

Dda1 Cas9-KO Strategy

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Project Overview



Project Name

Dda1

Project type

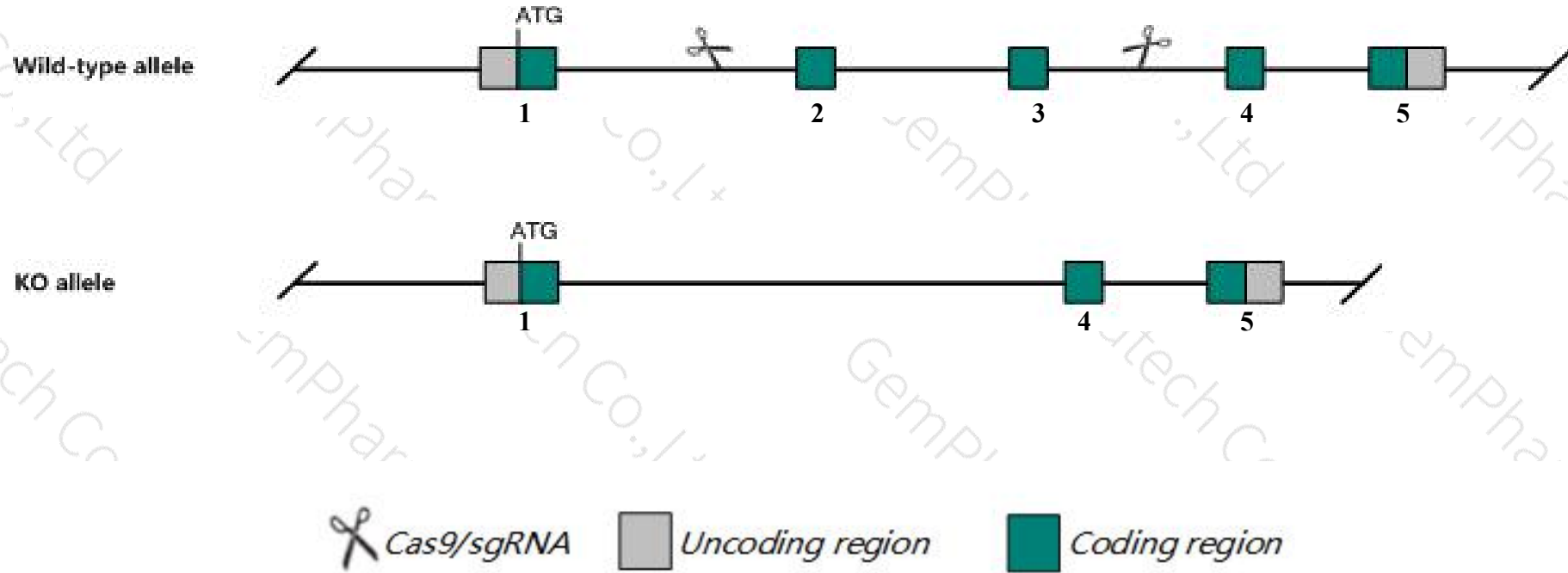
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

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



- The *Ddal* gene has 11 transcripts. According to the structure of *Ddal* gene, exon2-exon3 of *Ddal*-202 (ENSMUST00000124745.7) transcript is recommended as the knockout region. The region contains 133bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ddal* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- The *Ddal* 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)

Dda1 DET1 and DDB1 associated 1 [Mus musculus (house mouse)]

Gene ID: 66498, updated on 31-Jan-2019

Summary



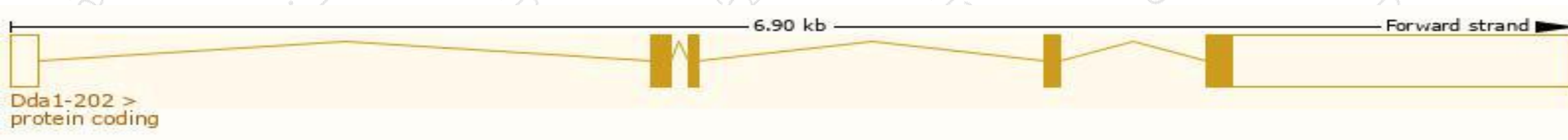
Official Symbol	Dda1 provided by MGI
Official Full Name	DET1 and DDB1 associated 1 provided by MGI
Primary source	MGI:MGI:1913748
See related	Ensembl:ENSMUSG00000074247
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1500034J01Rik, 1700095J19Rik, R74921
Expression	Ubiquitous expression in thymus adult (RPKM 57.3), adrenal adult (RPKM 55.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

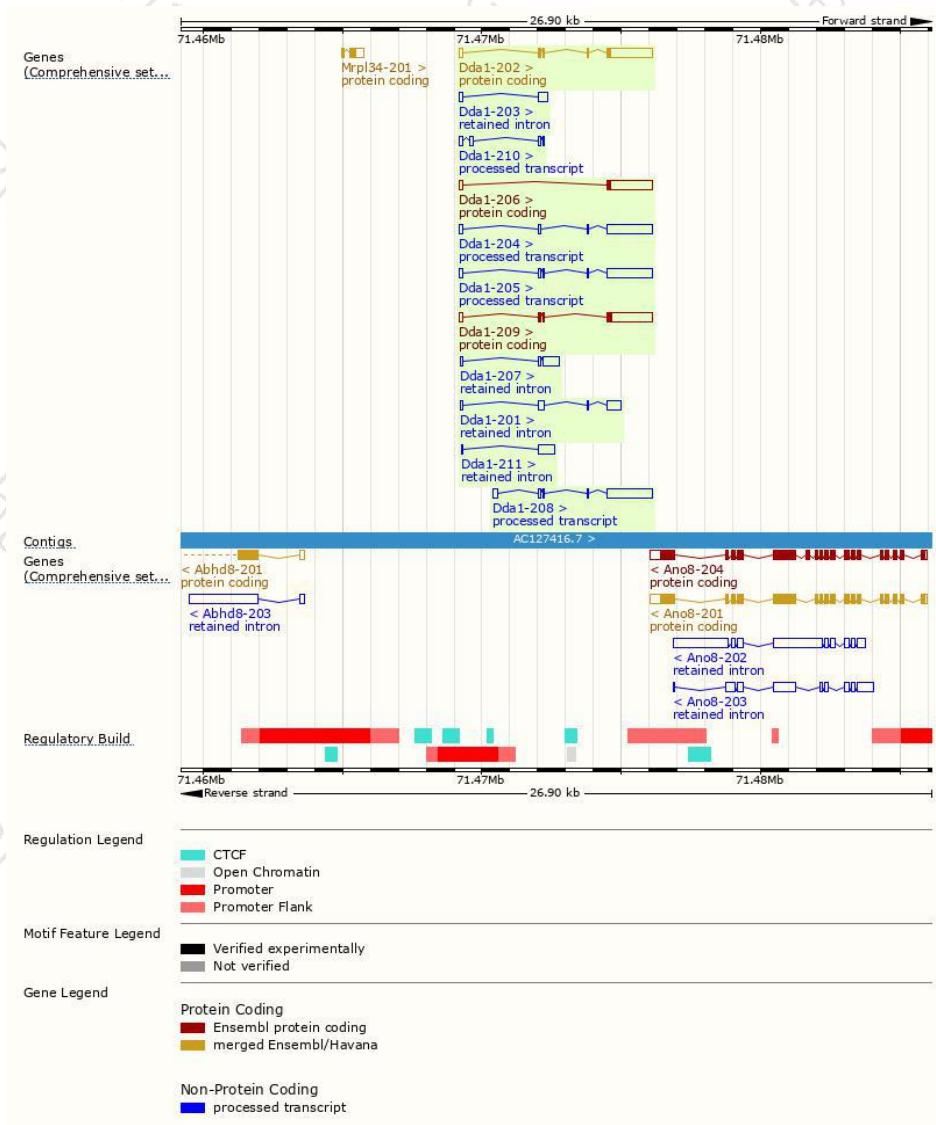
The gene has 11 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dda1-202	ENSMUST00000124745.7	1933	102aa	Protein coding	CCDS52584	Q9D9Z5	TSL:1 GENCODE basic APPRIS P1
Dda1-209	ENSMUST00000147642.1	1865	100aa	Protein coding	CCDS80894	D3YXY5	TSL:2 GENCODE basic
Dda1-206	ENSMUST00000138892.1	1738	37aa	Protein coding	-	D3Z6F8	TSL:3 GENCODE basic
Dda1-208	ENSMUST00000146677.1	1956	No protein	Processed transcript	-	-	TSL:1
Dda1-205	ENSMUST00000135052.7	1929	No protein	Processed transcript	-	-	TSL:1
Dda1-204	ENSMUST00000130098.7	1881	No protein	Processed transcript	-	-	TSL:1
Dda1-210	ENSMUST00000147843.7	410	No protein	Processed transcript	-	-	TSL:3
Dda1-201	ENSMUST00000098645.10	874	No protein	Retained intron	-	-	TSL:2
Dda1-207	ENSMUST00000139904.7	784	No protein	Retained intron	-	-	TSL:3
Dda1-211	ENSMUST00000150984.1	620	No protein	Retained intron	-	-	TSL:2
Dda1-203	ENSMUST00000127885.1	462	No protein	Retained intron	-	-	TSL:2

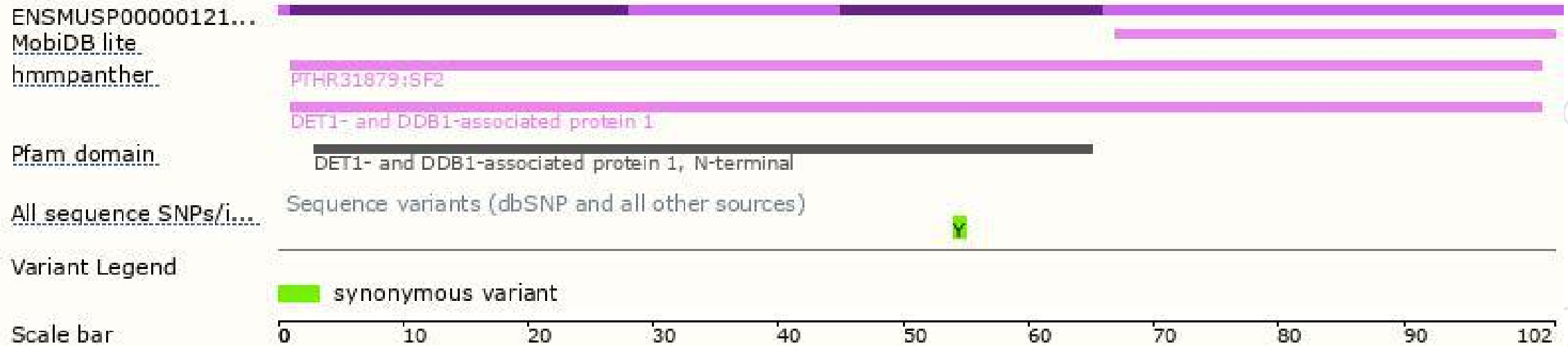
The strategy is based on the design of *Dda1-202* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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