Atg4a Cas9-KO Strategy

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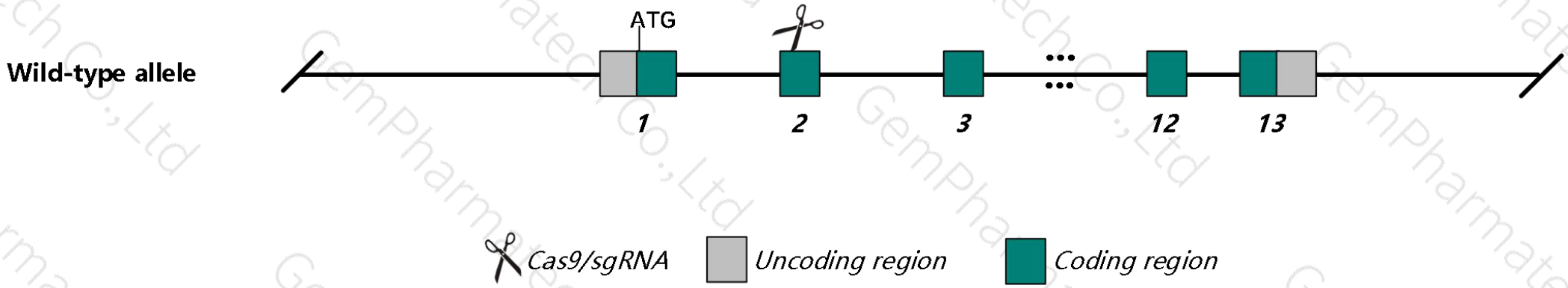
Project Overview

Project Name	***Atg4a***
Project type	**Cas9-KO**
Strain background	**C57BL/6N**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atg4a* gene. The schematic diagram is as follows:



Technical routes

- In this project we use CRISPR/Cas9 technology to modify *Atg4a* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6N 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/6N mice.

Notice

- The *Atg4a* gene is located on the ChrX. 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）

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Atg4a autophagy related 4A, cysteine peptidase [*Mus musculus* (house mouse)]

Gene ID: 666468, updated on 12-Aug-2019

Summary

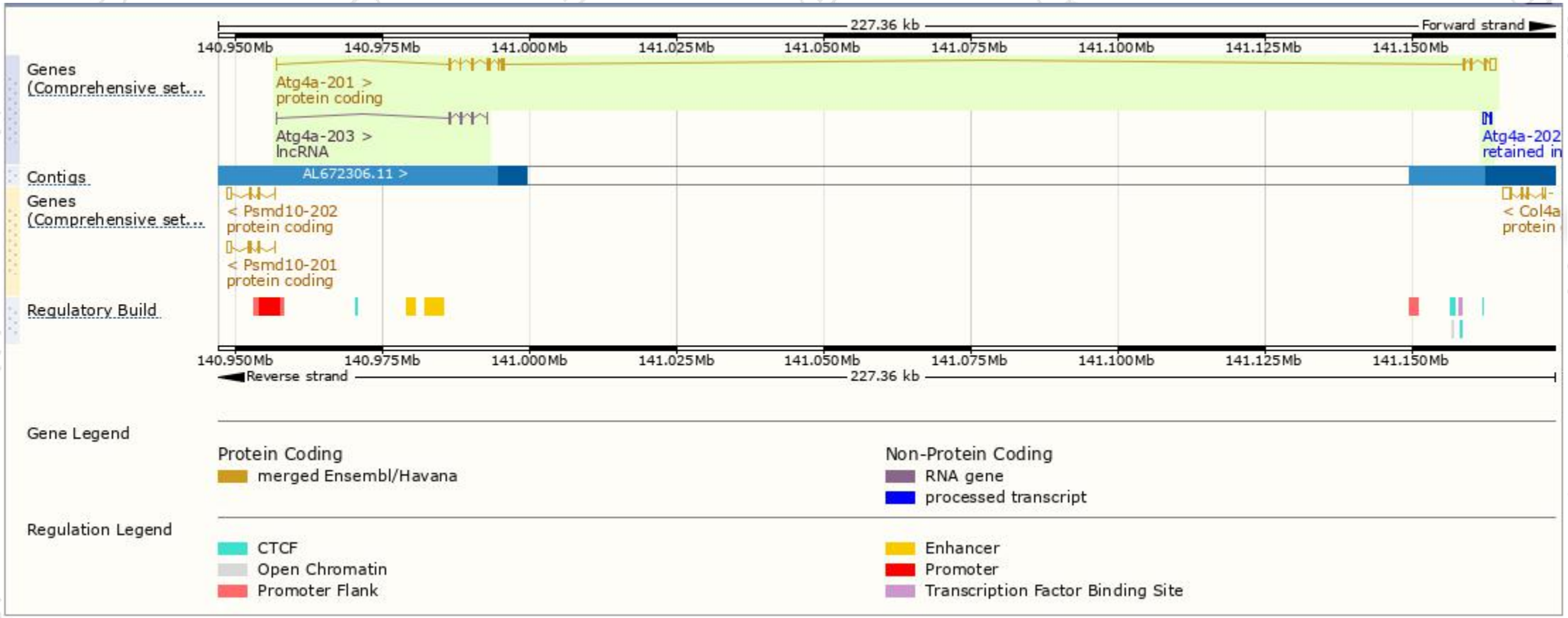
Official Symbol	Atg4a provided by MGI
Official Full Name	autophagy related 4A, cysteine peptidase provided by MGI
Primary source	MGI:MGI:2147903
See related	Ensembl:ENSMUSG00000079418
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Apg4a; Autl2; Atg4al; AI627006; AV169859
Annotation information	Annotation category: suggests misassembly
Expression	Broad expression in genital fat pad adult (RPKM 11.0), placenta adult (RPKM 5.0) and 20 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
Atg4a-201	ENSMUST00000112971.1	2202	396aa	Protein coding	CCDS85810	Q5EBK1 Q8C9S8	TSL:1 GENCODE basic APPRIS P1
Atg4a-202	ENSMUST00000147972.1	696	No protein	Retained intron	-	-	TSL:2
Atg4a-203	ENSMUST00000153742.1	340	No protein	lncRNA	-	-	TSL:5

Genomic location distribution



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

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