

Arhgef37 Cas9-KO Strategy

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Project Overview

Project Name

Arhgef37

Project type

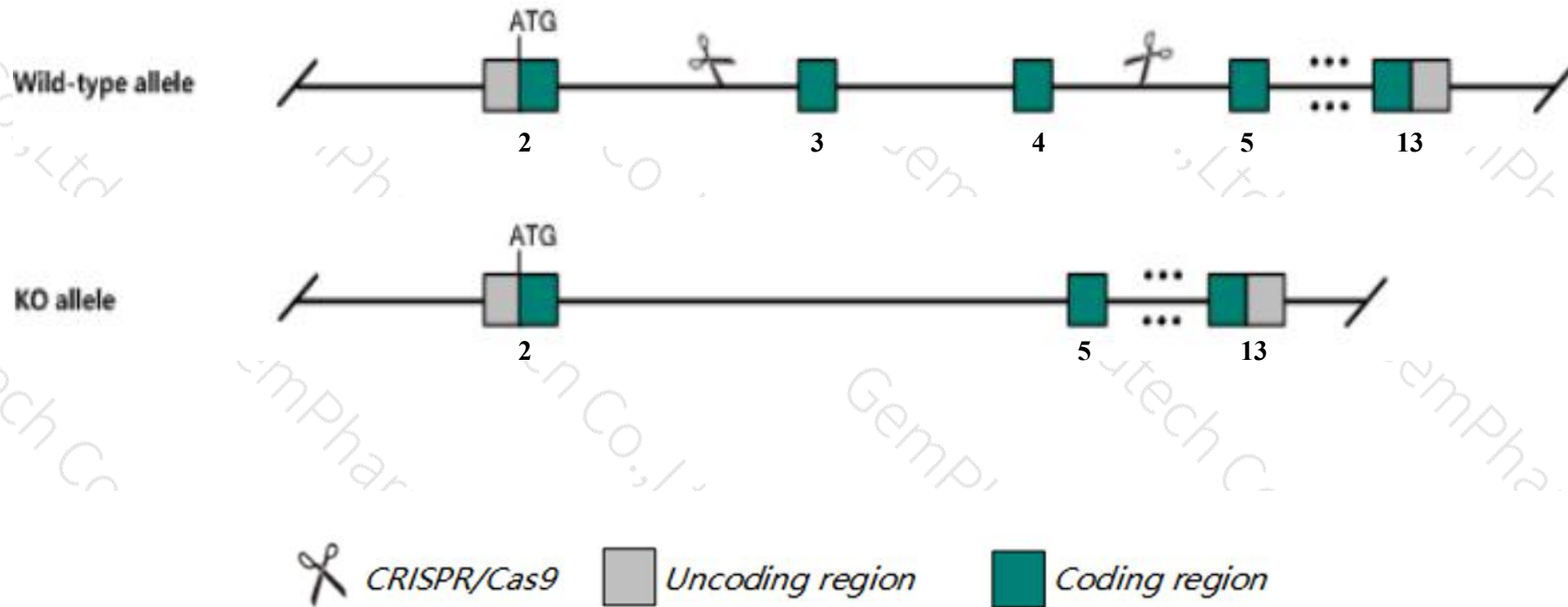
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Arhgef37* gene. The schematic diagram is as follows:



- The *Arhgef37* gene has 3 transcripts. According to the structure of *Arhgef37* gene, exon3-exon4 of *Arhgef37*-201(ENSMUST00000171629.2) transcript is recommended as the knockout region. The region contains 272bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Arhgef37* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Arhgef37* gene is located on the Chr18. 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 gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Arhgef37 Rho guanine nucleotide exchange factor (GEF) 37 [Mus musculus (house mouse)]

Gene ID: 328967, updated on 13-Mar-2020

Summary



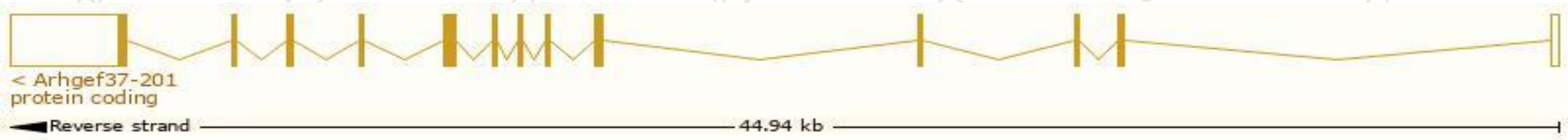
Official Symbol	Arhgef37 provided by MGI
Official Full Name	Rho guanine nucleotide exchange factor (GEF) 37 provided by MGI
Primary source	MGI:MGI:3045339
See related	Ensembl:ENSMUSG00000045094
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4933429F08Rik
Expression	Broad expression in cerebellum adult (RPKM 2.5), genital fat pad adult (RPKM 2.3) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

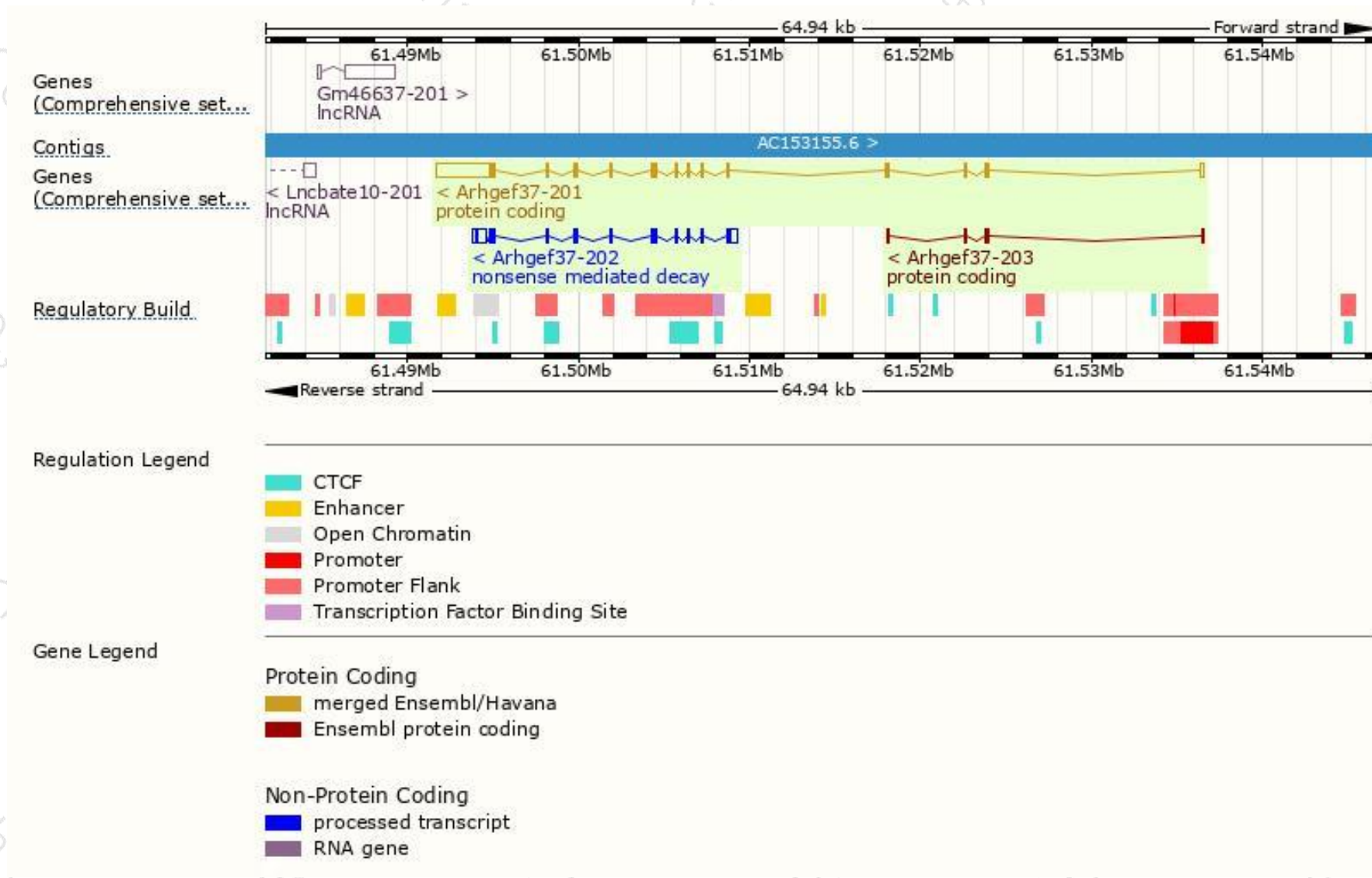
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Arhgef37-201	ENSMUST00000171629.2	5429	676aa	Protein coding	CCDS50302	E9Q5R6	TSL:5 GENCODE basic APPRIS P1
Arhgef37-203	ENSMUST00000237557.1	530	135aa	Protein coding	-	A0A494BAB2	CDS 3' incomplete
Arhgef37-202	ENSMUST00000236608.1	2661	536aa	Nonsense mediated decay	-	A1IGU4	

The strategy is based on the design of *Arhgef37-201* transcript,the transcription is shown below:



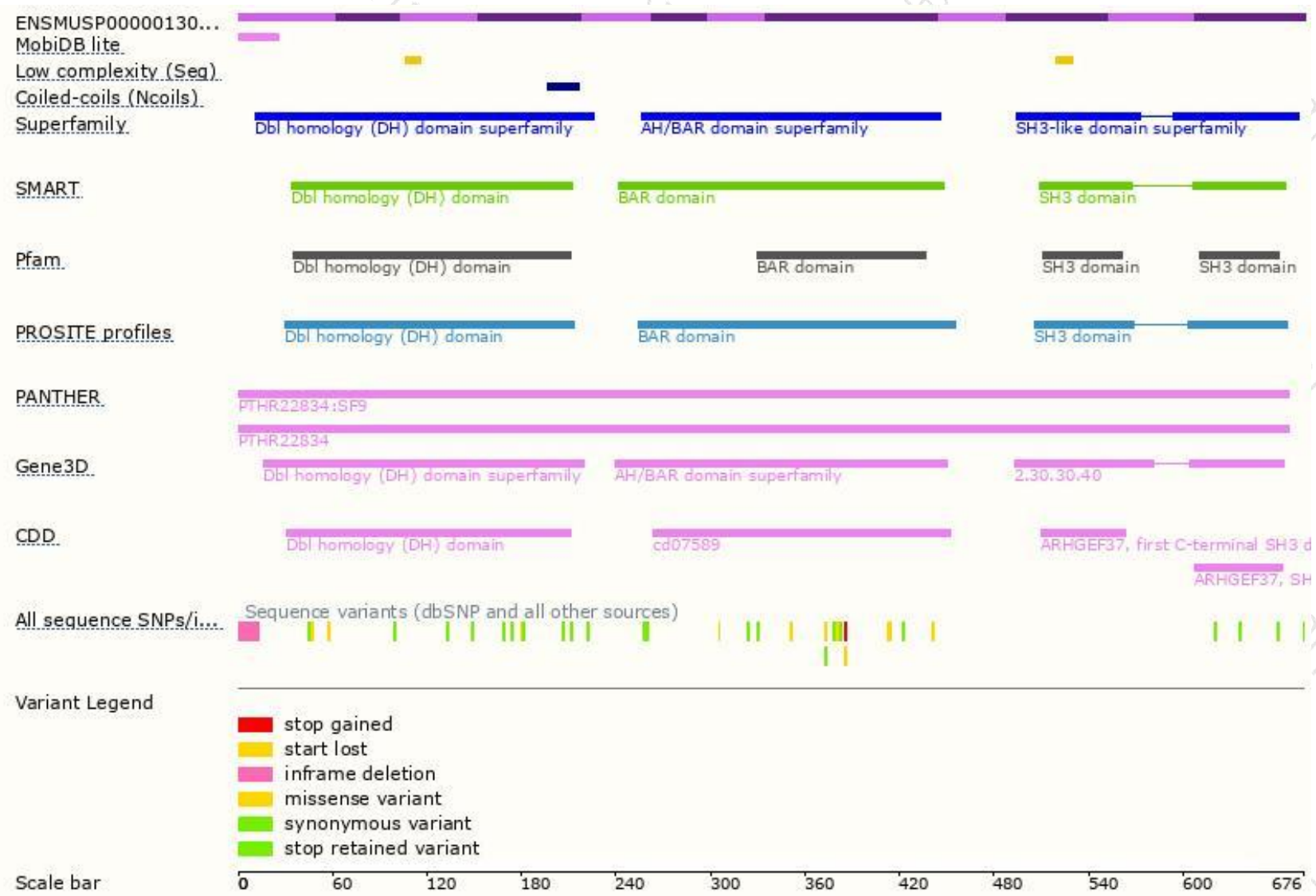
Genomic location distribution



Protein domain



集萃药康
GemPharmatech



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

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