

# ***Armh4 Cas9-CKO Strategy***

**Designer:**

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# Project Overview



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**Project Name**

***Armh4***

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**Project type**

**Cas9-CKO**

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**Strain background**

**C57BL/6JGpt**

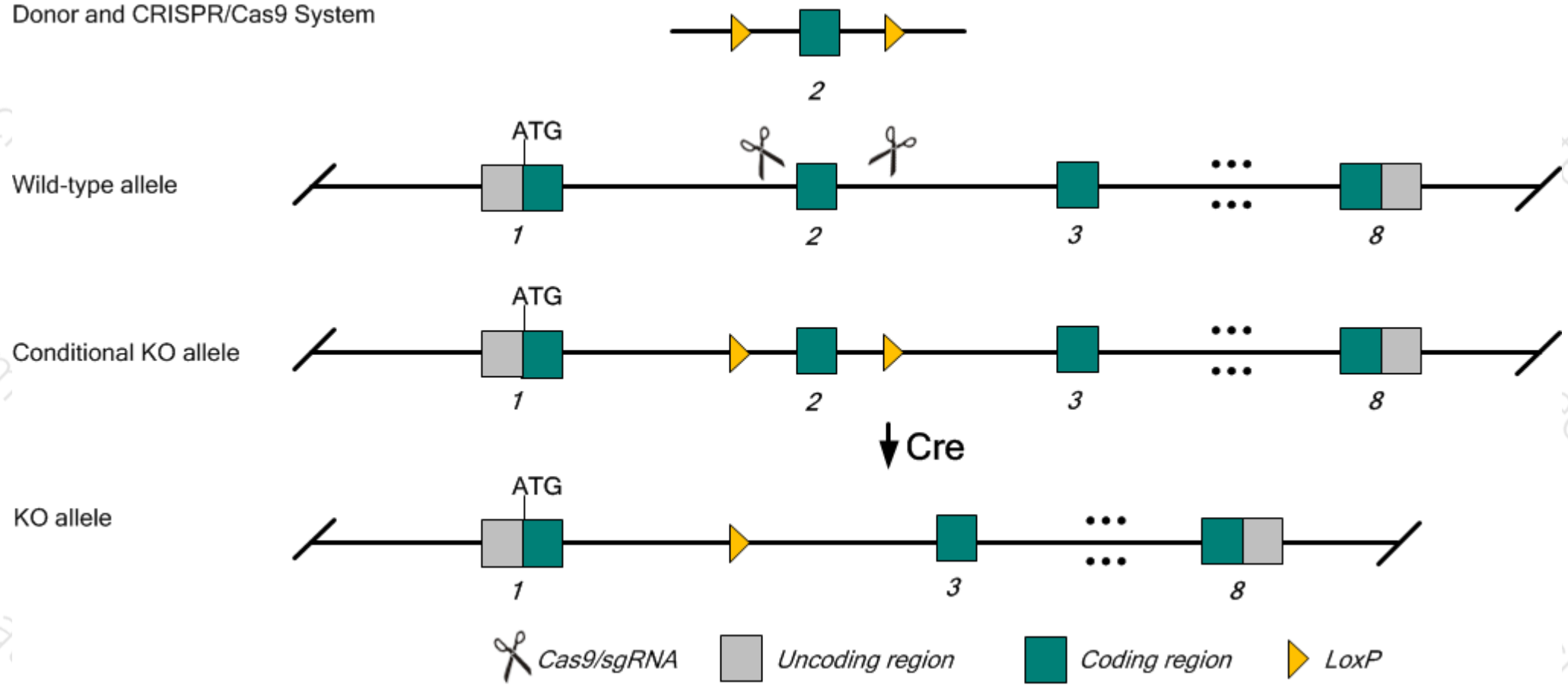
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# Conditional Knockout strategy

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

Donor and CRISPR/Cas9 System





- 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, 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 or cell types.



- 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 <a href="#">MGI</a>
Official Full Name	armadillo-like helical domain containing 4 provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:1914669</a>
See related	<a href="#">Ensembl:ENSMUSG000000036242</a>
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<a href="#">Mus musculus</a>
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 <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>



# Transcript information (Ensembl)

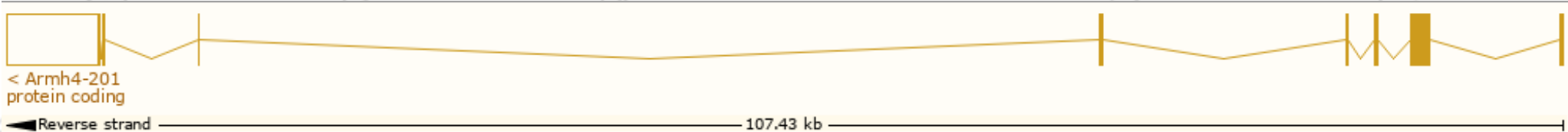


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The gene has 3 transcripts, and all transcripts are shown below :

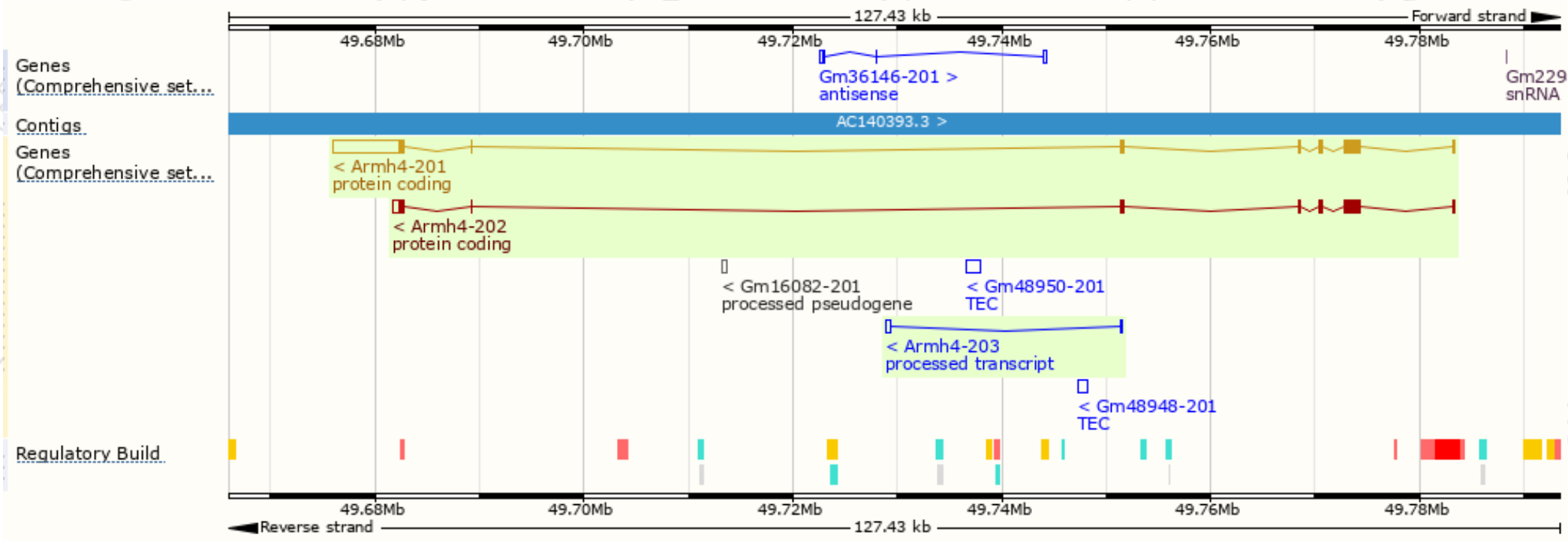
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
Armh4-201	<a href="#">ENSMUST00000036972.13</a>	8831	<a href="#">775aa</a>	<div><div></div>Protein coding</div>	<a href="#">CCDS36903</a>	<a href="#">Q8BT18</a>	<a href="#">NM_026142</a> <a href="#">NP_080418</a>	TSL:1 GENCODE basic APPRIS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

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



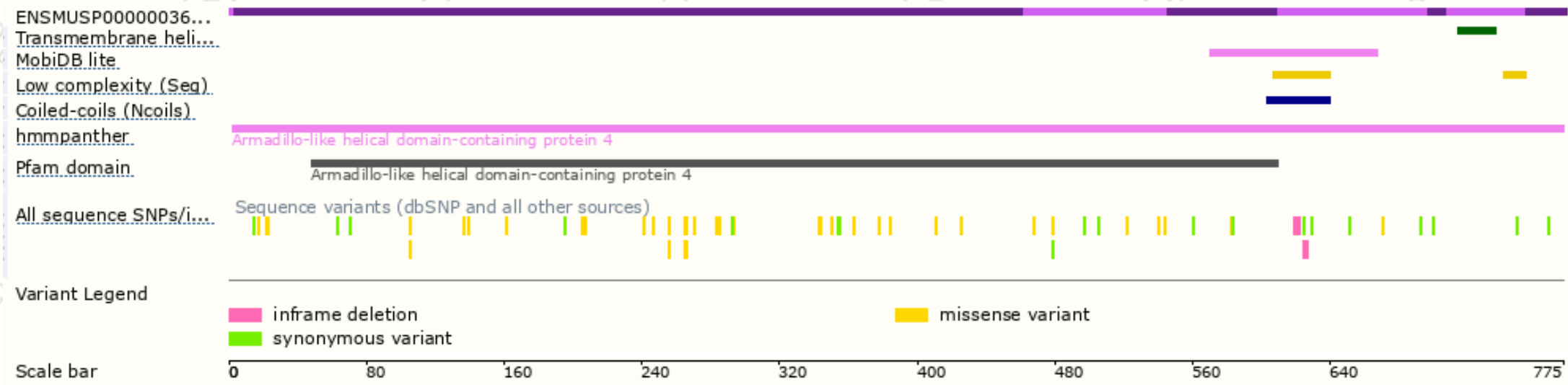


# Genomic location distribution





# Protein domain





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