

Atg101 Cas9-CKO Strategy

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Project Overview

Project Name

Atg101

Project type

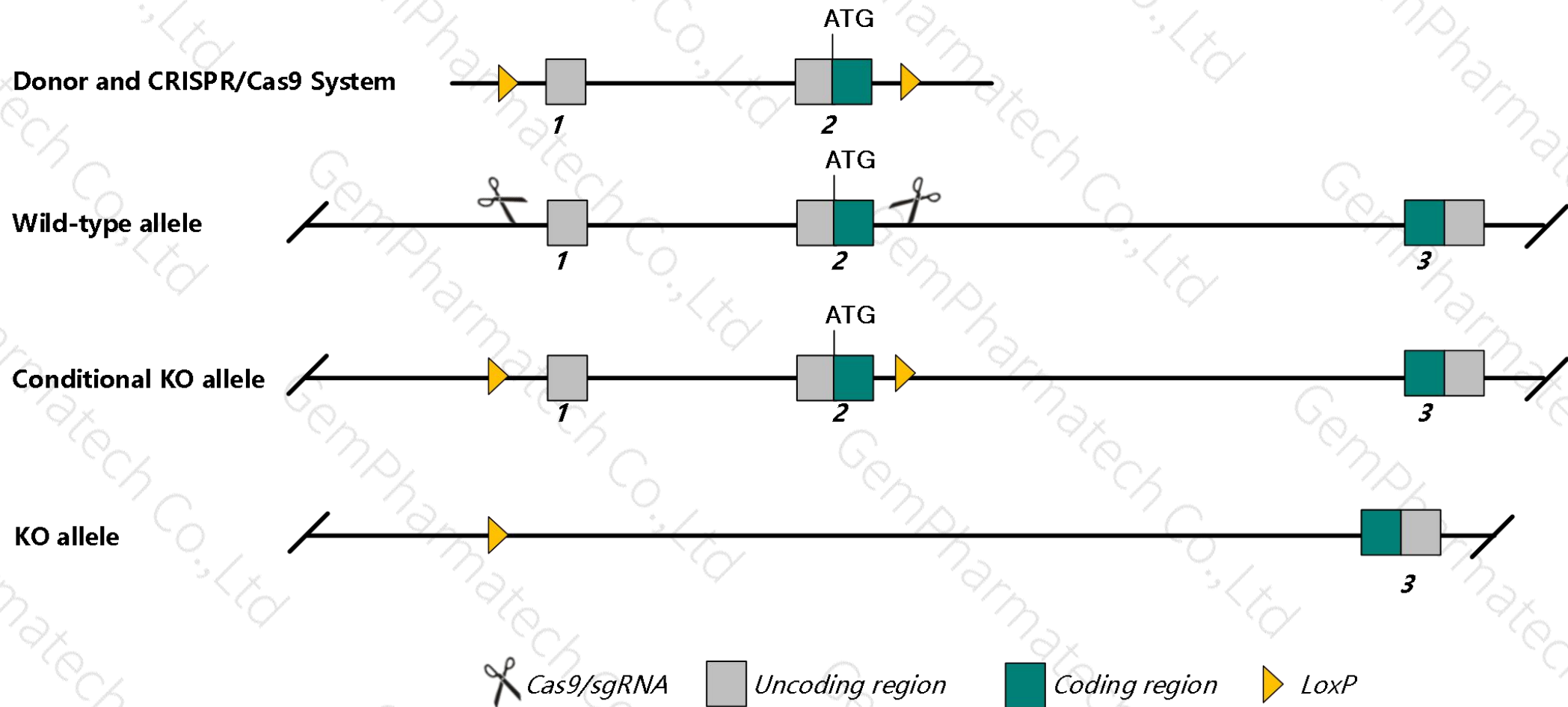
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atg101* gene. The schematic diagram is as follows:



- The *Atg101* gene has 3 transcripts. According to the structure of *Atg101* gene, exon1-exon2 of *Atg101-201* (ENSMUST00000048393.7) transcript is recommended as the knockout region. The region contains the start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Atg101* 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 *Atg101* gene is located on the Chr15. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Atg101 autophagy related 101 [*Mus musculus* (house mouse)]

Gene ID: 68118, updated on 13-Mar-2020

Summary



Official Symbol Atg101 provided by [MGI](#)

Official Full Name autophagy related 101 provided by [MGI](#)

Primary source [MGI:MGI:1915368](#)

See related [Ensembl:ENSMUSG00000037204](#)

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 AA407441; AU022967; 9430023L20Rik

Expression Ubiquitous expression in liver adult (RPKM 17.4), colon adult (RPKM 16.4) and 28 other tissues [See more](#)

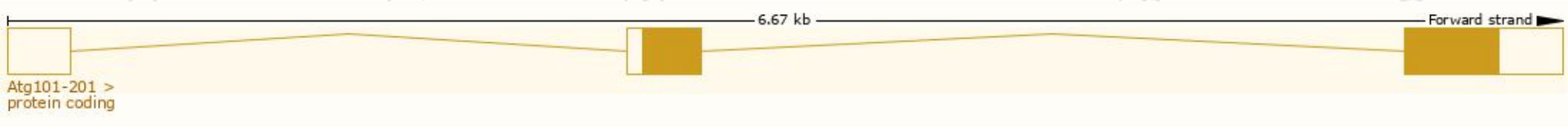
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

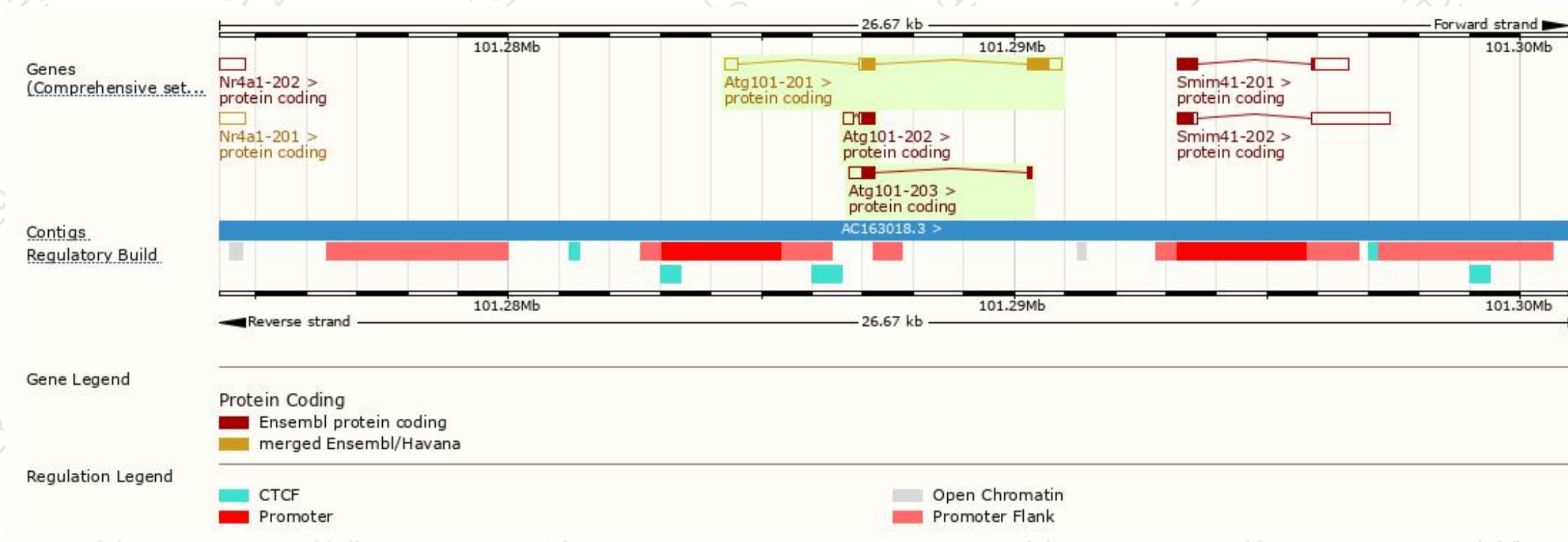
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atg101-201	ENSMUST00000048393.7	1270	218aa	Protein coding	CCDS27849	Q9D8Z6	TSL:1 GENCODE basic APPRIS P1
Atg101-203	ENSMUST00000230525.1	605	113aa	Protein coding	-	A0A2R8VJN5	CDS 3' incomplete
Atg101-202	ENSMUST00000229525.1	523	84aa	Protein coding	-	A0A2R8VH88	CDS 3' incomplete

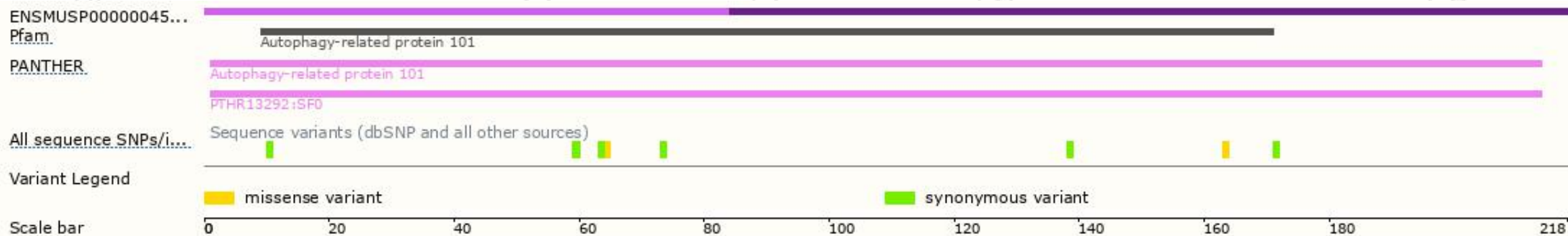
The strategy is based on the design of *Atg101-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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