

Aif1 Cas9-KO Strategy

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Project Overview

Project Name

Aif1l

Project type

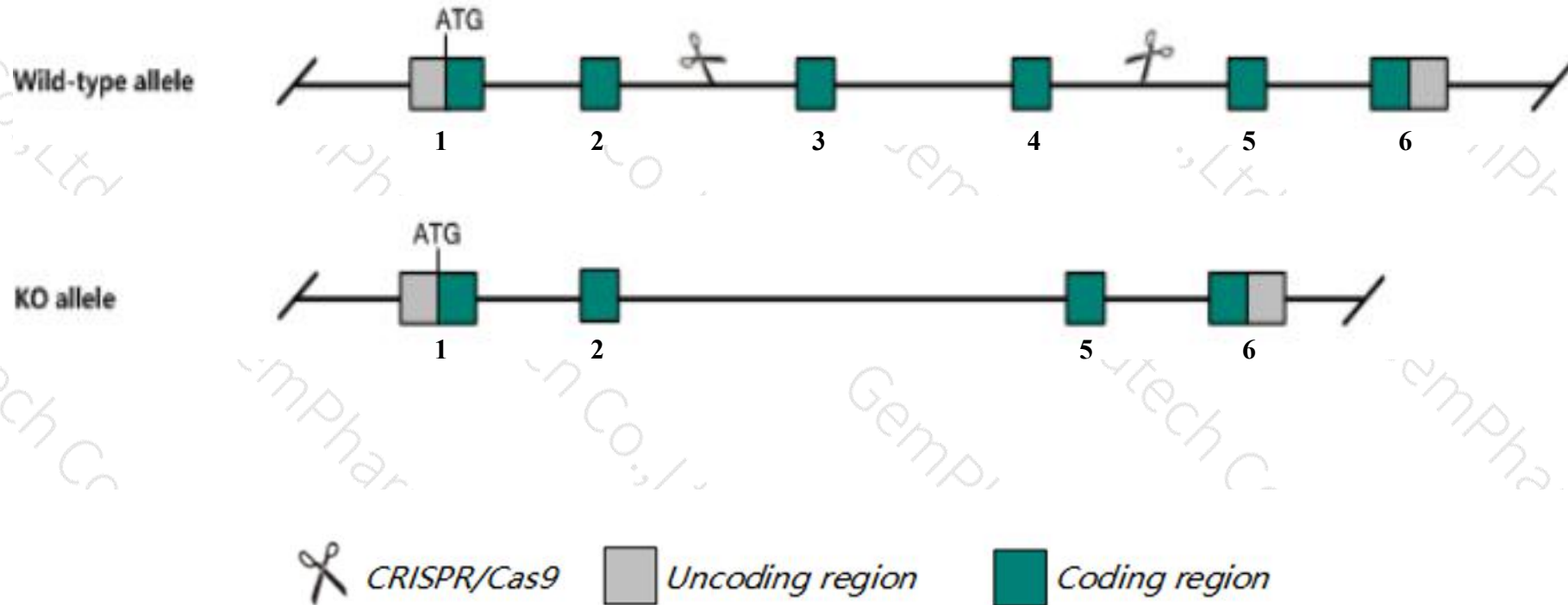
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Aif1l* gene. The schematic diagram is as follows:



- The *Aif1l* gene has 10 transcripts. According to the structure of *Aif1l* gene, exon3-exon4 of *Aif1l*-201(ENSMUST00000001920.12) transcript is recommended as the knockout region. The region contains 109bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Aif1l* 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 *Aif1l* gene is located on the Chr2. 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)

Aif1l allograft inflammatory factor 1-like [Mus musculus (house mouse)]

Gene ID: 108897, updated on 13-Mar-2020

Summary



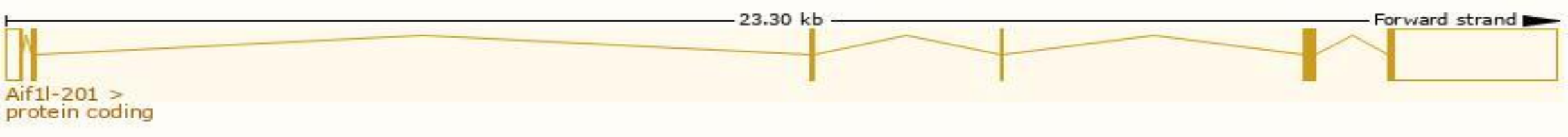
Official Symbol	Aif1l provided by MGI
Official Full Name	allograft inflammatory factor 1-like provided by MGI
Primary source	MGI:MGI:1919598
See related	Ensembl:ENSMUSG00000001864
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2810003C17Rik, AI043124, C87647, Iba2
Expression	Biased expression in kidney adult (RPKM 41.5), CNS E11.5 (RPKM 11.8) and 9 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

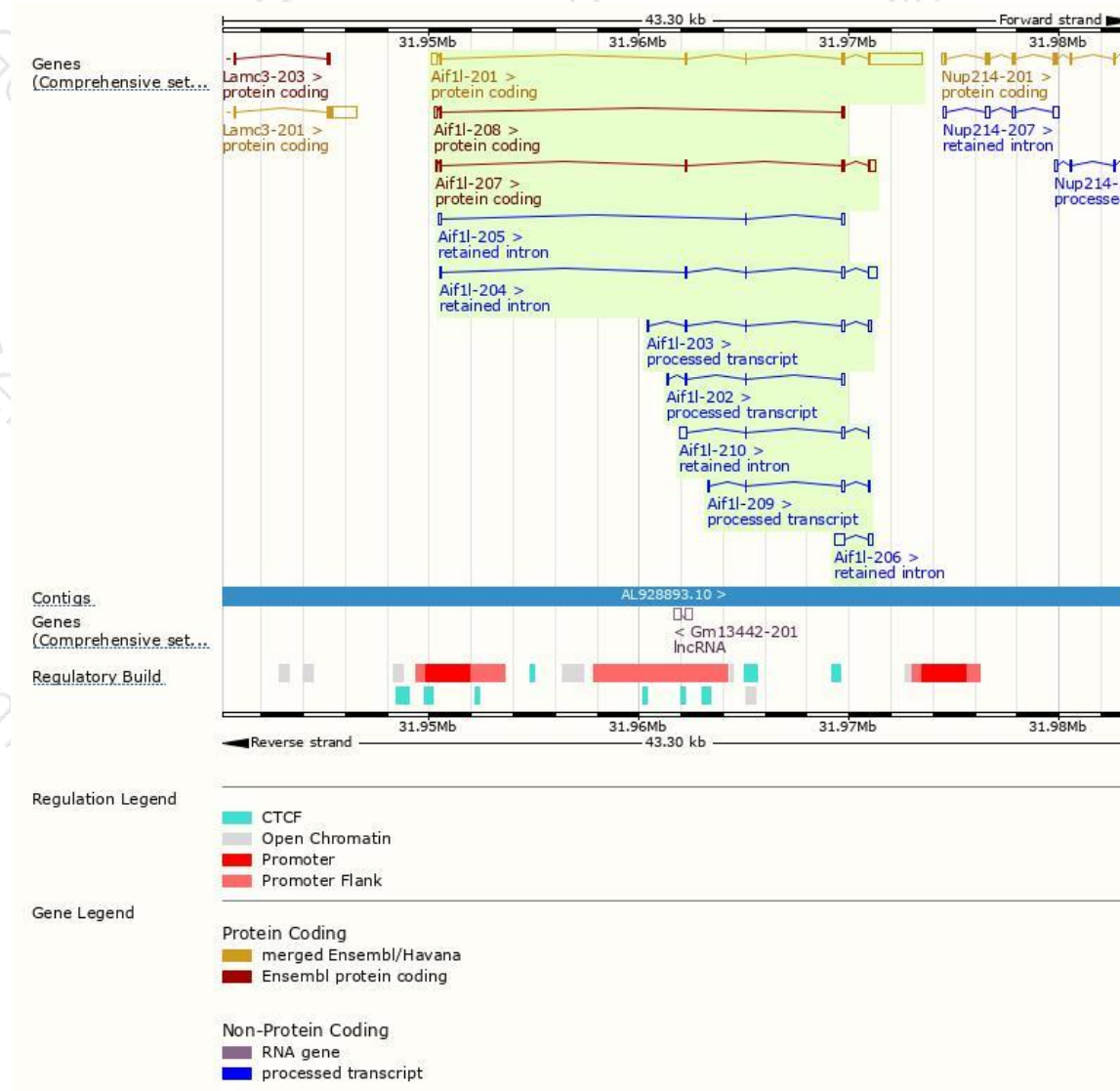
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Aif1l-201	ENSMUST00000001920.12	3117	150aa	Protein coding	CCDS15904	Q9EQX4	TSL:1 GENCODE basic APPRIS P1
Aif1l-207	ENSMUST00000148056.3	670	136aa	Protein coding	-	A0A0A6YWH2	TSL:5 GENCODE basic
Aif1l-208	ENSMUST00000151276.2	288	37aa	Protein coding	-	A0A0A6YW96	CDS 3' incomplete TSL:5
Aif1l-203	ENSMUST00000128271.7	519	No protein	Processed transcript	-	-	TSL:3
Aif1l-209	ENSMUST00000156564.1	382	No protein	Processed transcript	-	-	TSL:2
Aif1l-202	ENSMUST00000125457.7	260	No protein	Processed transcript	-	-	TSL:3
Aif1l-204	ENSMUST00000138833.7	782	No protein	Retained intron	-	-	TSL:2
Aif1l-206	ENSMUST00000145137.1	726	No protein	Retained intron	-	-	TSL:2
Aif1l-210	ENSMUST00000156743.7	614	No protein	Retained intron	-	-	TSL:2
Aif1l-205	ENSMUST00000140649.7	291	No protein	Retained intron	-	-	TSL:5

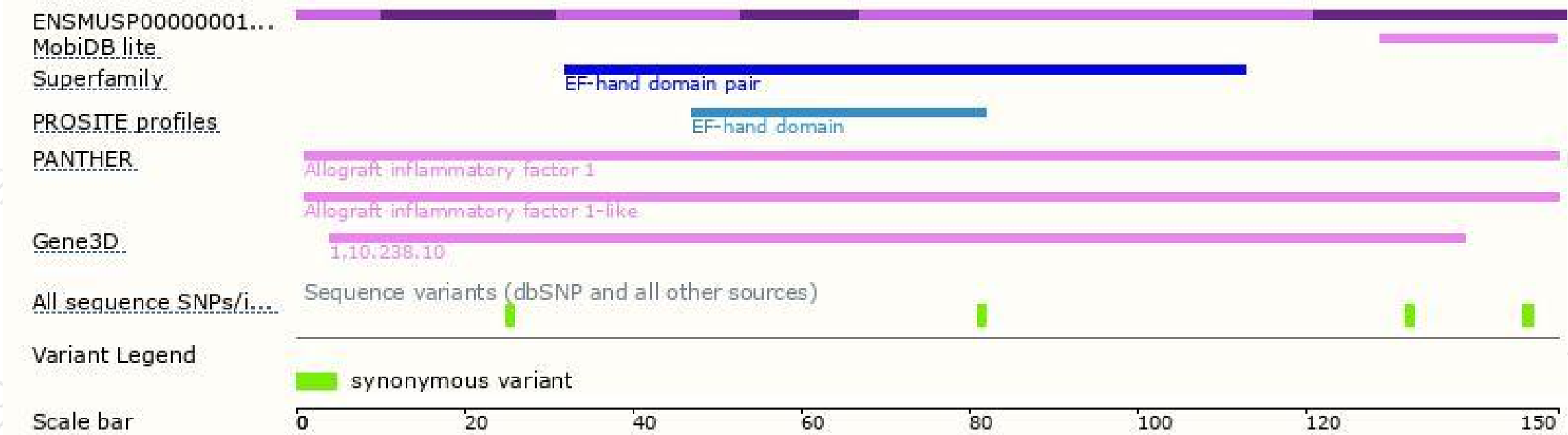
The strategy is based on the design of *Aif1l-201* transcript,the transcription is shown below:



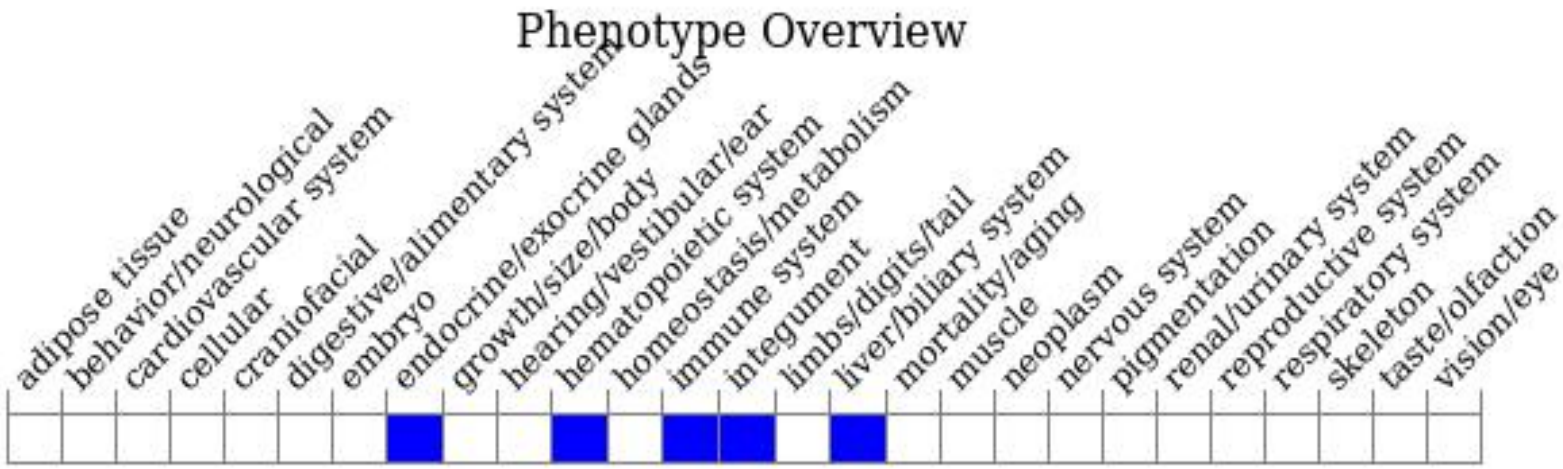
Genomic location distribution



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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