

Tdrd9 Cas9-KO Strategy

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Project Overview



Project Name

Tdrd9

Project type

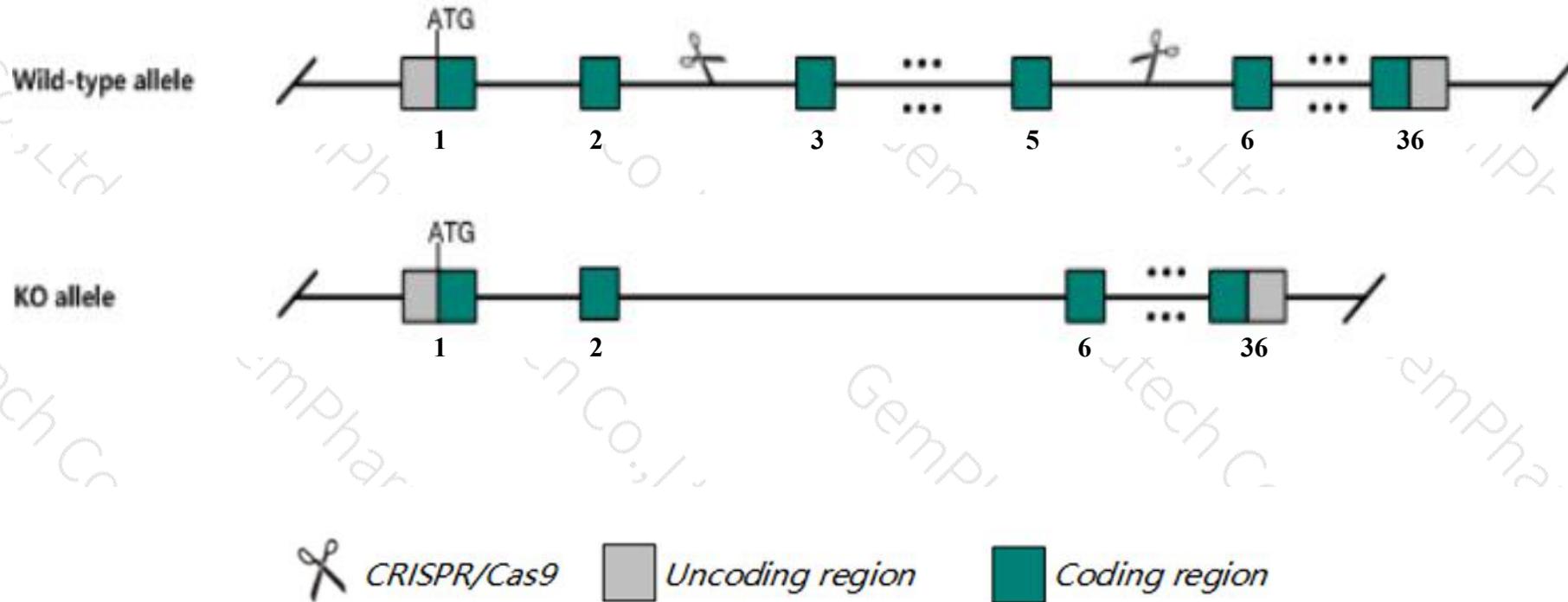
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tdrd9* gene. The schematic diagram is as follows:



- The *Tdrd9* gene has 6 transcripts. According to the structure of *Tdrd9* gene, exon3-exon5 of *Tdrd9-201* (ENSMUST00000079009.10) transcript is recommended as the knockout region. The region contains 443bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tdrd9* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Male homozygous mice are sterile, displaying small testis, arrest of male meiosis and abnormal spermatocyte morphology. Females are fertile.
- The *Tdrd9* gene is located on the Chr12. 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)

Tdrd9 tudor domain containing 9 [*Mus musculus* (house mouse)]

Gene ID: 74691, updated on 27-Feb-2020

Summary

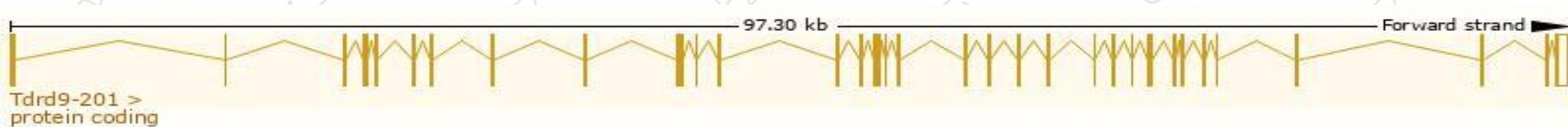
Official Symbol	Tdrd9 provided by MGI
Official Full Name	tudor domain containing 9 provided by MGI
Primary source	MGI:MGI:1921941
See related	Ensembl:ENSMUSG00000054003
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4930441E05Rik
Expression	Restricted expression toward testis adult (RPKM 20.7) See more
Orthologs	human all

Transcript information (Ensembl)

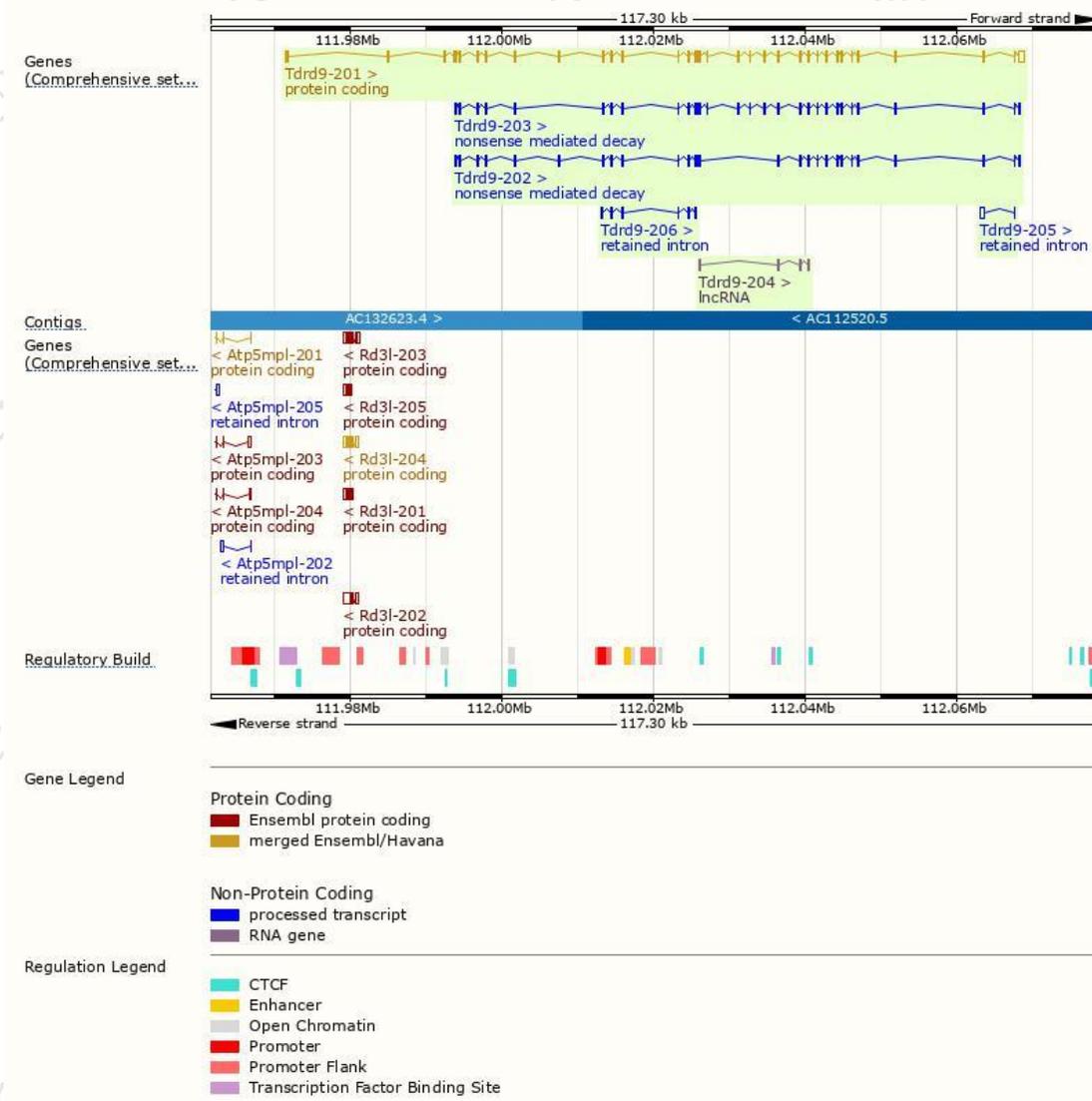
The gene has 6 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tdrd9-201	ENSMUST00000079009.10	4809	1383aa	Protein coding	CCDS49184	Q14BI7	TSL:1 GENCODE basic APPRIS P1
Tdrd9-203	ENSMUST00000192125.5	3681	217aa	Nonsense mediated decay	-	A0A0A6YY15	CDS 5' incomplete TSL:1
Tdrd9-202	ENSMUST00000191808.5	3366	540aa	Nonsense mediated decay	-	A0A0A6YWV8	CDS 5' incomplete TSL:1
Tdrd9-206	ENSMUST00000194800.1	799	No protein	Retained intron	-	-	TSL:3
Tdrd9-205	ENSMUST00000193630.1	484	No protein	Retained intron	-	-	TSL:5
Tdrd9-204	ENSMUST00000193586.1	456	No protein	lncRNA	-	-	TSL:3

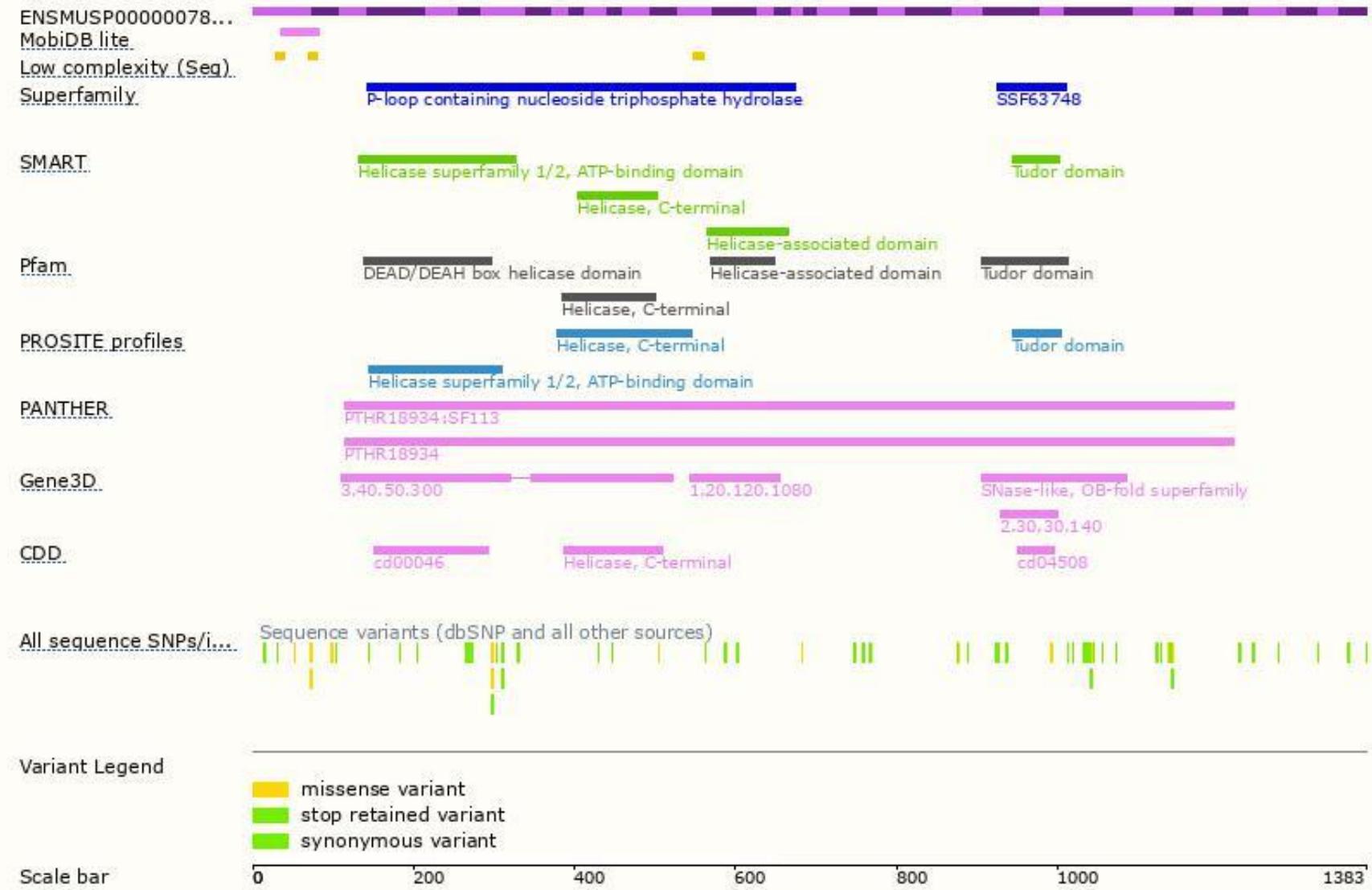
The strategy is based on the design of *Tdrd9-201* transcript, The transcription is shown below



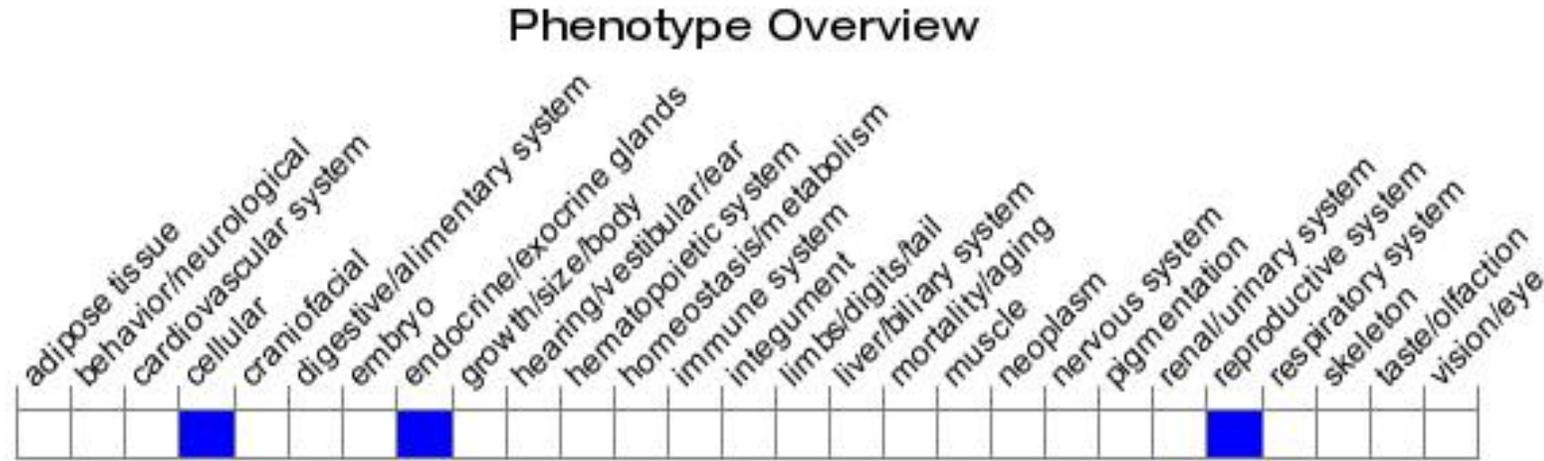
Genomic location distribution



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/>).

According to the existing MGI data, Male homozygous mice are sterile, displaying small testis, arrest of male meiosis and abnormal spermatocyte morphology. Females are fertile.

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

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