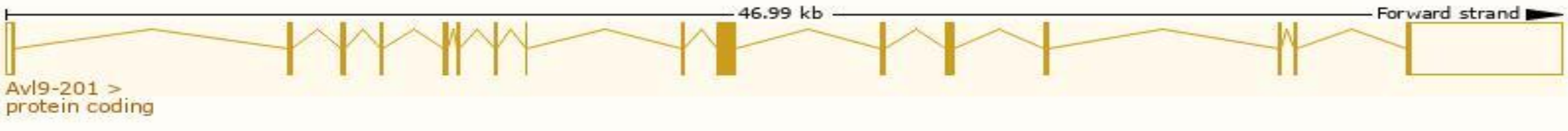
Official Symbol	Avl9 provided by MGI
Official Full Name	AVL9 cell migration associated provided by MGI
Primary source	MGI:MGI:1926187
See related	Ensembl:ENSMUSG00000029787
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	5830411G16Rik, D730049P16Rik, mKIAA0241
Expression	Ubiquitous expression in whole brain E14.5 (RPKM 9.7), CNS E14 (RPKM 8.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

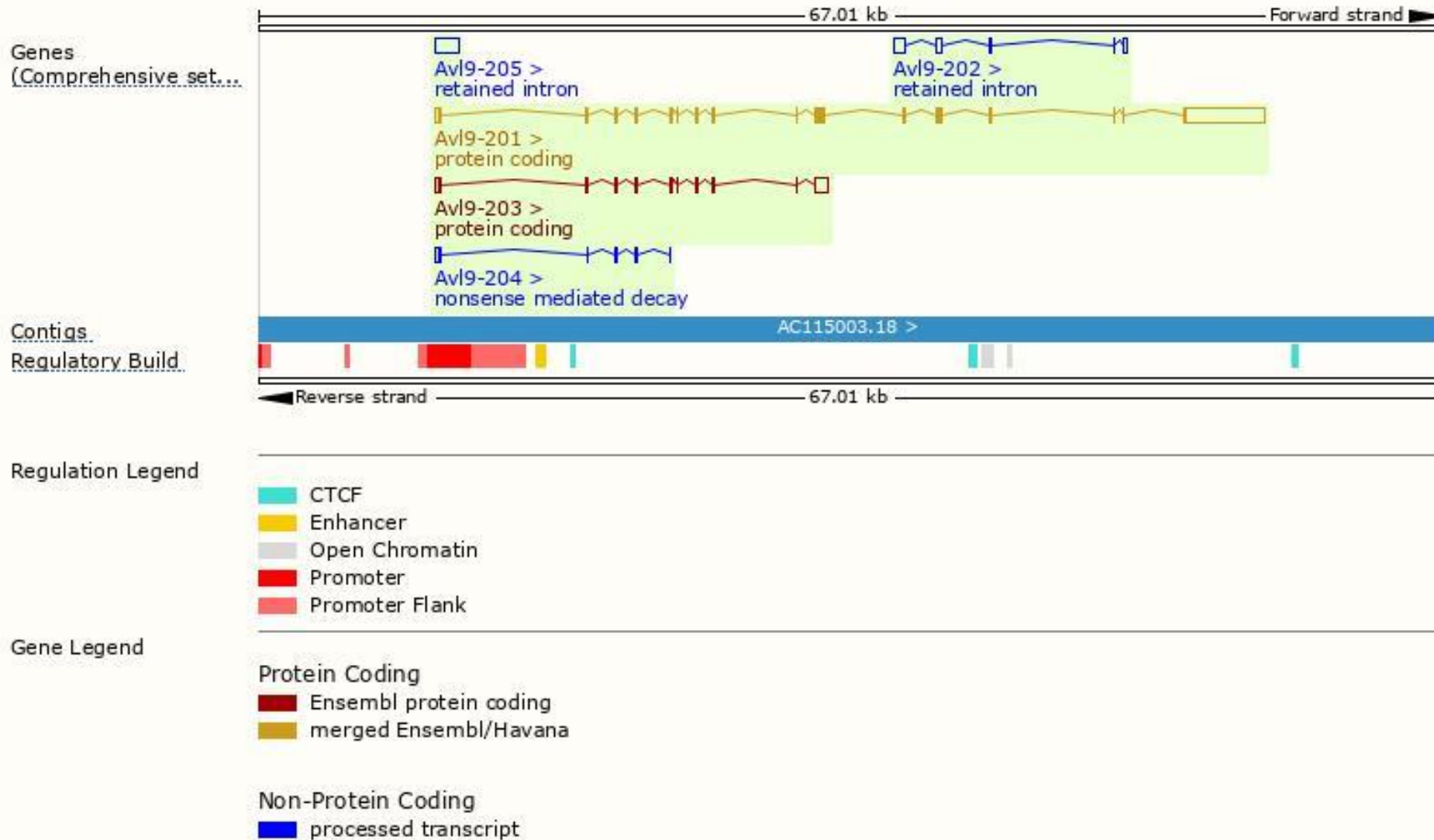
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Avl9-201	ENSMUST00000031805.10	6670	649aa	Protein coding	CCDS51789	Q80U56	TSL:1 GENCODE basic APPRIS P1
Avl9-203	ENSMUST00000177249.2	1614	222aa	Protein coding	-	A0A0N4SUI4	TSL:1 GENCODE basic
Avl9-204	ENSMUST00000204193.1	585	91aa	Nonsense mediated decay	-	A0A0N4SVD3	TSL:3
Avl9-205	ENSMUST00000205188.1	1414	No protein	Retained intron	-	-	TSL:NA
Avl9-202	ENSMUST00000176560.1	1198	No protein	Retained intron	-	-	TSL:5

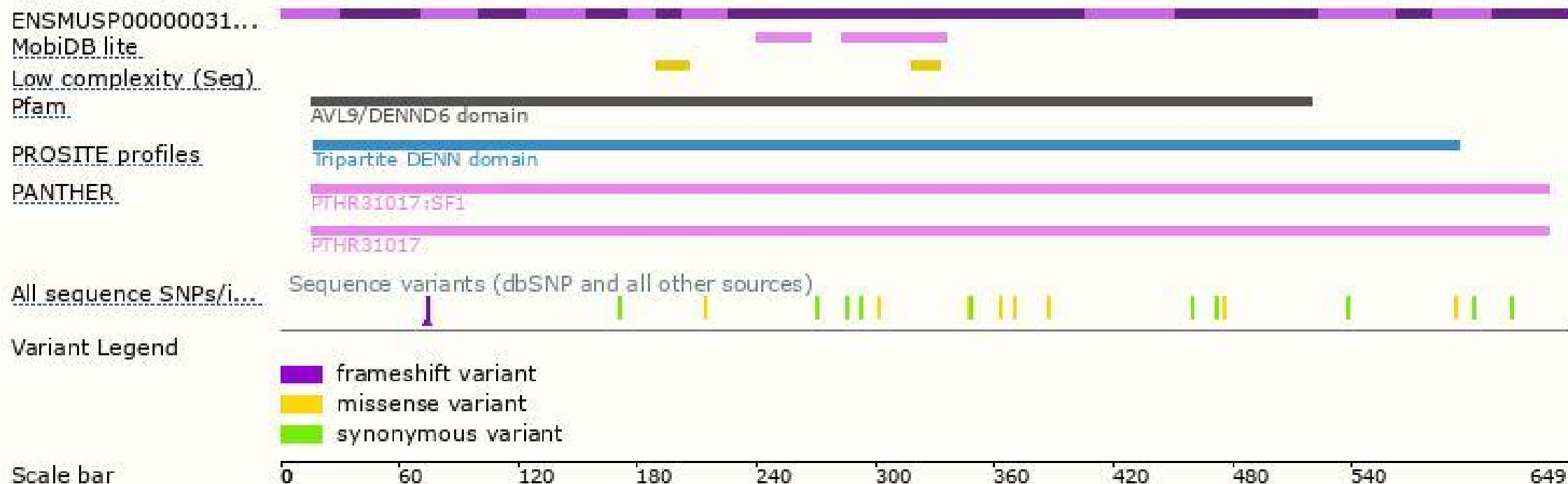
The strategy is based on the design of *Avl9-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

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