

***Emilin3* Cas9-KO Strategy**

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Project Overview

Project Name

Emilin3

Project type

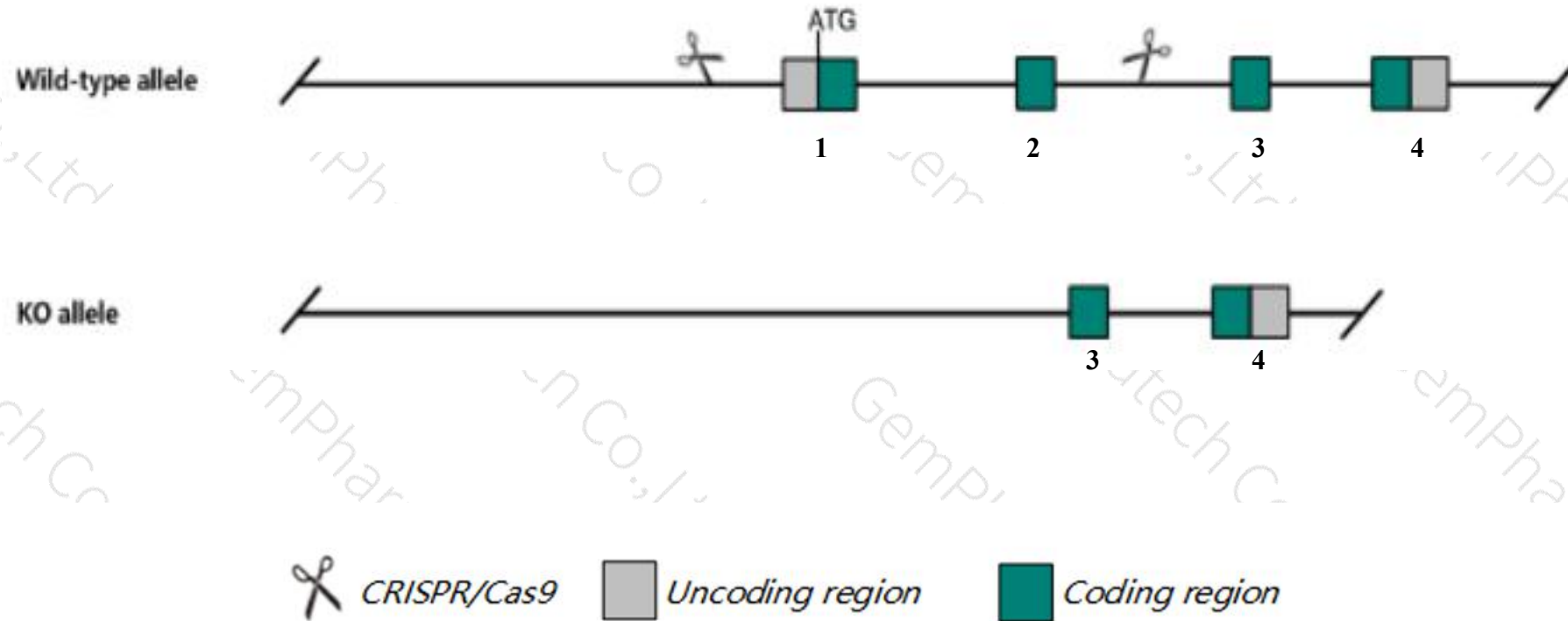
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Emilin3* gene. The schematic diagram is as follows:



- The *Emilin3* gene has 2 transcripts. According to the structure of *Emilin3* gene, exon1-exon2 of *Emilin3-201* (ENSMUST00000057169.4) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Emilin3* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Emilin3* 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)

Emilin3 elastin microfibril interfacer 3 [Mus musculus (house mouse)]

Gene ID: 280635, updated on 13-Mar-2020

Summary



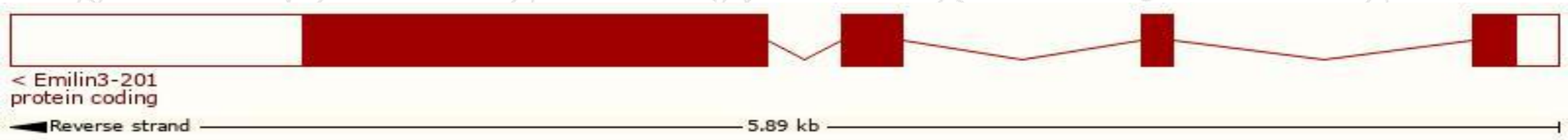
Official Symbol	Emilin3 provided by MGI
Official Full Name	elastin microfibril interfacer 3 provided by MGI
Primary source	MGI:MGI:2389142
See related	Ensembl:ENSMUSG00000050700
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110013O17Rik, EMILIN-3, EMILIN-5, EMILIN-T, Emilin5
Expression	Biased expression in limb E14.5 (RPKM 27.0), CNS E11.5 (RPKM 2.7) and 4 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

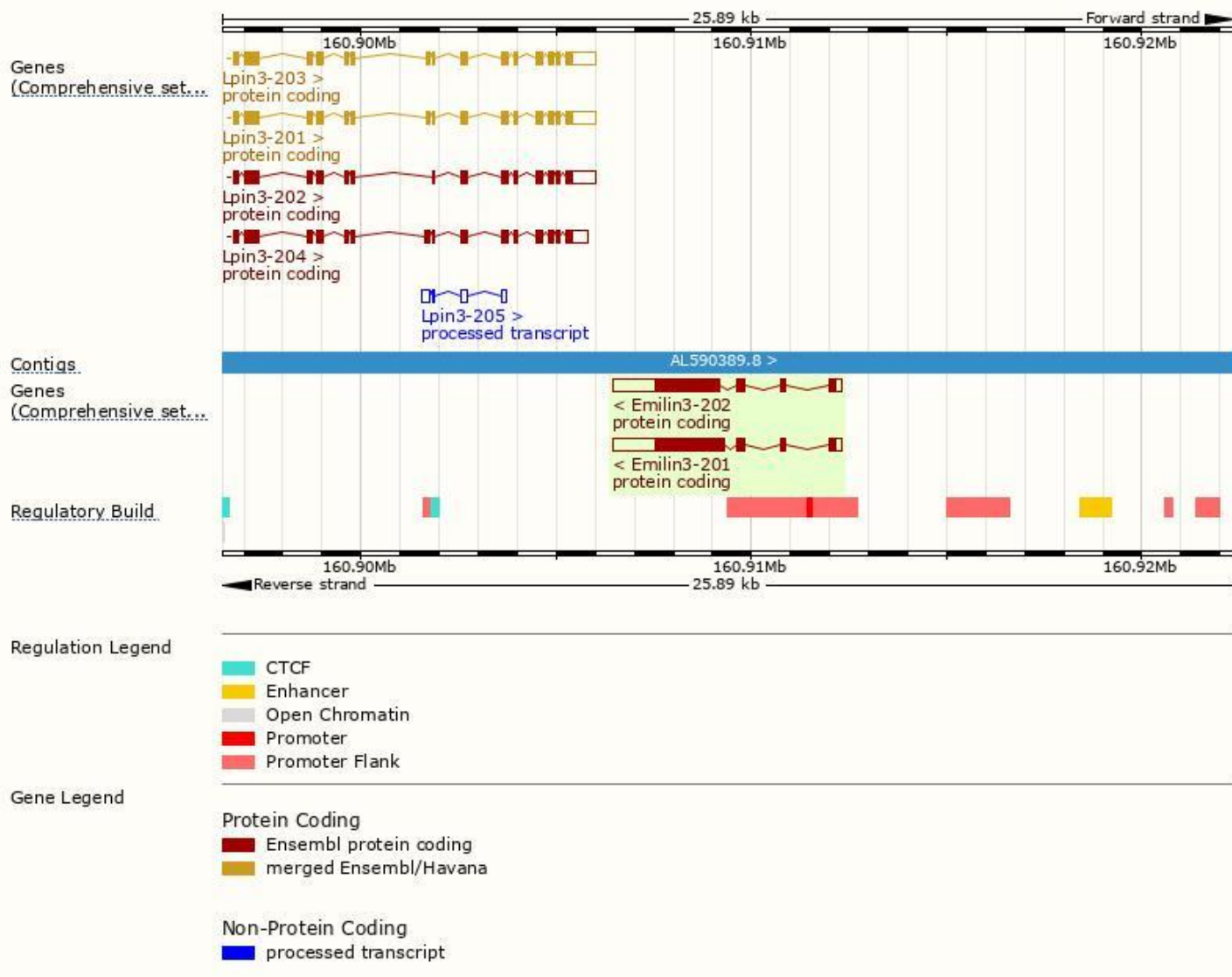
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Emilin3-201	ENSMUST00000057169.4	3547	758aa	Protein coding	CCDS16999	P59900	TSL:1 GENCODE basic APPRIS P3
Emilin3-202	ENSMUST00000109454.7	3396	711aa	Protein coding	CCDS71181	A2A4B4	TSL:5 GENCODE basic APPRIS ALT2

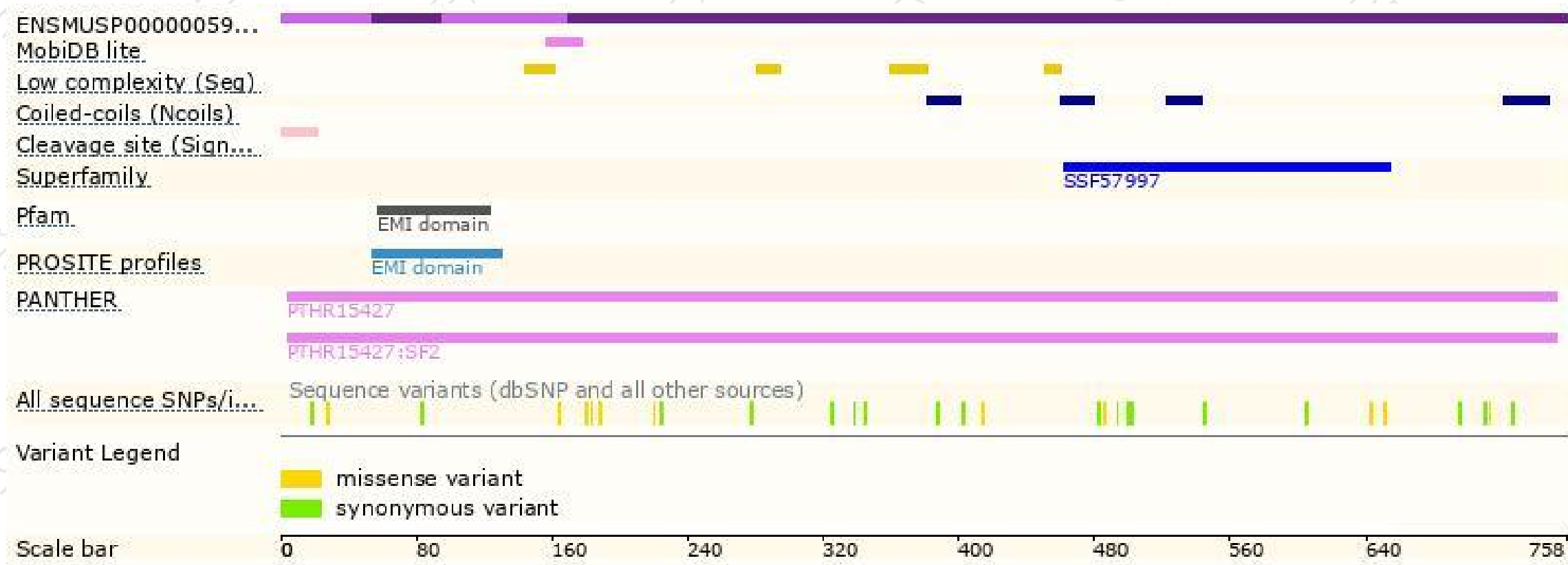
The strategy is based on the design of *Emilin3-201* transcript,the transcription is shown below:



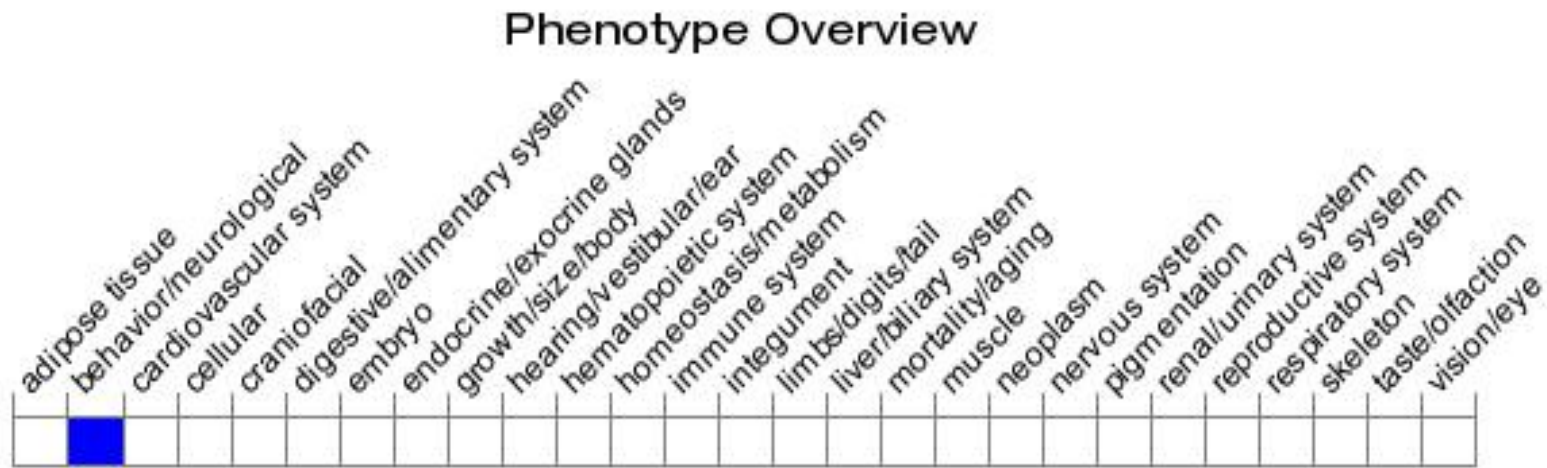
Genomic location distribution



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/>).

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

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