

Calu Cas9-CKO Strategy

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Project Overview

Project Name

Calu

Project type

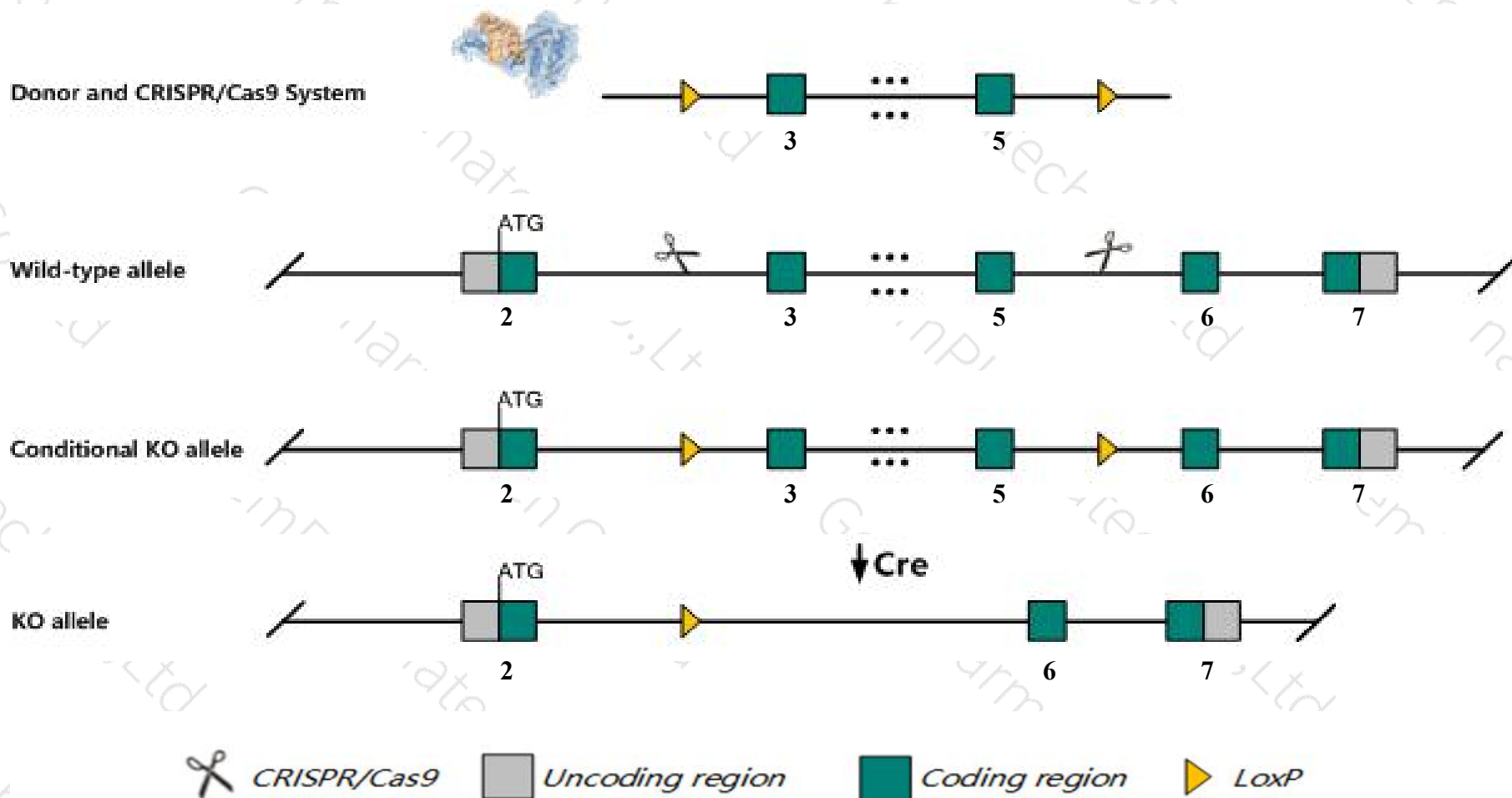
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



- The *Calu* gene has 9 transcripts. According to the structure of *Calu* gene, exon3-exon5 of *Calu-201* (ENSMUST00000031779.16) transcript is recommended as the knockout region. The region contains 422bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Calu* 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 *Calu* gene is located on the Chr6. 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)

Calu calumenin [Mus musculus (house mouse)]

Gene ID: 12321, updated on 31-Jan-2019

Summary



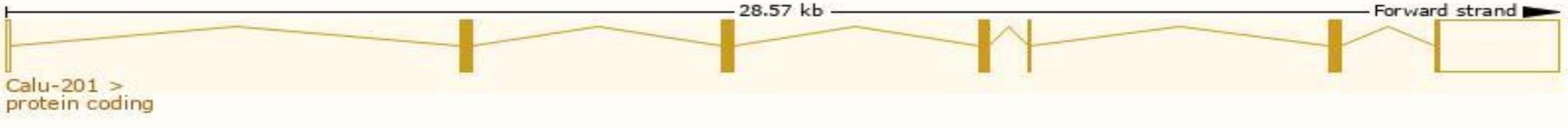
Official Symbol	Calu provided by MGI
Official Full Name	calumenin provided by MGI
Primary source	MGI:MGI:1097158
See related	Ensembl:ENSMUSG00000029767
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9530075H20Rik
Expression	Broad expression in placenta adult (RPKM 120.1), limb E14.5 (RPKM 116.2) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

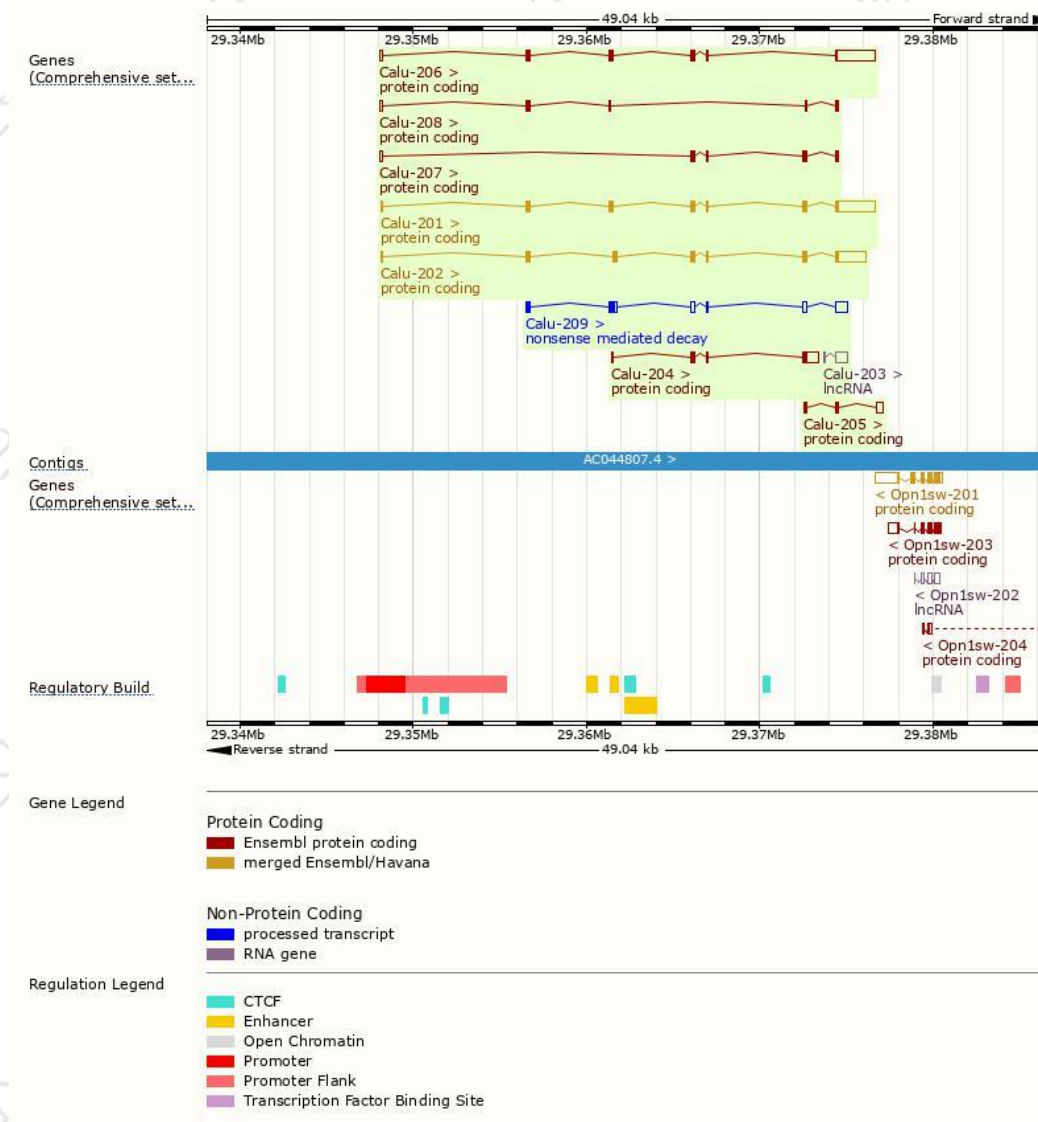
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Calu-201	ENSMUST00000031779.16	3229	315aa	Protein coding	CCDS19957	O35887 Q3TUF3	TSL:1 GENCODE basic APPRIS P5
Calu-202	ENSMUST00000090481.13	2670	315aa	Protein coding	CCDS19958	Q6XLQ8	TSL:1 GENCODE basic APPRIS ALT 1
Calu-206	ENSMUST00000172974.7	3063	227aa	Protein coding	-	G3UWR0	TSL:5 GENCODE basic
Calu-204	ENSMUST00000156163.1	1137	168aa	Protein coding	-	G3UXA8	CDS 5' incomplete TSL:2
Calu-207	ENSMUST00000173216.7	673	163aa	Protein coding	-	G3V004	TSL:5 GENCODE basic
Calu-205	ENSMUST00000172607.1	648	74aa	Protein coding	-	G3UXA3	CDS 5' incomplete TSL:3
Calu-208	ENSMUST00000173694.4	611	154aa	Protein coding	-	G3UWV3	TSL:5 GENCODE basic
Calu-209	ENSMUST00000174096.6	1670	141aa	Nonsense mediated decay	-	G3UY49	CDS 5' incomplete TSL:5
Calu-203	ENSMUST00000138523.1	762	No protein	lncRNA	-	-	TSL:3

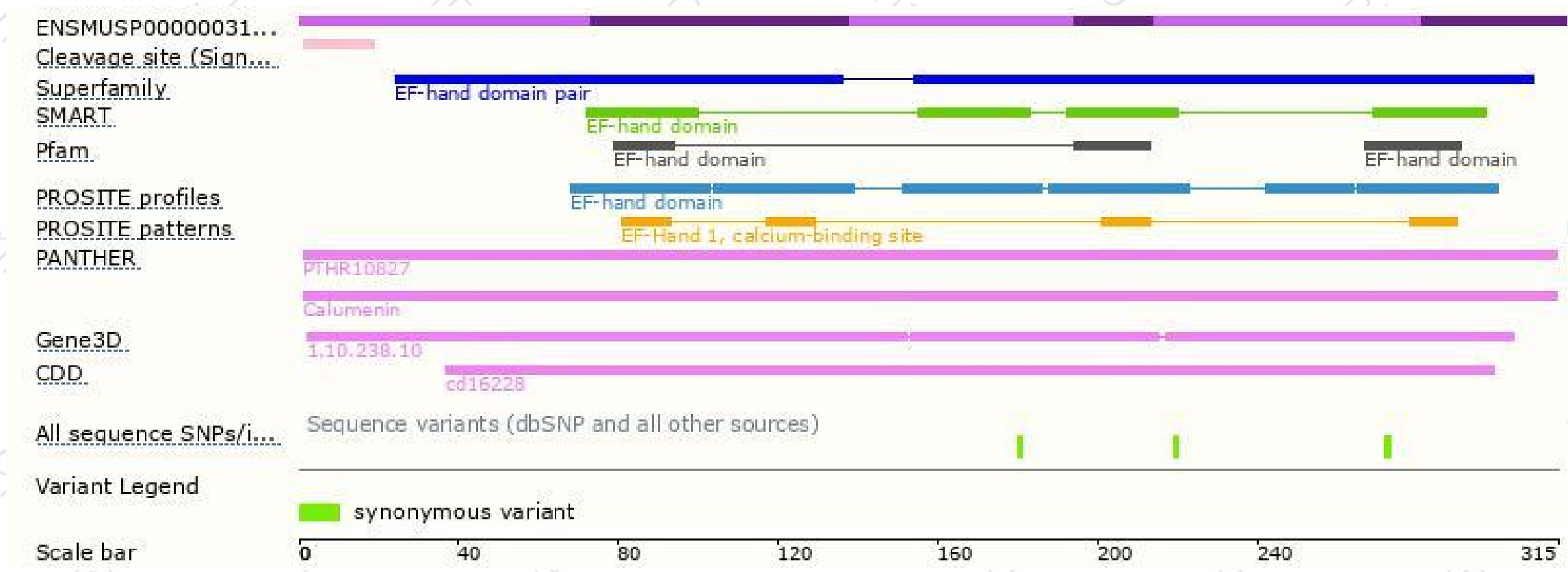
The strategy is based on the design of *Calu-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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