

Sh3rf1 Cas9-KO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Sh3rf1

Project type

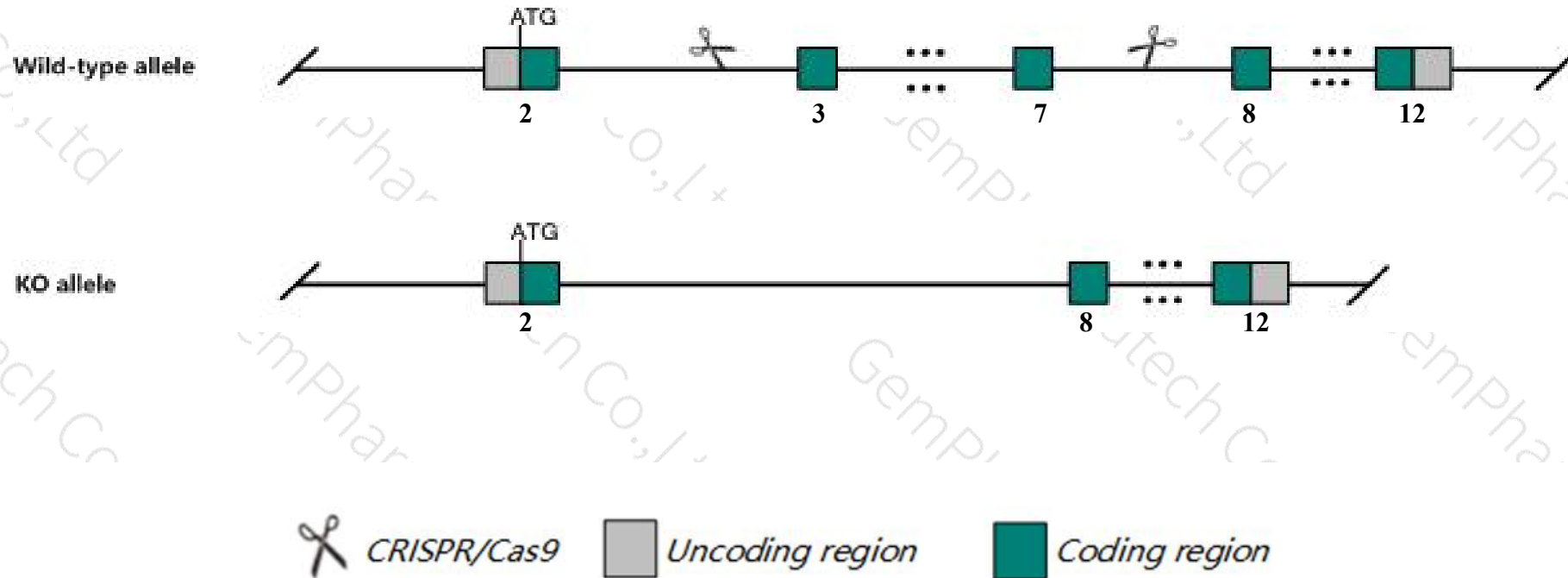
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Sh3rf1* gene. The schematic diagram is as follows:



- The *Sh3rf1* gene has 3 transcripts. According to the structure of *Sh3rf1* gene, exon3-exon7 of *Sh3rf1-201* (ENSMUST00000034060.6) transcript is recommended as the knockout region. The region contains 971bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Sh3rf1* gene. The brief process is as follows: CRISPR/Cas9 system v

- The *Sh3rf1* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Sh3rf1 SH3 domain containing ring finger 1 [*Mus musculus* (house mouse)]

Gene ID: 59009, updated on 12-Aug-2019

Summary

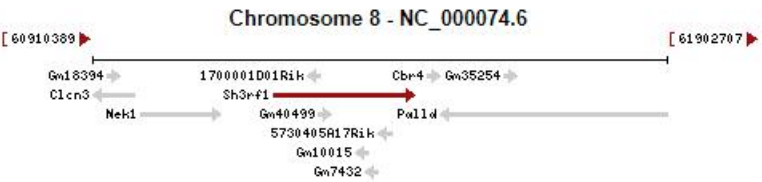
- Official Symbol** Sh3rf1 provided by [MGI](#)
- Official Full Name** SH3 domain containing ring finger 1 provided by [MGI](#)
- Primary source** [MGI:MGI:1913066](#)
- See related** [Ensembl:ENSMUSG00000031642](#)
- Gene type** protein coding
- RefSeq status** VALIDATED
- Organism** [Mus musculus](#)
- Lineage** Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
- Also known as** Posh; R75531; Sh3md2; 2200003J05Rik
- Expression** Ubiquitous expression in whole brain E14.5 (RPKM 9.0), lung adult (RPKM 8.7) and 27 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 8; 8 B3.1 [See Sh3rf1 in Genome Data Viewer](#)

Exon count: 13

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	8	NC_000074.6 (61224083..61465293)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	8	NC_000074.5 (63702968..63874869)

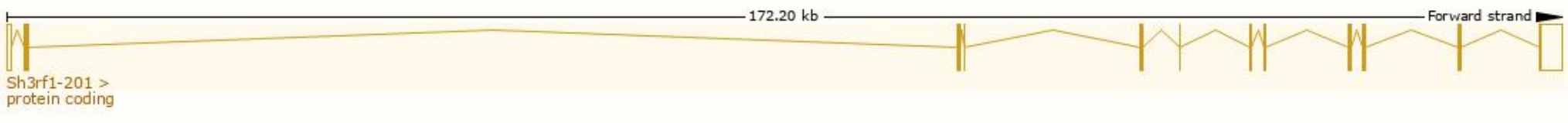


Transcript information (Ensembl)

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

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Sh3rf1-201	ENSMUST00000034060.6	5479	891aa	Protein coding	CCDS40348	E9QQ33	TSL:1 GENCODE basic APPRIS P1
Sh3rf1-202	ENSMUST00000209611.1	4416	836aa	Protein coding	-	A0A1B0GSY0	TSL:1 GENCODE basic
Sh3rf1-203	ENSMUST00000210210.1	590	No protein	Processed transcript	-	-	TSL:2

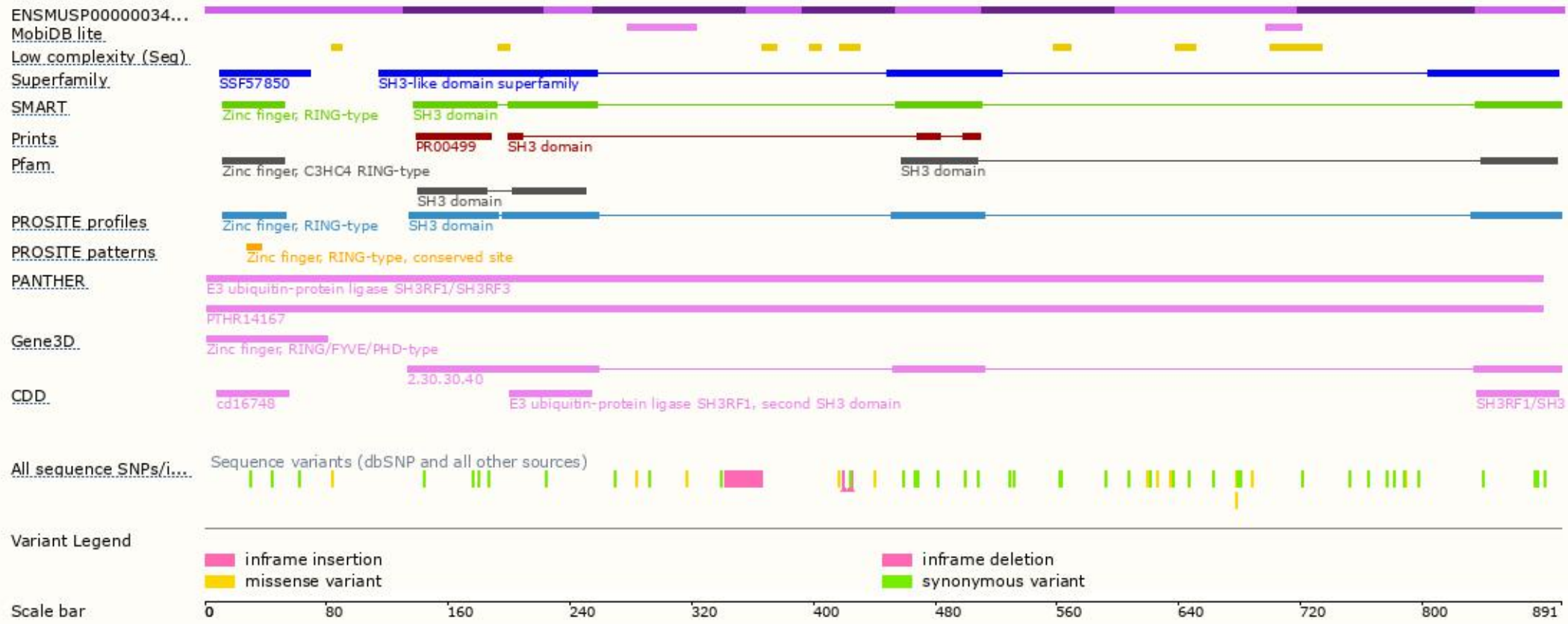
The strategy is based on the design of *Sh3rf1-201* transcript, the transcription is shown below:



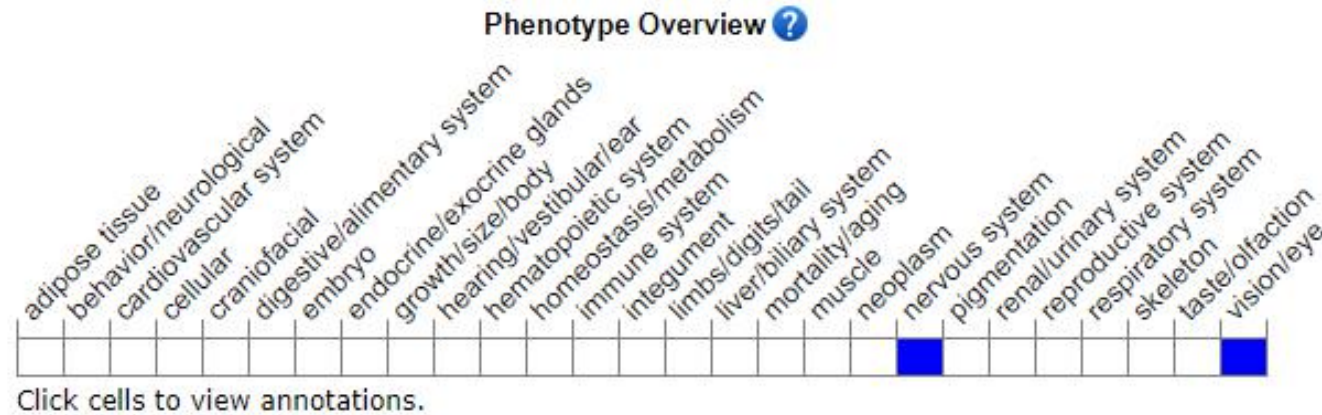
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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