

# ***Lamc3 Cas9-KO Strategy***

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# Project Overview

**Project Name**

*Lamc3*

**Project type**

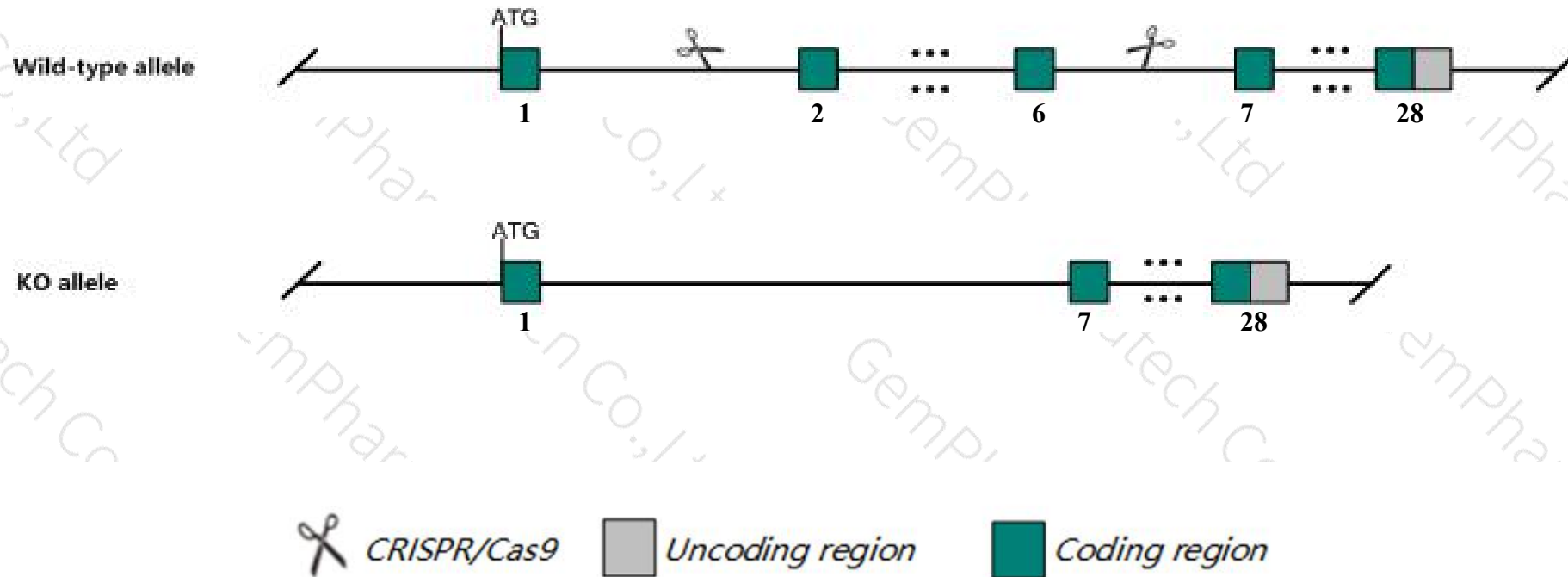
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lamc3* gene. The schematic diagram is as follows:



- The *Lamc3* gene has 3 transcripts. According to the structure of *Lamc3* gene, exon2-exon6 of *Lamc3-201* (ENSMUST00000028187.6) transcript is recommended as the knockout region. The region contains 910bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lamc3* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a reporter allele exhibit abnormal amacrine cell morphology.
- The *Lamc3* gene is located on the Chr2. 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)

## Lamc3 laminin gamma 3 [ *Mus musculus* (house mouse) ]

Gene ID: 23928, updated on 21-Jan-2020

### Summary

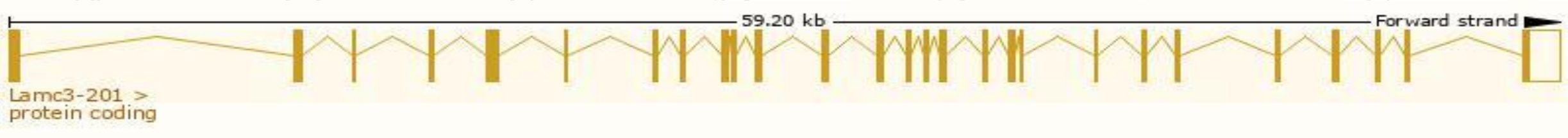
Official Symbol	Lamc3 provided by MGI
Official Full Name	laminin gamma 3 provided by MGI
Primary source	<a href="#">MGI:MGI:1344394</a>
See related	<a href="#">Ensembl:ENSMUSG00000026840</a>
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI562206; AW240805; 1110064A23Rik
Expression	Biased expression in ovary adult (RPKM 25.0), adrenal adult (RPKM 10.6) and 12 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

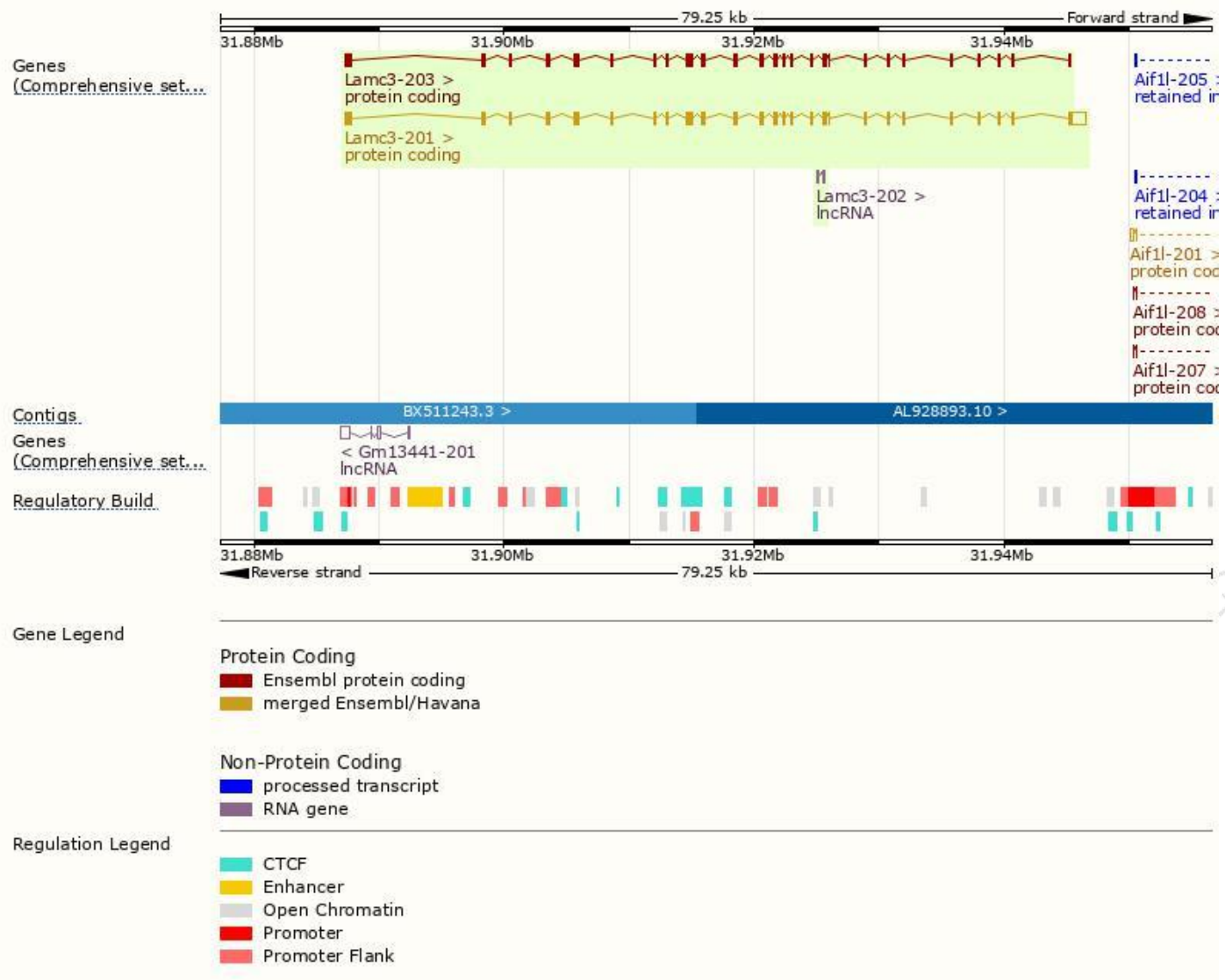
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lamc3-201	<a href="#">ENSMUST00000028187.6</a>	5871	<a href="#">1581aa</a>	Protein coding	<a href="#">CCDS15903</a>	<a href="#">Q9R0B6</a>	TSL:1 GENCODE basic APPRIS P1
Lamc3-203	<a href="#">ENSMUST00000138325.7</a>	4664	<a href="#">1537aa</a>	Protein coding	-	<a href="#">A2ATM9</a>	CDS 3' incomplete TSL:1
Lamc3-202	<a href="#">ENSMUST00000135995.1</a>	292	No protein	lncRNA	-	-	TSL:3

The strategy is based on the design of *Lamc3-201* transcript,The transcription is shown below

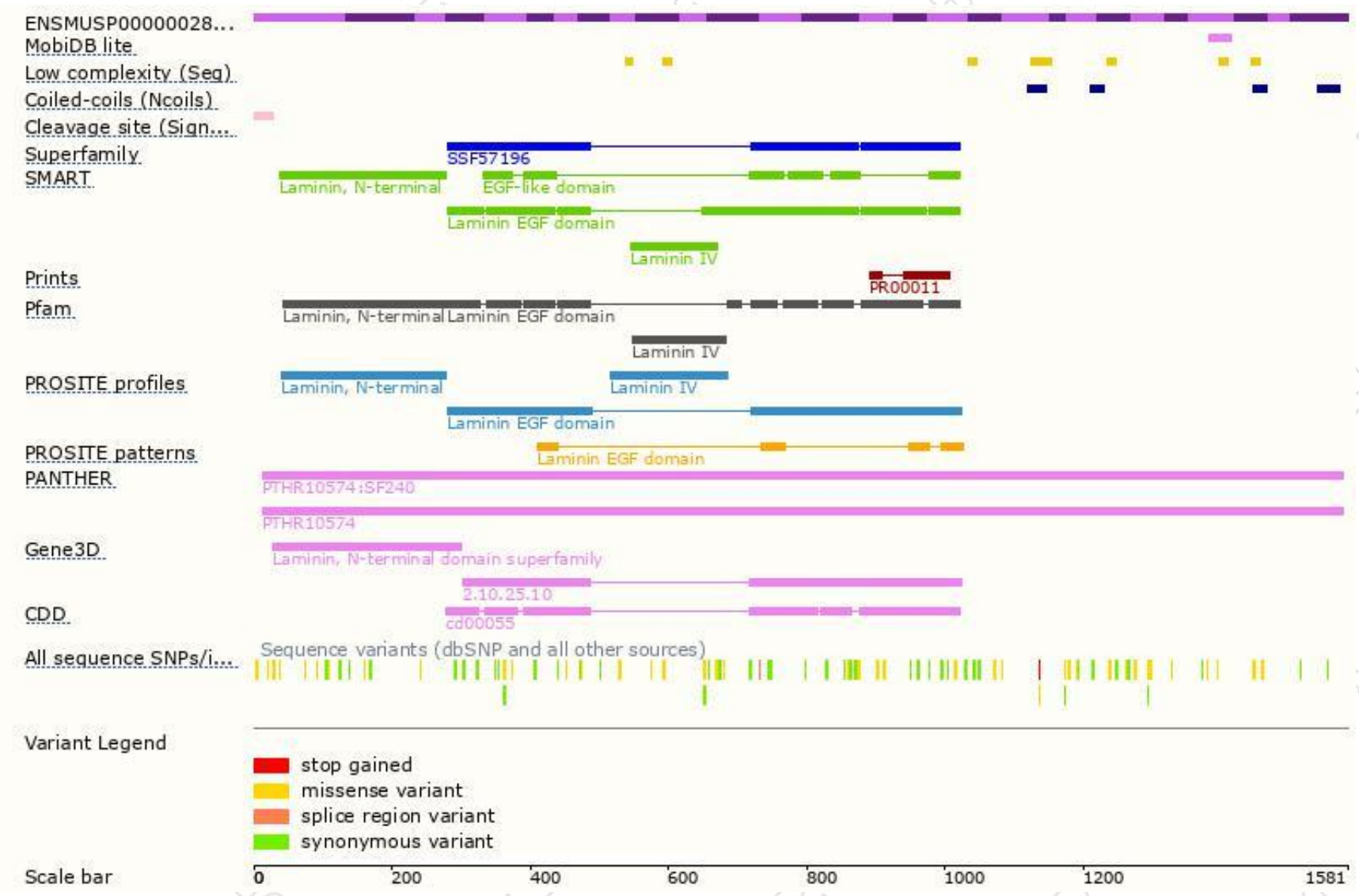


# Genomic location distribution

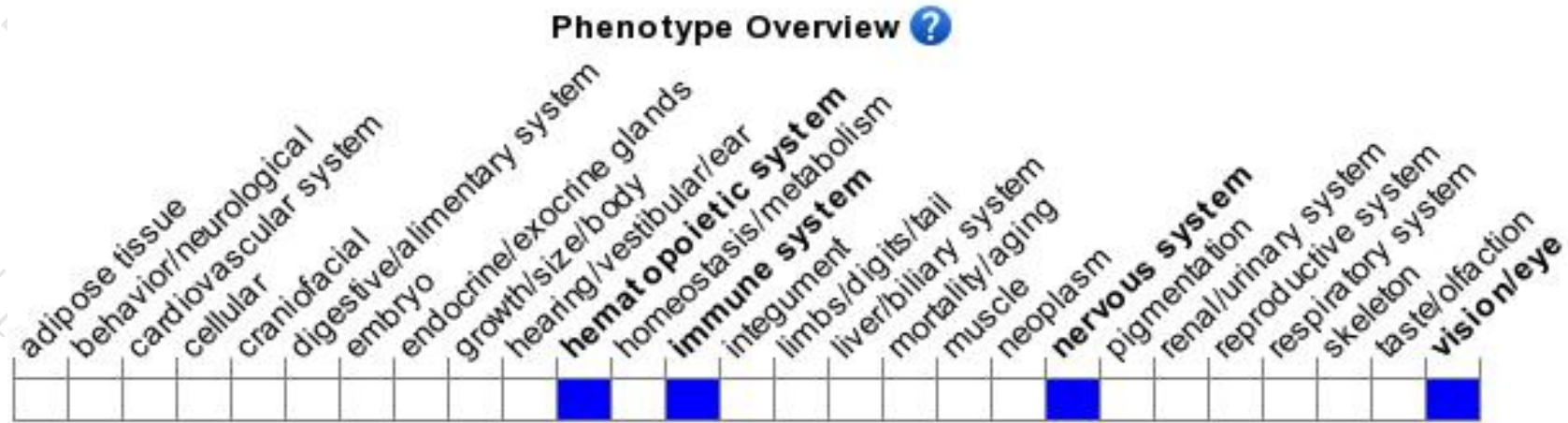




# Protein domain



# Mouse phenotype description(MGI )



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

According to the existing MGI data, Mice homozygous for a reporter allele exhibit abnormal amacrine cell morphology.

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

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