

Cemip2 Cas9-CKO Strategy

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Reviewer:

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Design Date:

2020-3-5

Project Overview

Project Name

Cemip2

Project type

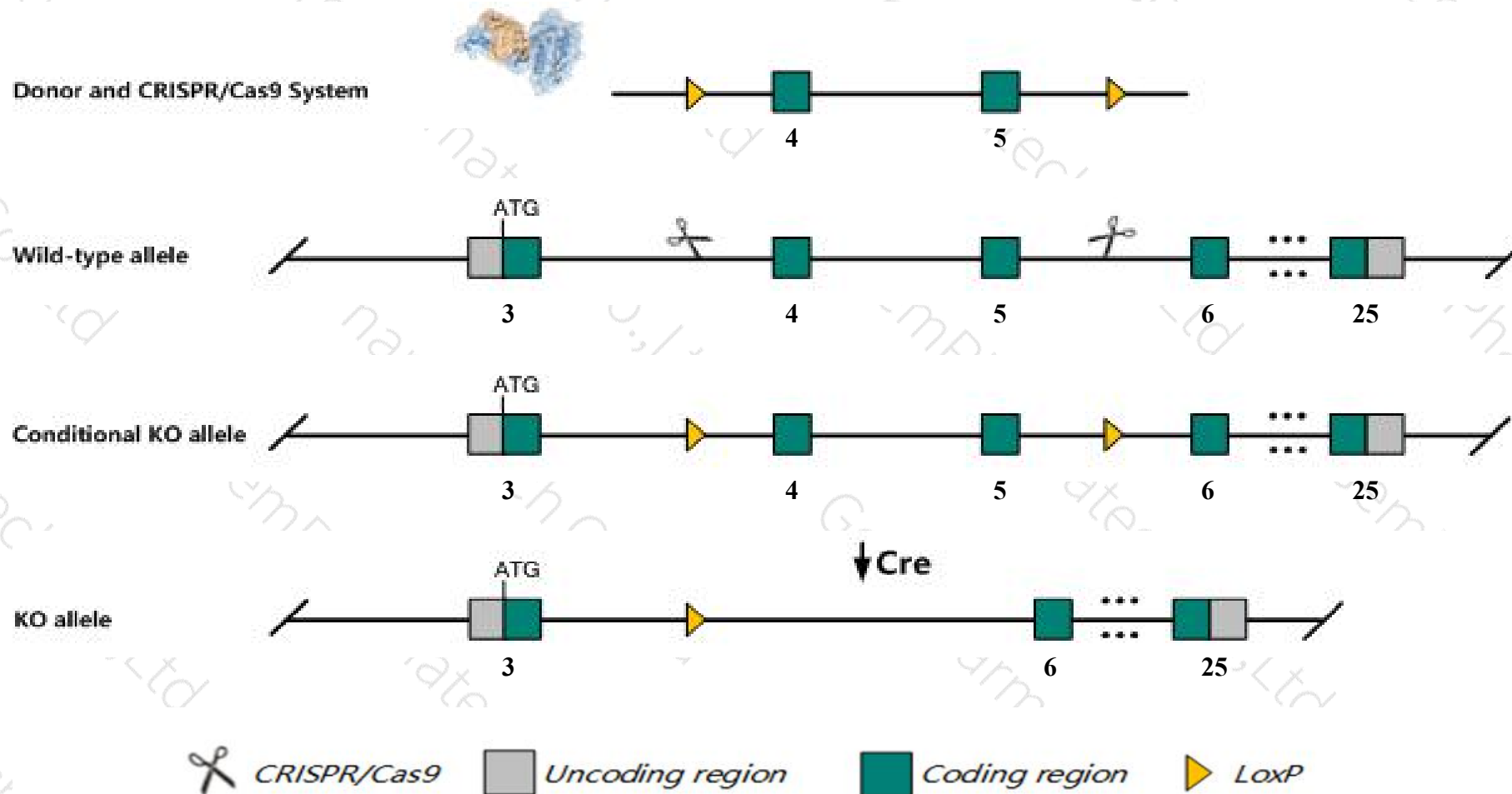
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cemip2* gene. The schematic diagram is as follows:



- The *Cemip2* gene has 5 transcripts. According to the structure of *Cemip2* gene, exon4-exon5 of *Cemip2*-202 (ENSMUST00000096194.8) transcript is recommended as the knockout region. The region contains 703bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cemip2* 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 *Cemip2* gene is located on the Chr19. 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.
- Transcript 204 CDS 3' incomplete the influences is unknown.
- 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)

Cemip2 cell migration inducing hyaluronidase 2 [Mus musculus (house mouse)]

Gene ID: 83921, updated on 31-Jan-2019

Summary



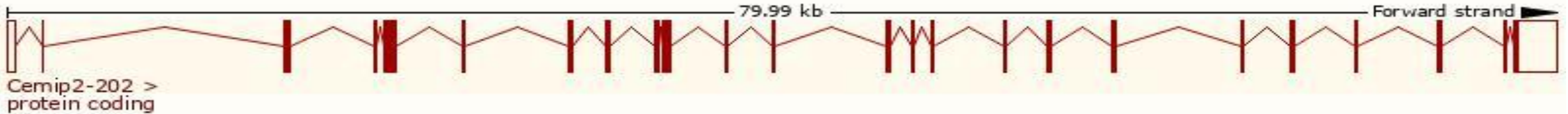
Official Symbol	Cemip2 provided by MGI
Official Full Name	cell migration inducing hyaluronidase 2 provided by MGI
Primary source	MGI:MGI:1890373
See related	Ensembl:ENSMUSG00000024754
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Tmem2
Expression	Broad expression in lung adult (RPKM 15.6), CNS E11.5 (RPKM 14.5) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

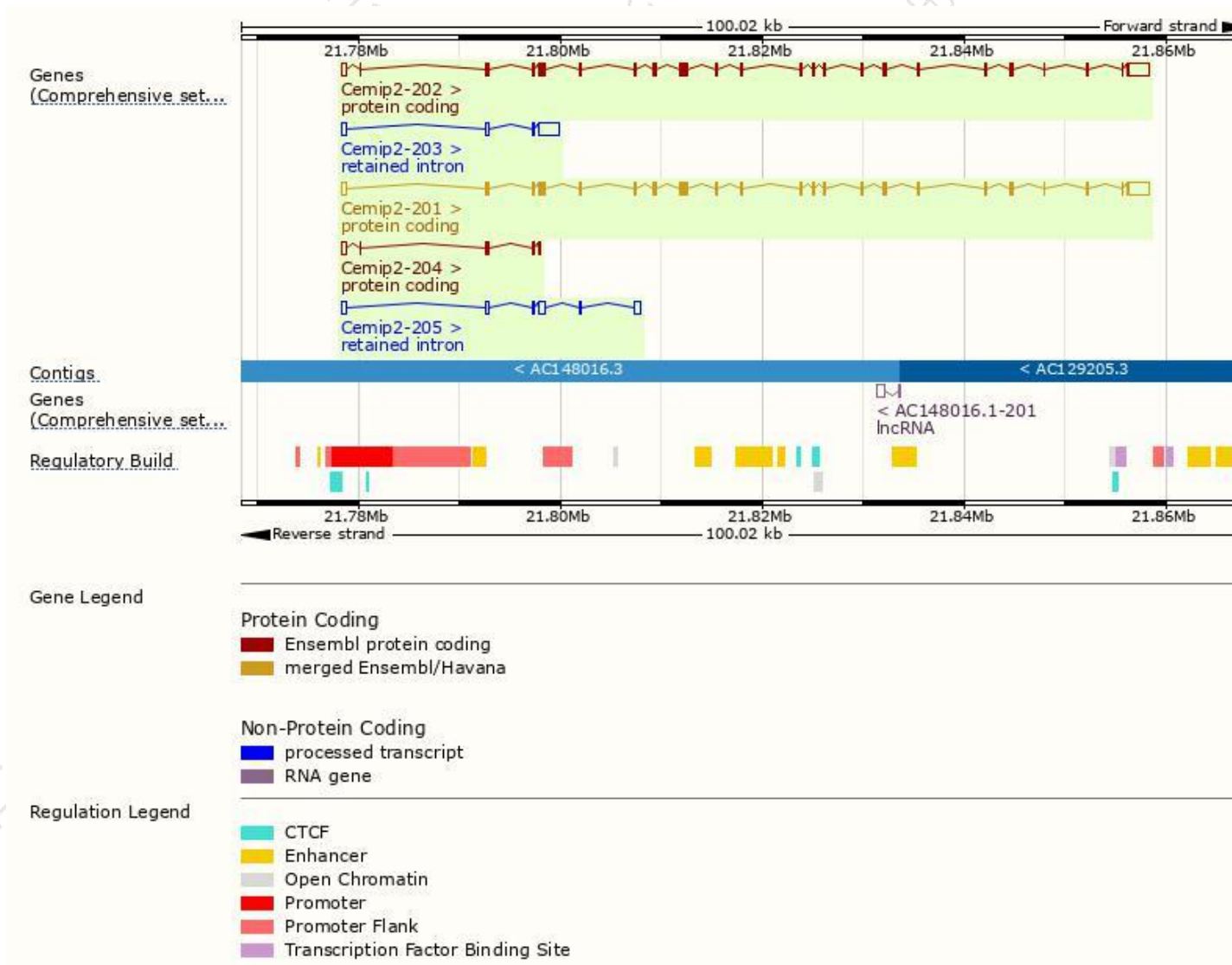
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cemip2-202	ENSMUST00000096194.8	6667	1383aa	Protein coding	CCDS37934	Q5FWI3	TSL:5 GENCODE basic APPRIS P1
Cemip2-201	ENSMUST00000025663.7	6602	1383aa	Protein coding	CCDS37934	Q5FWI3	TSL:1 GENCODE basic APPRIS P1
Cemip2-204	ENSMUST00000237802.1	1096	194aa	Protein coding	-	-	CDS 3' incomplete
Cemip2-203	ENSMUST00000236506.1	2954	No protein	Retained intron	-	-	
Cemip2-205	ENSMUST00000238079.1	2159	No protein	Retained intron	-	-	

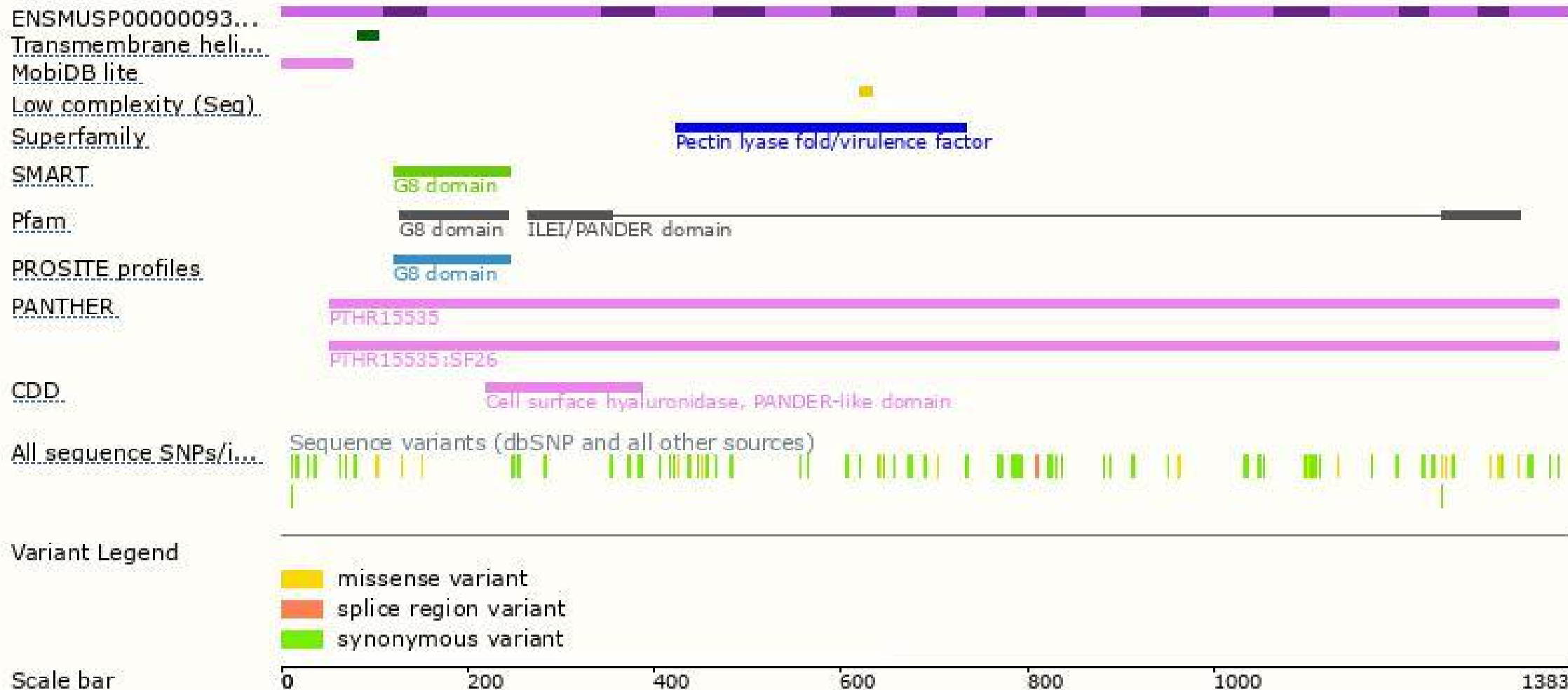
The strategy is based on the design of *Cemip2-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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