

***Lamc2* Cas9-KO Strategy**

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Project Overview

Project Name

Lamc2

Project type

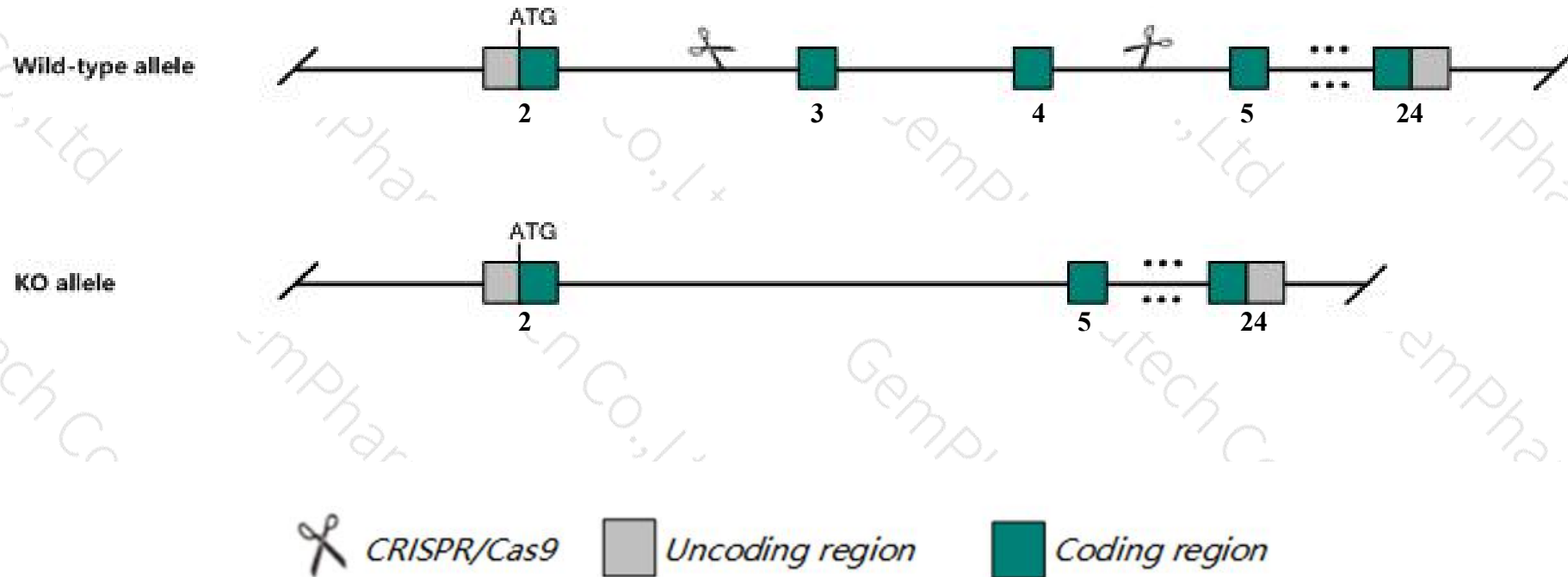
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lamc2* gene. The schematic diagram is as follows:



- The *Lamc2* gene has 6 transcripts. According to the structure of *Lamc2* gene, exon3-exon4 of *Lamc2-201* (ENSMUST00000027753.12) transcript is recommended as the knockout region. The region contains 325bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lamc2* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for disruptions in this gene display abnormalities in cell:cell adhesion involving epithelial cells.
- The encoded transcript 204 is incomplete and its effect is unknown.
- The non-coding transcripts 202 and 206 are unaffected.
- The *Lamc2* gene is located on the Chr1. 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)

Lamc2 laminin, gamma 2 [Mus musculus (house mouse)]

Gene ID: 16782, updated on 12-Mar-2019

Summary



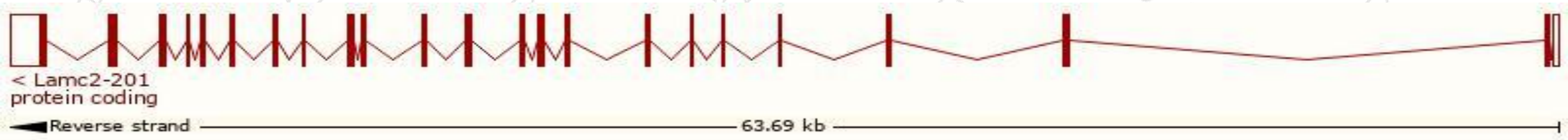
Official Symbol	Lamc2 provided by MGI
Official Full Name	laminin, gamma 2 provided by MGI
Primary source	MGI:MGI:99913
See related	Ensembl:ENSMUSG00000026479
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AA589349
Expression	Broad expression in lung adult (RPKM 15.7), colon adult (RPKM 6.6) and 16 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

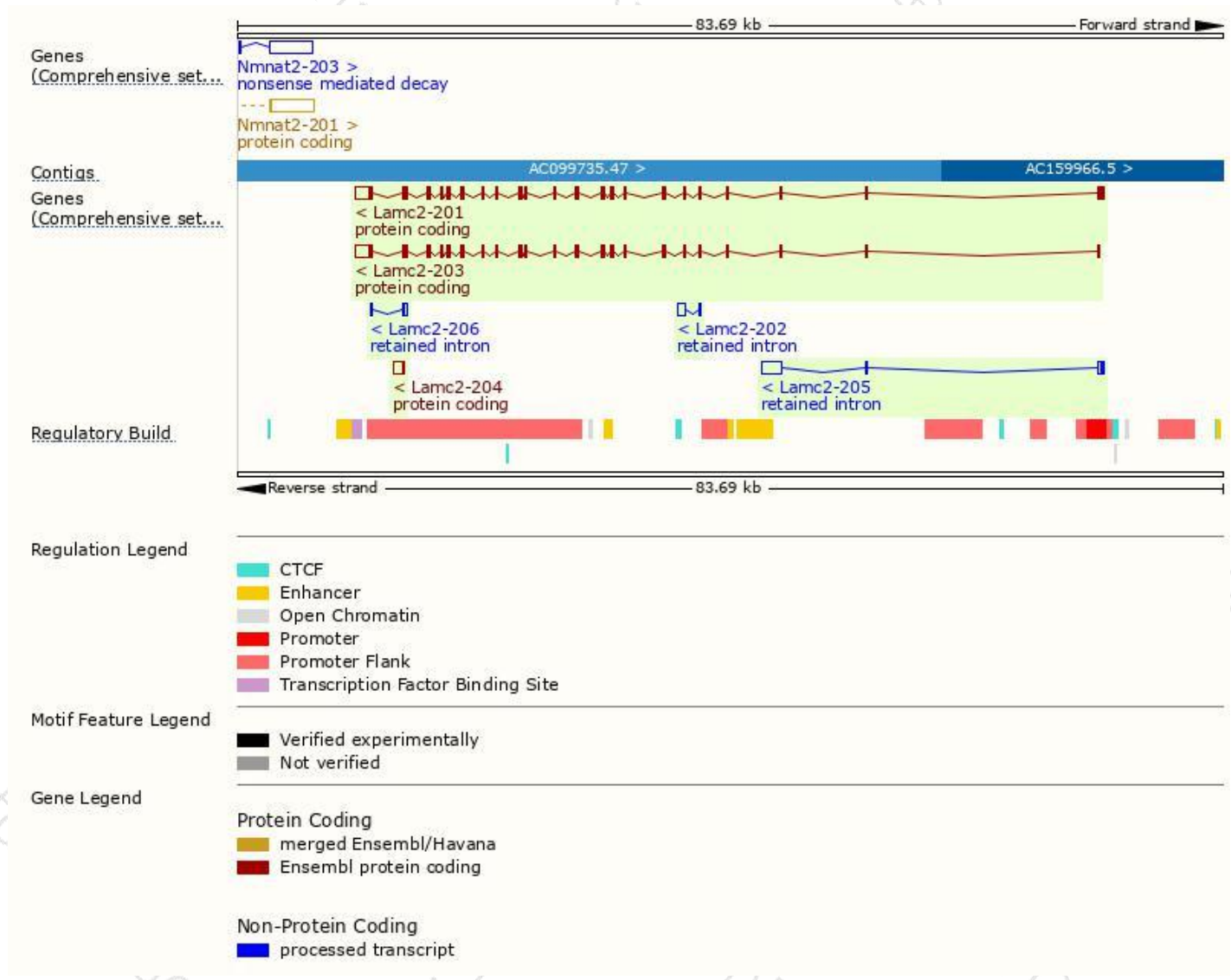
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lamc2-201	ENSMUST00000027753.12	5164	1193aa	Protein coding	CCDS15369	G5E874	TSL:5 GENCODE basic APPRIS P1
Lamc2-203	ENSMUST00000185356.6	4916	1193aa	Protein coding	CCDS15369	G5E874	TSL:1 GENCODE basic APPRIS P1
Lamc2-204	ENSMUST00000188206.1	818	35aa	Protein coding	-	Q9R086	CDS 5' incomplete TSL:NA
Lamc2-205	ENSMUST00000188831.1	2255	No protein	Retained intron	-	-	TSL:1
Lamc2-202	ENSMUST00000185328.1	717	No protein	Retained intron	-	-	TSL:5
Lamc2-206	ENSMUST00000189005.1	440	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Lamc2-201* transcript,The transcription is shown below



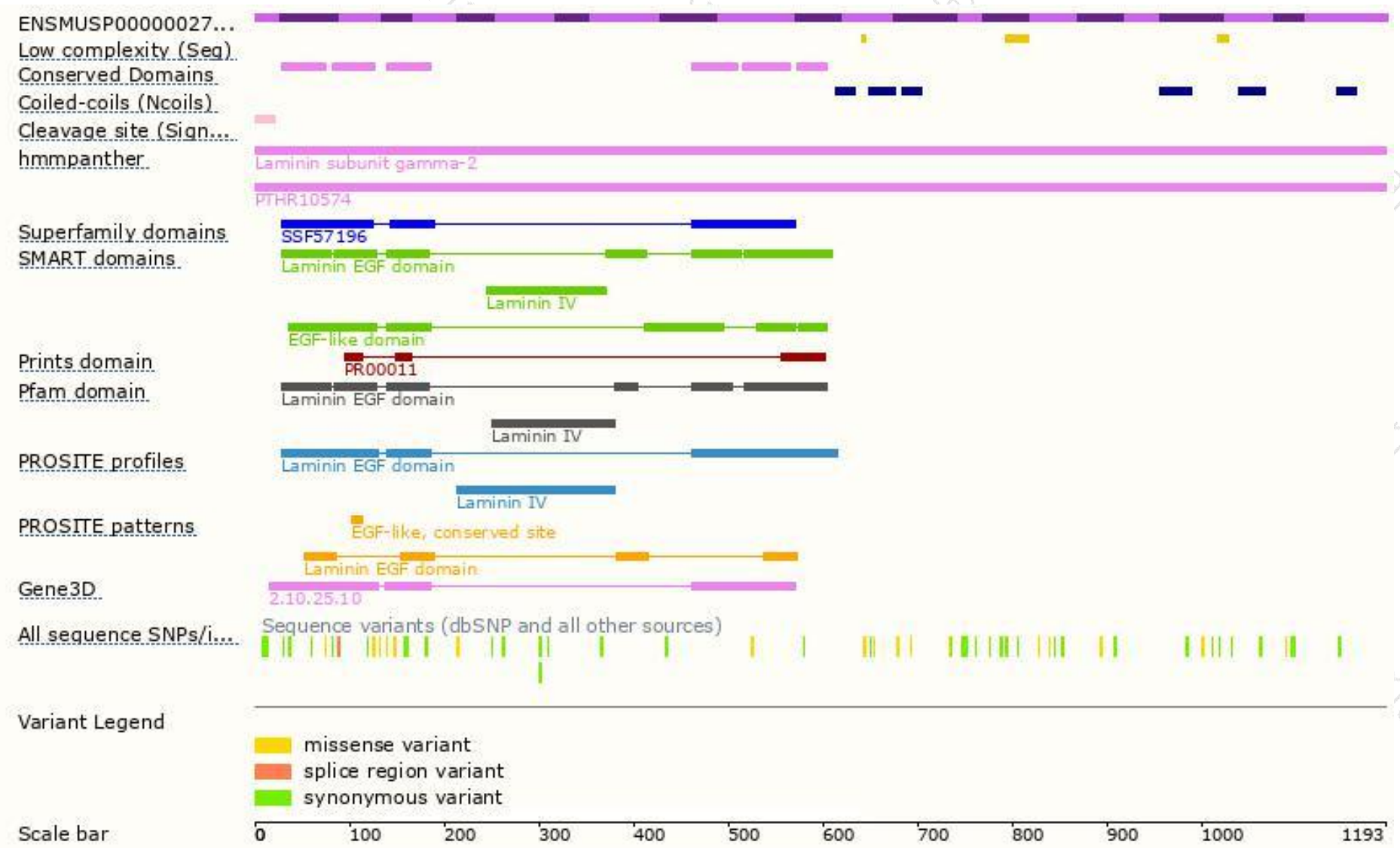
Genomic location distribution



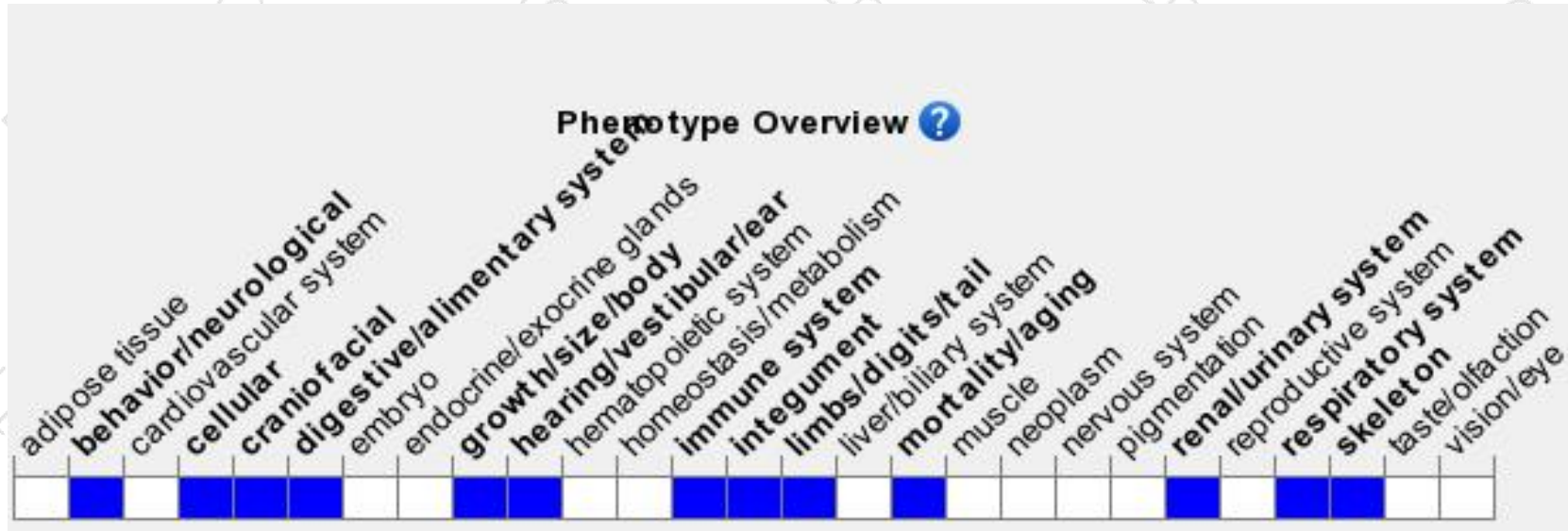
Protein domain



集萃药康
GemPharmatech



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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