

Atg2b Cas9-CKO Strategy

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Project Overview

Project Name

Atg2b

Project type

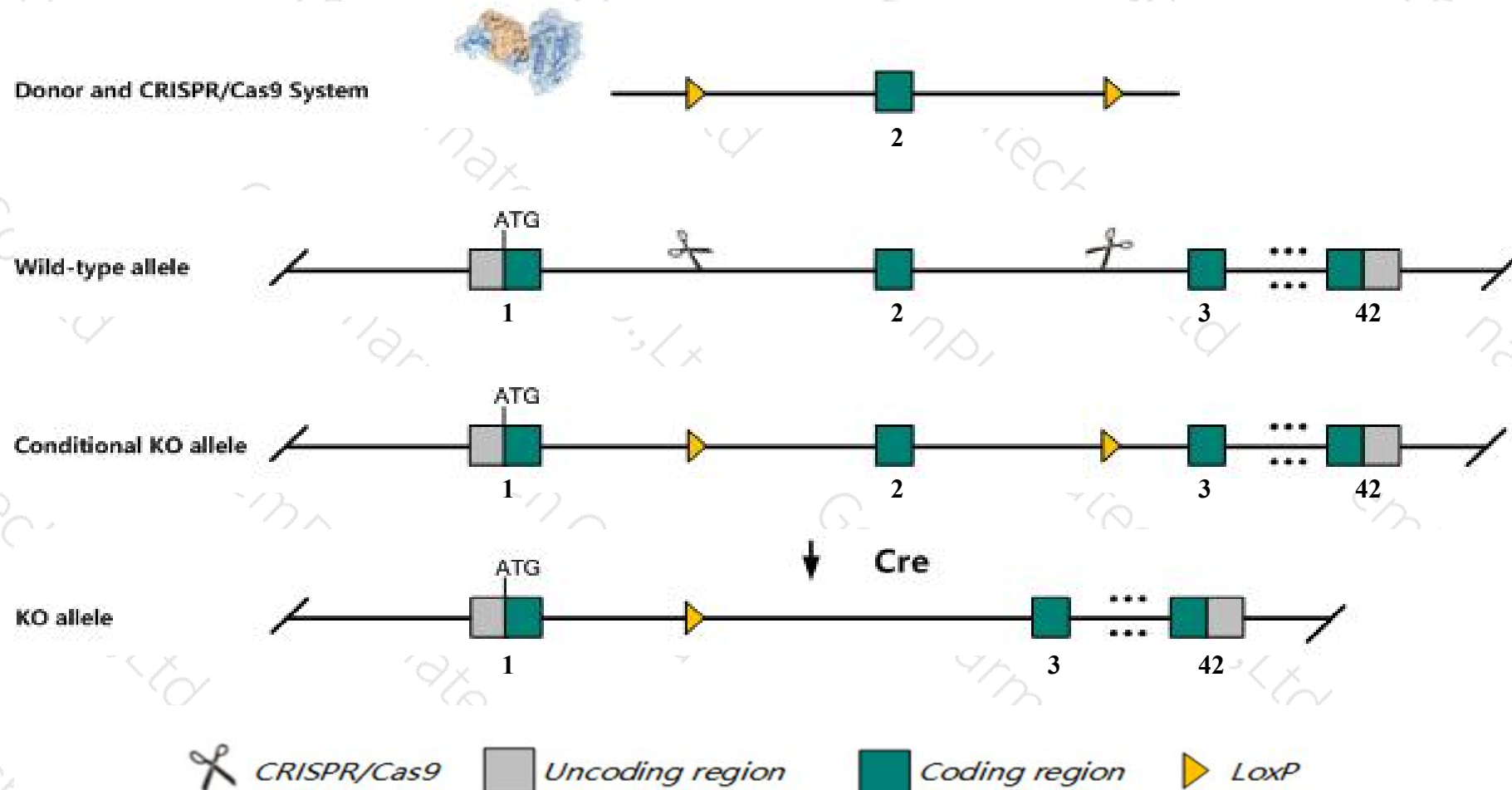
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atg2b* gene. The schematic diagram is as follows:



Technical routes

- The *Atg2b* gene has 5 transcripts. According to the structure of *Atg2b* gene, exon2 of *Atg2b-201* (ENSMUST00000041055.8) transcript is recommended as the knockout region. The region contains 163bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Atg2b* gene. The brief process is as follows: CRISPR/Cas9 system and Donor 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 flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Atg2b* 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.
- Transcript *Atg2b-203* not be affected.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Atg2b autophagy related 2B [Mus musculus (house mouse)]

Gene ID: 76559, updated on 5-Feb-2019

Summary



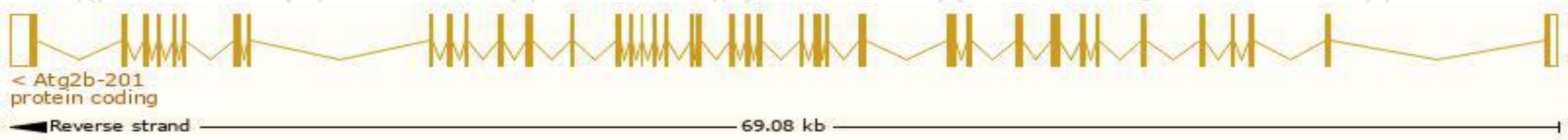
Official Symbol	Atg2b provided by MGI
Official Full Name	autophagy related 2B provided by MGI
Primary source	MGI:MGI:1923809
See related	Ensembl:ENSMUSG00000041341
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2410024A21Rik, AI047755, AI503411, AW558123, C030004M05Rik, C630028L02Rik, mKIAA4067
Expression	Ubiquitous expression in cerebellum adult (RPKM 6.2), testis adult (RPKM 5.5) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

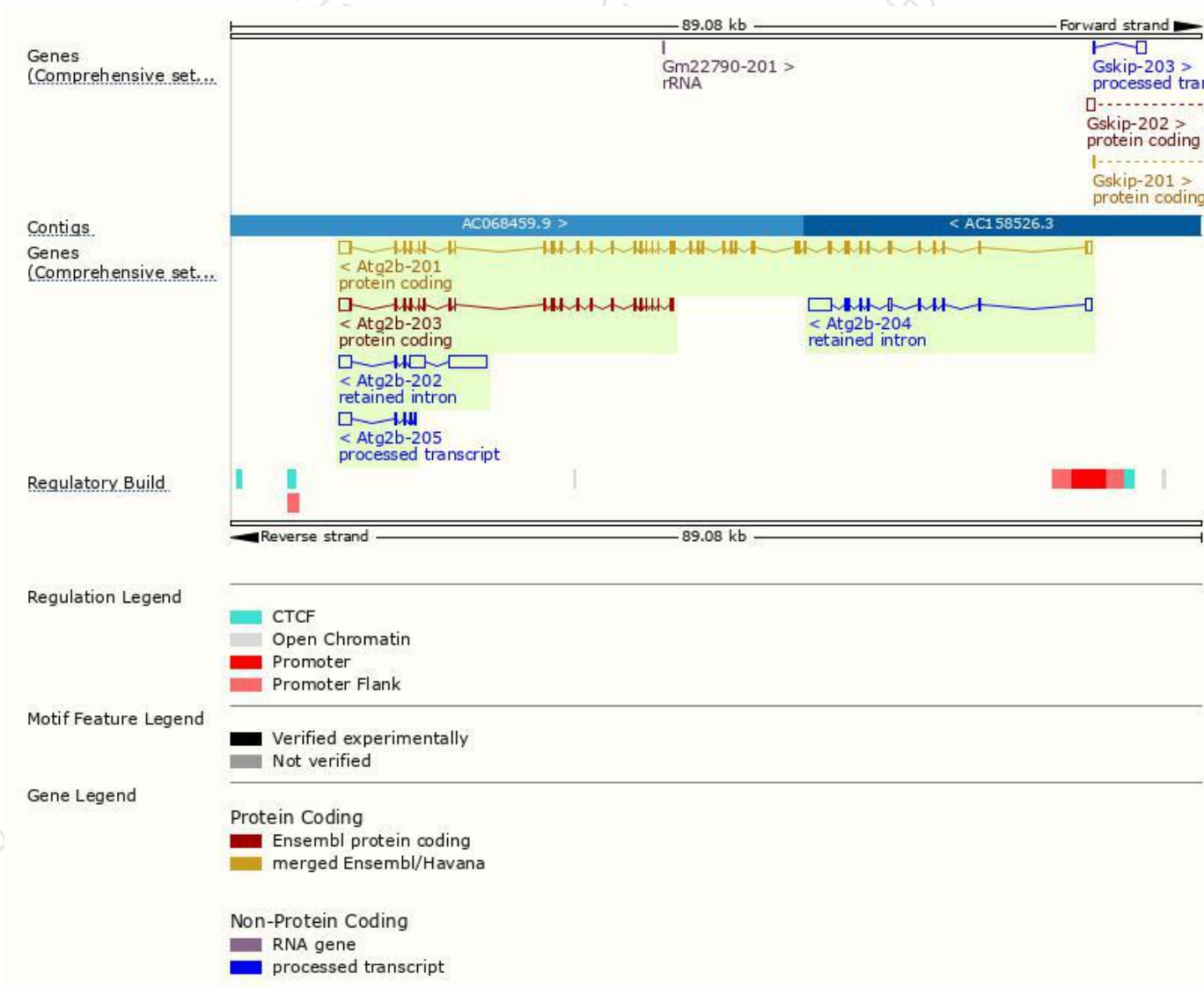
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atg2b-201	ENSMUST00000041055.8	7546	2075aa	Protein coding	CCDS36550	Q80XK6	TSL:1 GENCODE basic APPRIS P1
Atg2b-203	ENSMUST00000221015.1	3687	916aa	Protein coding	-	A0A1Y7VNP1	CDS 5' incomplete TSL:1
Atg2b-205	ENSMUST00000222395.1	1736	No protein	Processed transcript	-	-	TSL:1
Atg2b-202	ENSMUST00000220960.1	6201	No protein	Retained intron	-	-	TSL:1
Atg2b-204	ENSMUST00000221568.1	3833	No protein	Retained intron	-	-	TSL:1

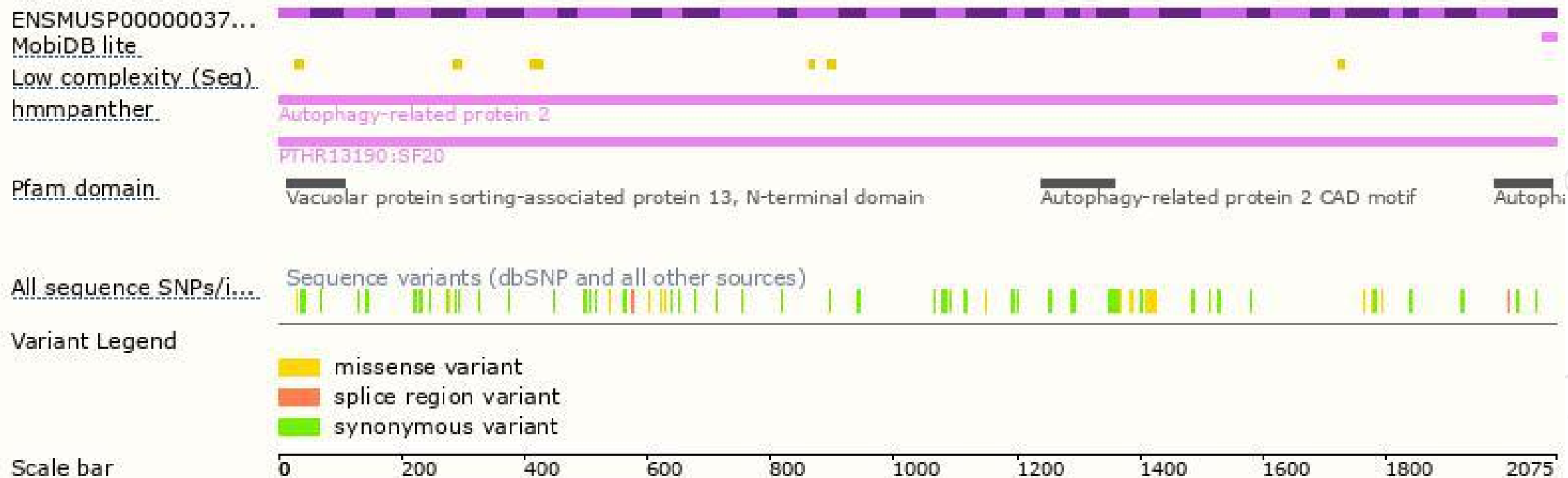
The strategy is based on the design of *Atg2b-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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