

***Lamtor3* Cas9-CKO Strategy**

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Reviewer:

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Project Overview

Project Name

Lamtor3

Project type

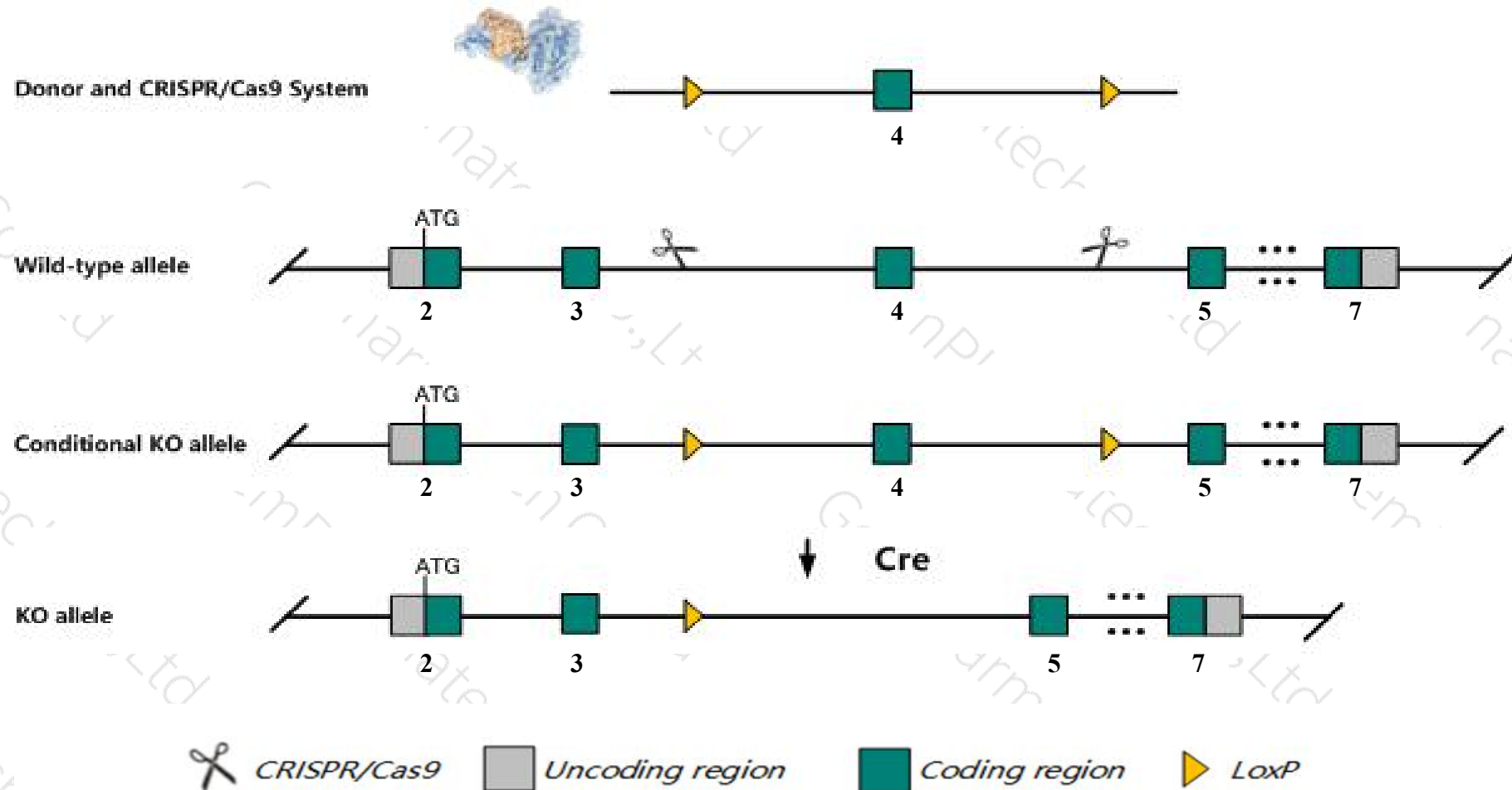
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lamtor3* gene. The schematic diagram is as follows:



- The *Lamtor3* gene has 8 transcripts. According to the structure of *Lamtor3* gene, exon4 of *Lamtor3-201* (ENSMUST00000168345.5) transcript is recommended as the knockout region. The region contains 59bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lamtor3* 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 *Lamtor3* gene is located on the Chr3. 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)

Lamtor3 late endosomal/lysosomal adaptor, MAPK and MTOR activator 3 [Mus musculus (house mouse)]

Gene ID: 56692, updated on 9-Apr-2019

Summary



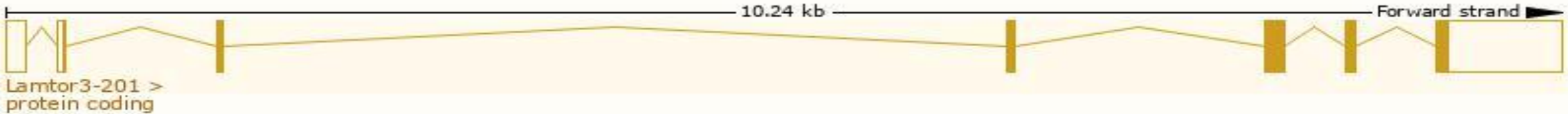
Official Symbol	Lamtor3 provided by MGI
Official Full Name	late endosomal/lysosomal adaptor, MAPK and MTOR activator 3 provided by MGI
Primary source	MGI:MGI:1929467
See related	Ensembl:ENSMUSG00000091512
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW556229, Map2k1ip1, Mapbp, Mapksp1, Mp1
Expression	Ubiquitous expression in bladder adult (RPKM 27.6), placenta adult (RPKM 23.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

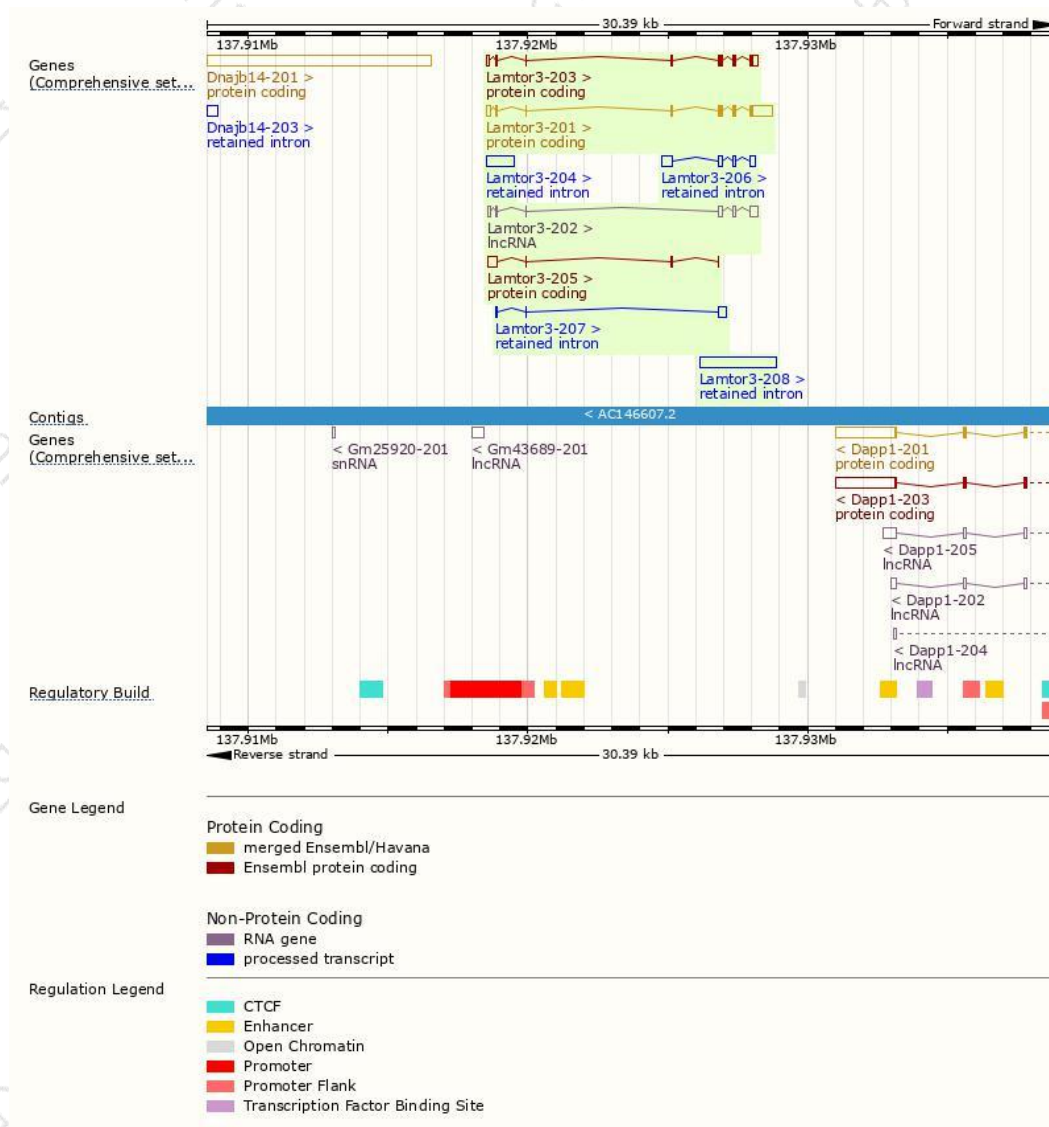
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lamtor3-201	ENSMUST00000168345.5	1295	124aa	Protein coding	CCDS51078	O88653 Q542I7	TSL:1 GENCODE basic APPRIS P1
Lamtor3-203	ENSMUST00000197064.4	733	124aa	Protein coding	CCDS51078	O88653 Q542I7	TSL:3 GENCODE basic APPRIS P1
Lamtor3-205	ENSMUST00000197817.1	447	36aa	Protein coding	-	A0A0G2JGQ3	CDS 3' incomplete TSL:5
Lamtor3-208	ENSMUST00000200656.1	2726	No protein	Retained intron	-	-	TSL:NA
Lamtor3-204	ENSMUST00000197798.1	989	No protein	Retained intron	-	-	TSL:NA
Lamtor3-206	ENSMUST00000200107.1	788	No protein	Retained intron	-	-	TSL:3
Lamtor3-207	ENSMUST00000200269.1	401	No protein	Retained intron	-	-	TSL:3
Lamtor3-202	ENSMUST00000196632.4	675	No protein	lncRNA	-	-	TSL:5

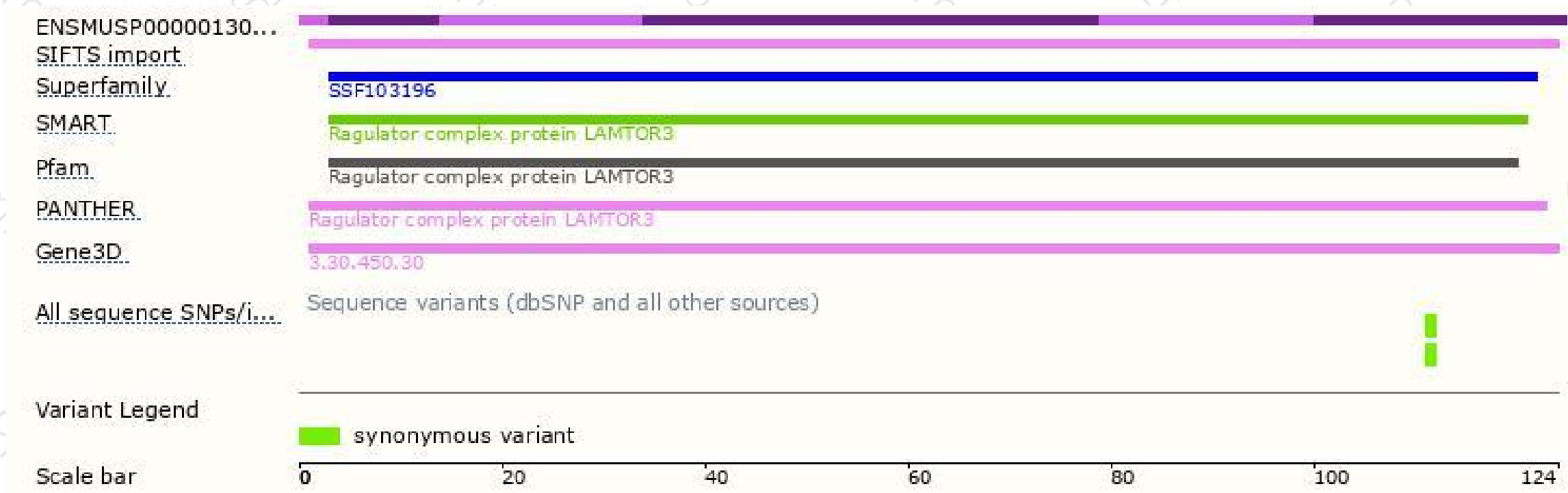
The strategy is based on the design of *Lamtor3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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