Armc6 Cas9-CKO Strategy

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Project Overview

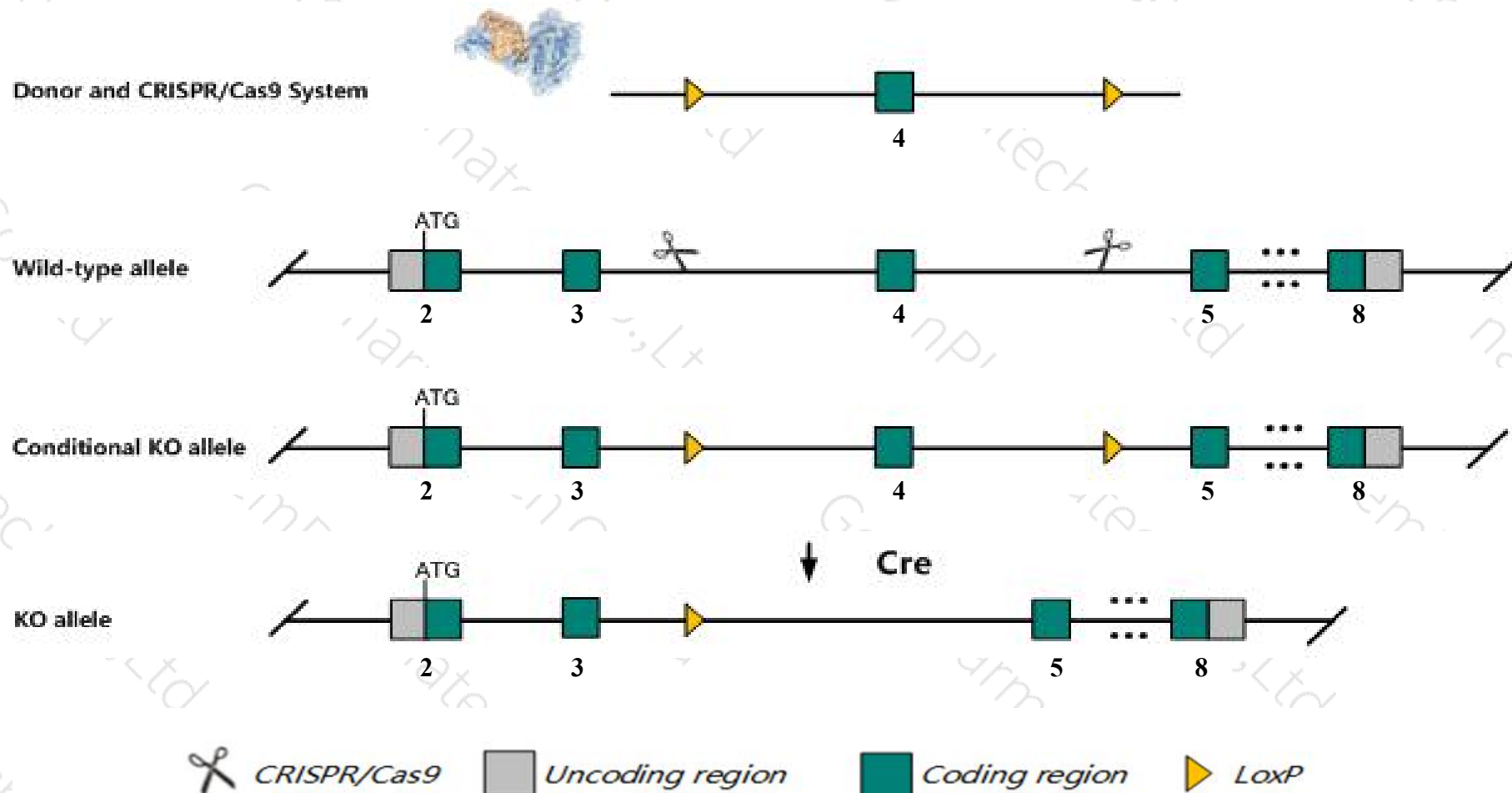|	
Project Name	***Armc6***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Armc6* gene. The schematic diagram is as follows:

Technical routes

➤ The *Armc6* gene has 6 transcripts. According to the structure of *Armc6* gene, exon4 of *Armc6-201* (ENSMUST00000019679.11) transcript is recommended as the knockout region.The region contains 574bp coding sequence. Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Armc6* 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

➢ Transcript *Armc6*-204&205 may not be affected .

➢ The floxed region is near to the N-terminal of *Sugp2* gene,this strategy may influence the regulatory function of the N-terminal of *Sugp2* gene.

➢ The *Armc6* gene is located on the Chr8. 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）

Armc6 armadillo repeat containing 6 [Mus musculus (house mouse)]

Gene ID: 76813, updated on 31-Jan-2019

Summary

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Official Symbol	Armc6 provided by MGI
Official Full Name	armadillo repeat containing 6 provided by MGI
Primary source	MGI:MGI:1924063
See related	Ensembl:ENSMUSG00000002343
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	2410153K17Rik, AW554412
Expression	Ubiquitous expression in CNS E18 (RPKM 25.6), whole brain E14.5 (RPKM 18.6) and 28 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Armc6-201	ENSMUST00000019679.11	2263	468aa	Protein coding	CCDS40371	Q8BNU0	TSL:1 GENCODE basic APPRIS P1
Armc6-202	ENSMUST00000130319.1	547	120aa	Protein coding	-	D3Z3J0	CDS 3' incomplete TSL:5
Armc6-203	ENSMUST00000135931.1	1414	No protein	Retained intron	-	-	TSL:1
Armc6-205	ENSMUST00000139765.1	1090	No protein	Retained intron	-	-	TSL:2
Armc6-206	ENSMUST00000147387.1	782	No protein	Retained intron	-	-	TSL:2
Armc6-204	ENSMUST00000136666.1	586	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Armc6-201* transcript,The transcription is shown below

< Armc6-201
protein coding

◄ Reverse strand

14.29 kb
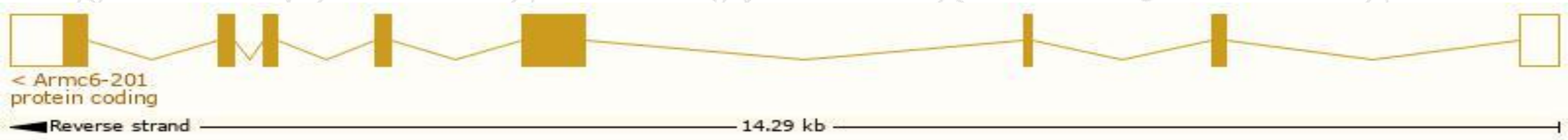
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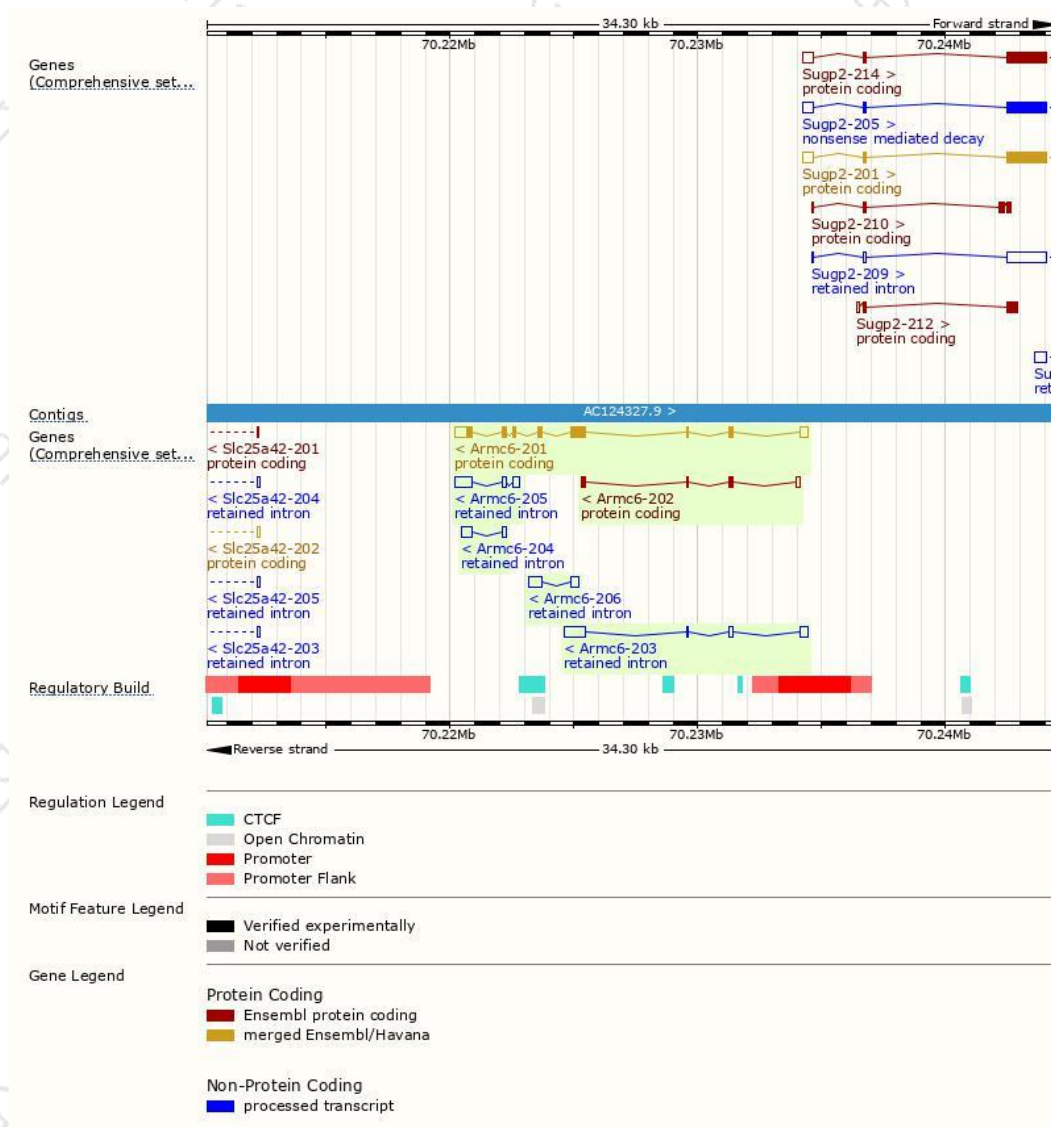
Protein domain
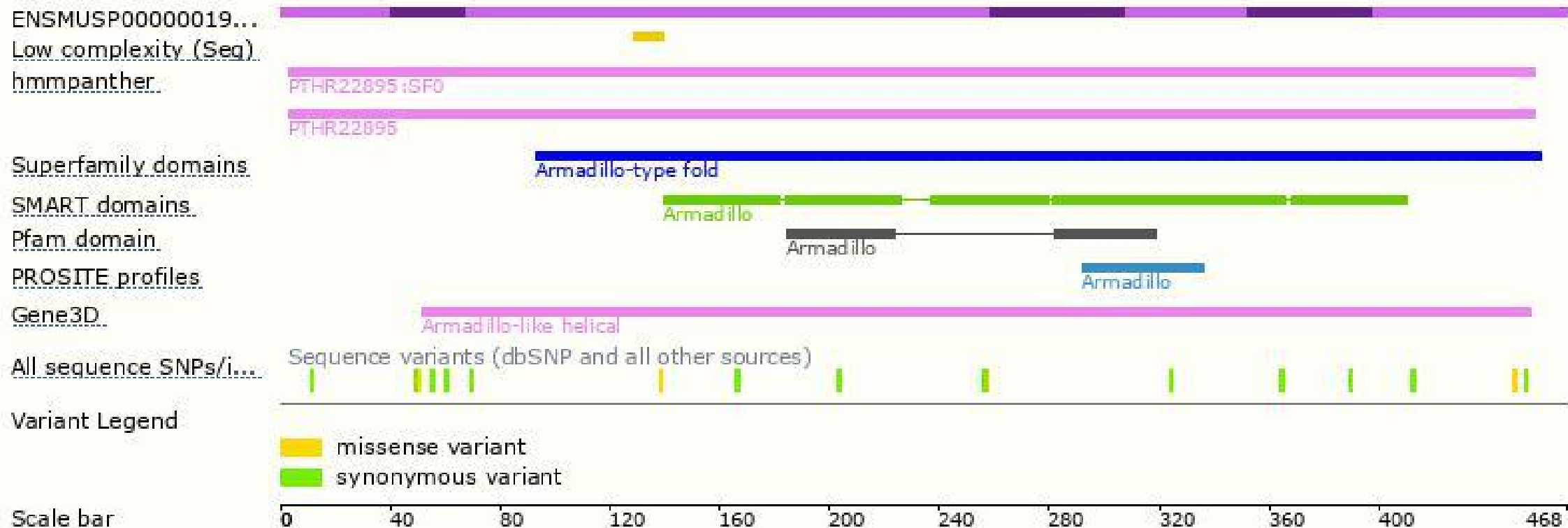
If you have any questions, you are welcome to inquire.
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