

Armh4 Cas9-KO Strategy

Designer:

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Project Overview

Project Name

Armh4

Project type

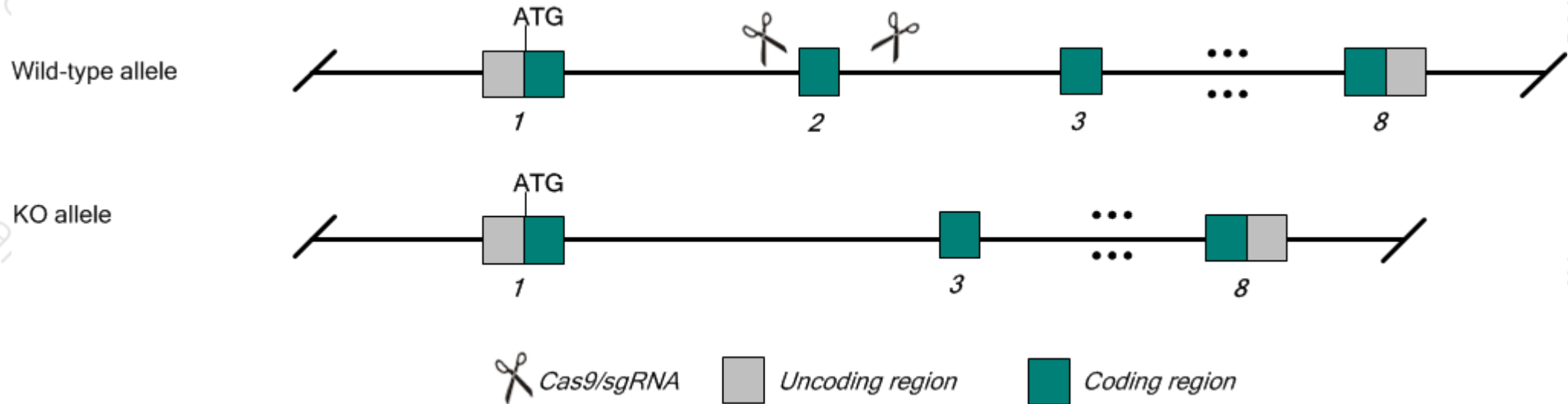
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Armh4* gene. The schematic diagram is as follows:



Technical routes

- The *Armh4* gene has 3 transcripts, According to the structure of *Armh4* gene, exon2 of *Armh4-201* transcript is recommended as the knockout region. The region contains the 1378bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Armh4* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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.

- Transcript *Armh4-203* may not be affected.
- The *Armh4* gene is located in 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 the loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Armh4 armadillo-like helical domain containing 4 [*Mus musculus* (house mouse)]

Gene ID: 67419, updated on 31-Jan-2019

Summary

Official Symbol	Armh4 provided by MGI
Official Full Name	armadillo-like helical domain containing 4 provided by MGI
Primary source	MGI:MGI:1914669
See related	Ensembl:ENSMUSG000000036242
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	AU067705; 3632451O06Rik
Expression	Broad expression in cerebellum adult (RPKM 12.4), bladder adult (RPKM 10.1) and 15 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

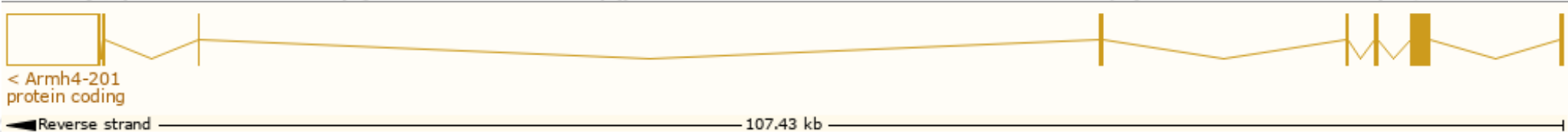


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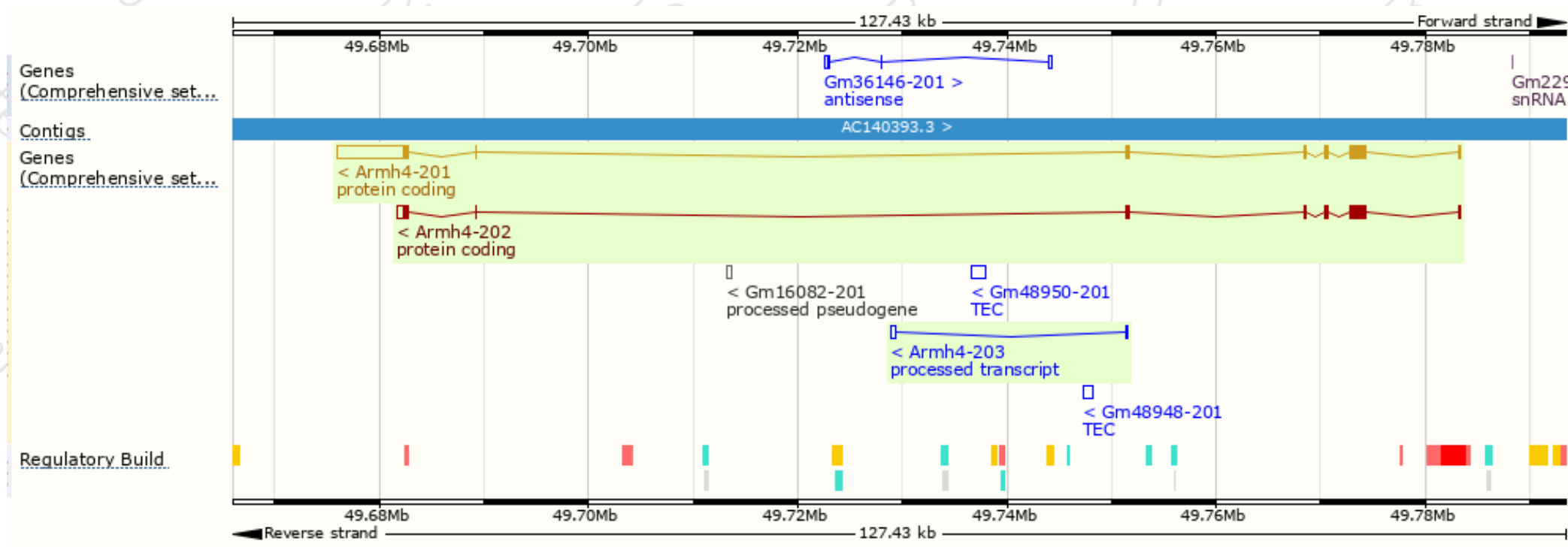
The gene has 3 transcripts, and all transcripts are shown below :

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
Armh4-201	ENSMUST00000036972.13	8831	775aa	Protein coding	CCDS36903	Q8BT18	NM_026142 NP_080418	TSL:1 Gencode basic APPRIS P2
Armh4-202	ENSMUST00000118129.1	3100	774aa	Protein coding	-	D3Z566	NP_001345173	TSL:1 Gencode basic APPRIS ALT2
Armh4-203	ENSMUST00000177321.1	569	No protein	Processed transcript	-	-	-	TSL:3

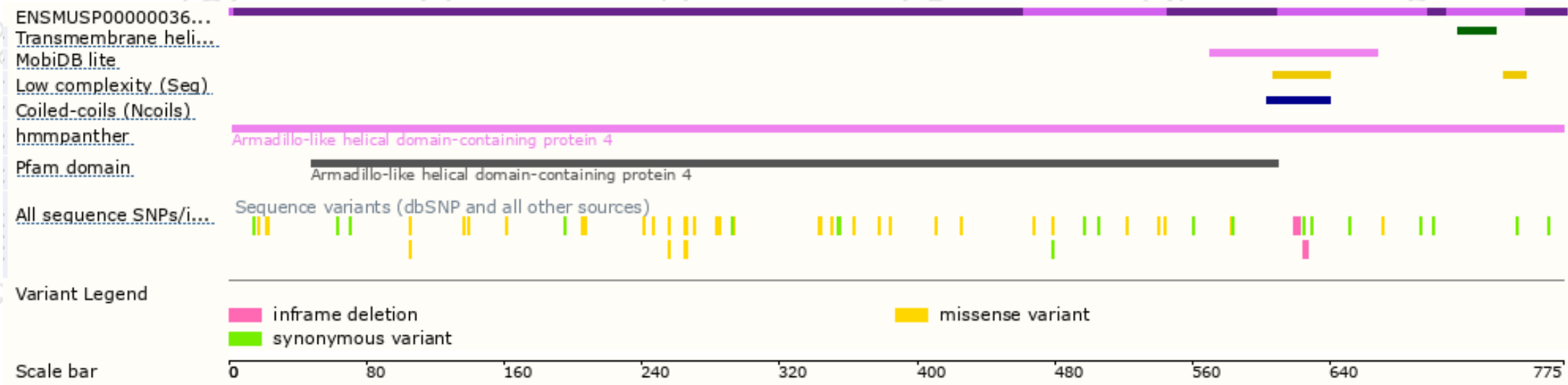
The strategy is based on the design of *Armh4-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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