

Rsph14 Cas9-CKO Strategy

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Project Overview

Project Name

Rsph14

Project type

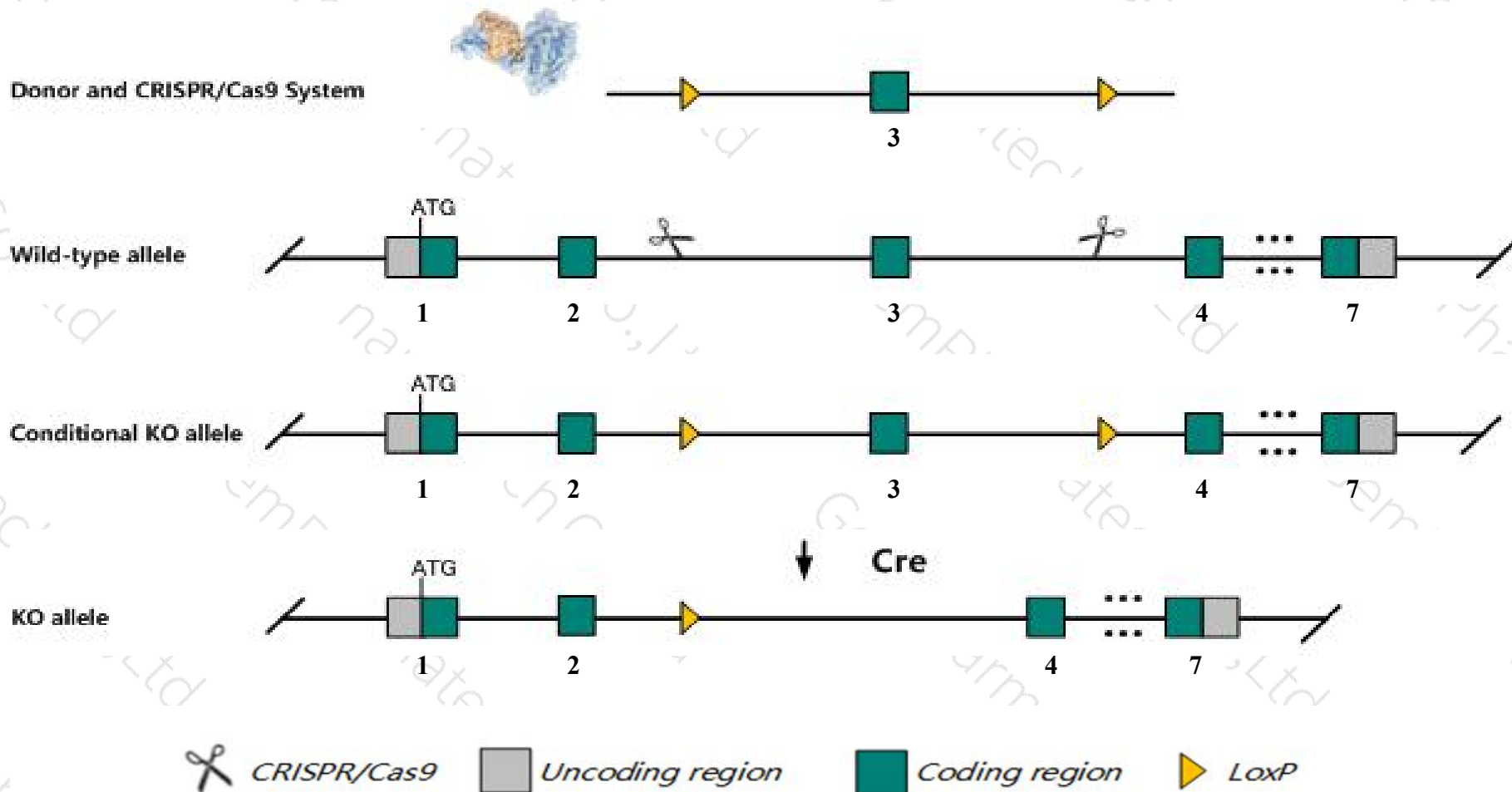
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rsph14* gene. The schematic diagram is as follows:



- The *Rsph14* gene has 7 transcripts. According to the structure of *Rsph14* gene, exon3 of *Rsph14-206* (ENSMUST00000166088.7) transcript is recommended as the knockout region. The region contains 103bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rsph14* 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 *Rsph14* gene is located on the Chr10. 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)

Rsph14 radial spoke head homolog 14 (Chlamydomonas) [*Mus musculus* (house mouse)]

Gene ID: 71236, updated on 12-Aug-2019

Summary

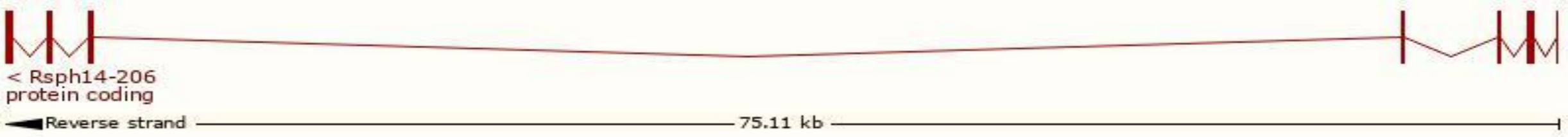
Official Symbol	Rsph14 provided by MGI
Official Full Name	radial spoke head homolog 14 (Chlamydomonas) provided by MGI
Primary source	MGI:MGI:1918486
See related	Ensembl:ENSMUSG000000009070
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Rtdr1; 4933431K05Rik
Expression	Biased expression in testis adult (RPKM 5.7), ovary adult (RPKM 0.8) and 1 other tissue See more
Orthologs	human all

Transcript information (Ensembl)

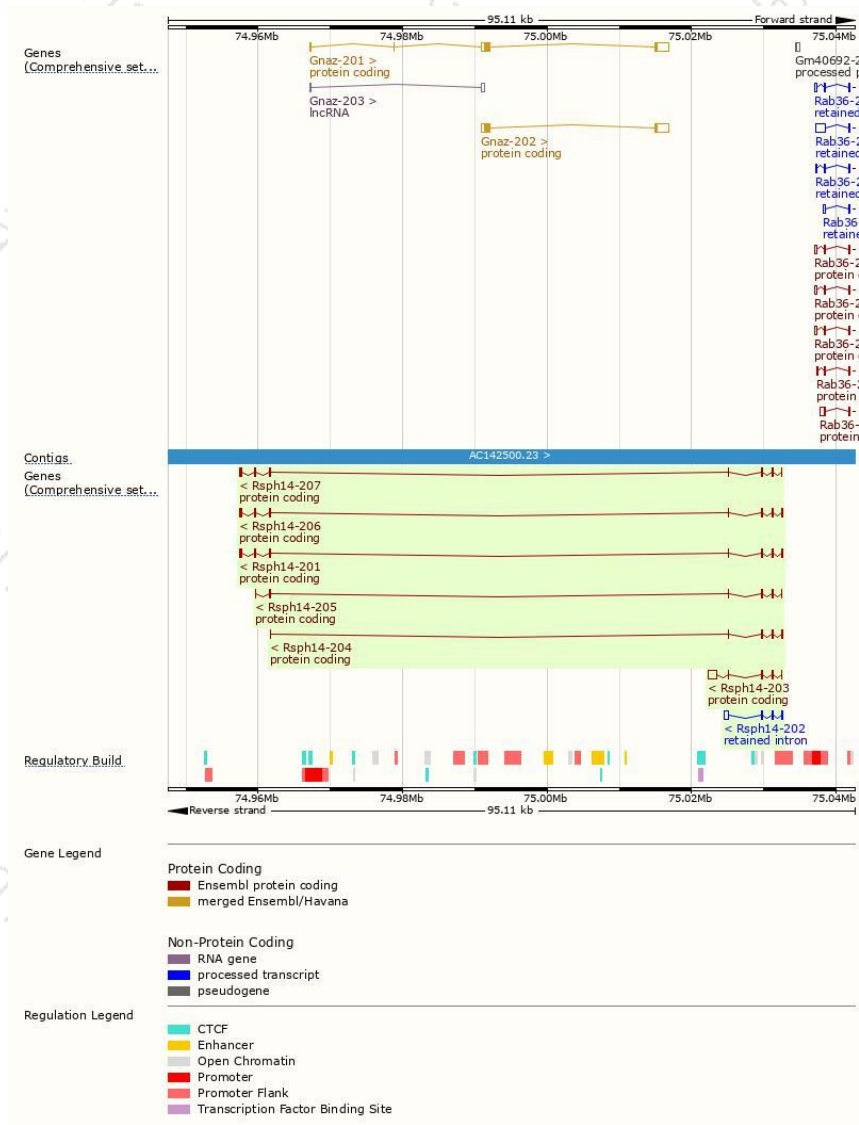
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rsph14-206	ENSMUST00000166088.7	1203	374aa	Protein coding	CCDS48597	E9PWZ8	TSL:5 GENCODE basic APPRIS P4
Rsph14-207	ENSMUST00000179546.7	1190	341aa	Protein coding	CCDS48596	Q9D3W1	TSL:1 GENCODE basic APPRIS ALT2
Rsph14-201	ENSMUST00000009214.9	1179	341aa	Protein coding	CCDS48596	Q9D3W1	TSL:1 GENCODE basic APPRIS ALT2
Rsph14-203	ENSMUST00000159994.1	1728	154aa	Protein coding	-	E9Q6E1	TSL:5 GENCODE basic
Rsph14-205	ENSMUST00000160450.7	779	226aa	Protein coding	-	E0CXH7	CDS 3' incomplete TSL:5
Rsph14-204	ENSMUST00000160072.7	571	161aa	Protein coding	-	E0CYZ0	CDS 3' incomplete TSL:3
Rsph14-202	ENSMUST00000159761.1	1063	No protein	Retained intron	-	-	TSL:2

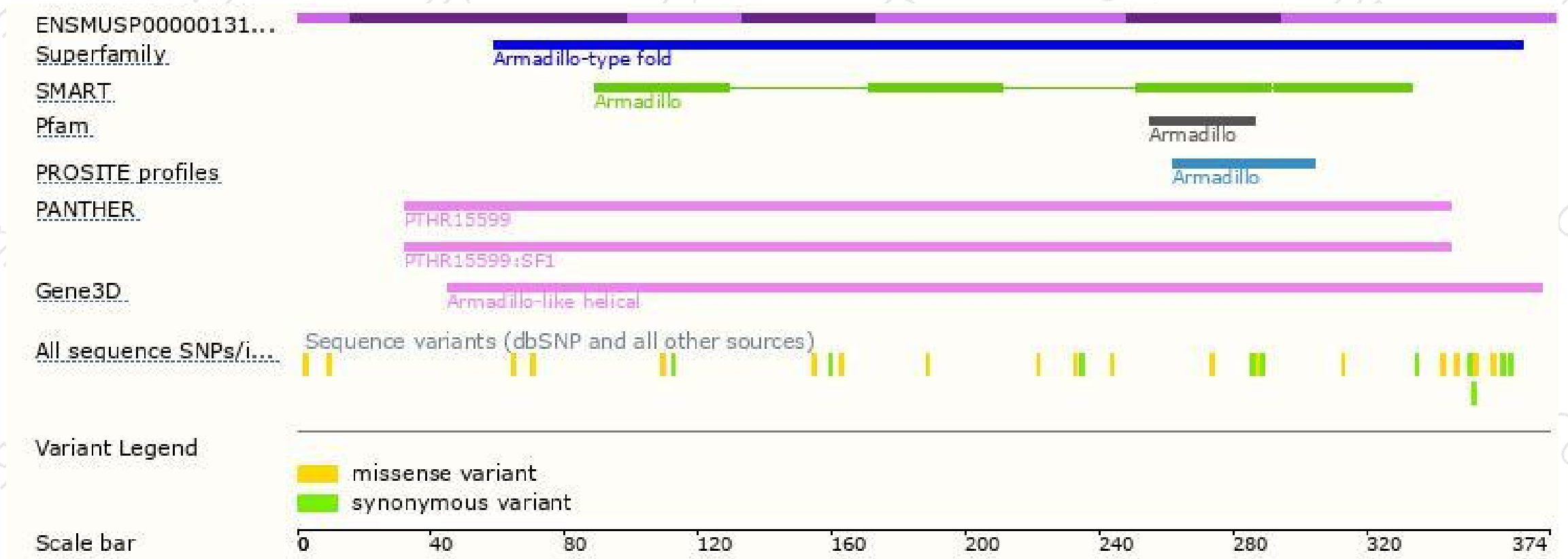
The strategy is based on the design of *Rsph14-206* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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