

Opcml Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Opcml

Project type

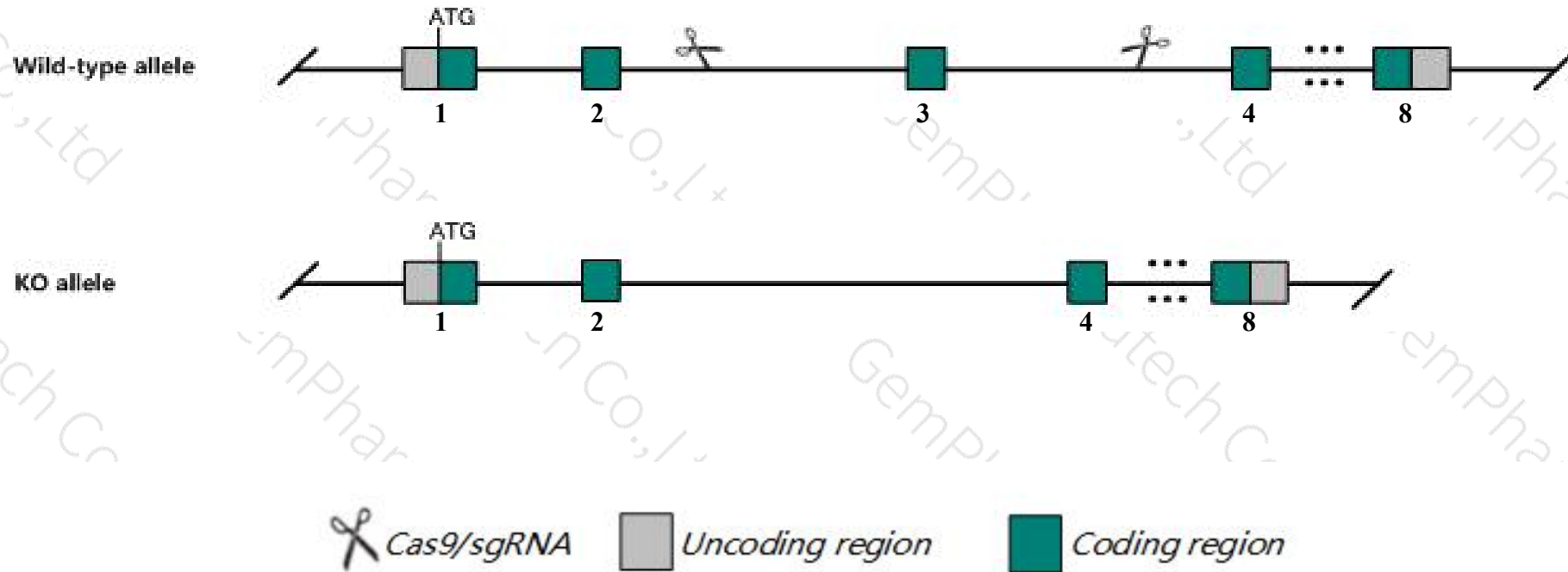
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

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



- The *Opcml* gene has 9 transcripts. According to the structure of *Opcml* gene, exon3 of *Opcml*-202 (ENSMUST00000115243.8) transcript is recommended as the knockout region. The region contains 233bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Opcml* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- The *Opcml* gene is located on the Chr9. 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)

Opcml opioid binding protein/cell adhesion molecule-like [*Mus musculus* (house mouse)]

Gene ID: 330908, updated on 15-Aug-2019

Summary

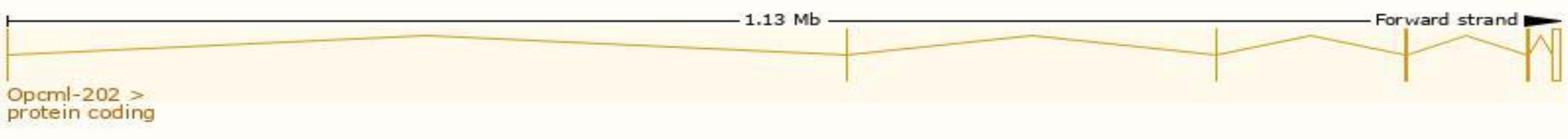
Official Symbol	Opcml provided by MGI
Official Full Name	opioid binding protein/cell adhesion molecule-like provided by MGI
Primary source	MGI:MGI:97397
See related	Ensembl:ENSMUSG000000062257
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm181; Obcam; A1844366; 3732419F12; C230027C17; 2900075O15Rik; B930023M13Rik
Expression	Biased expression in frontal lobe adult (RPKM 13.6), cortex adult (RPKM 13.0) and 4 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

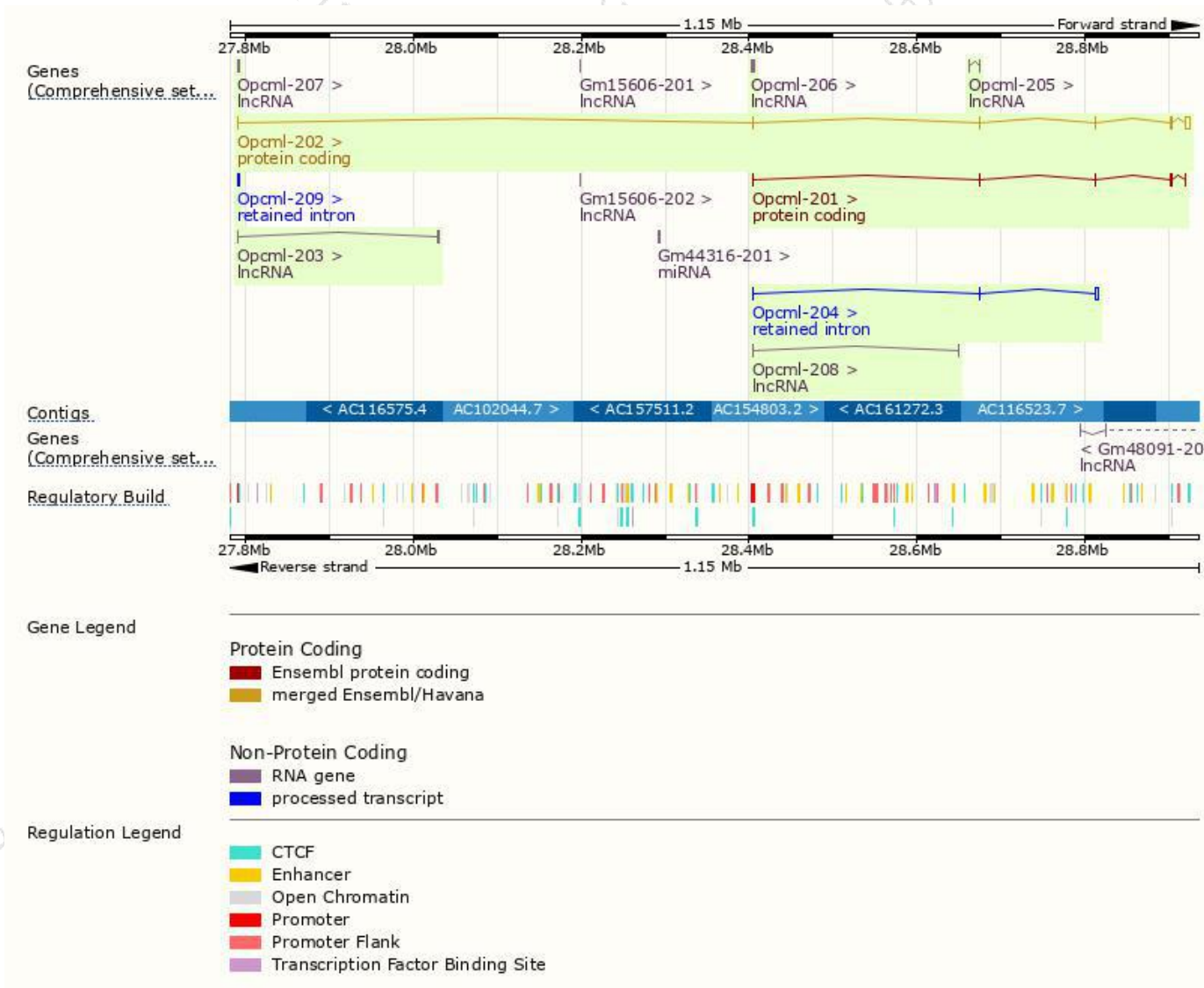
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Opcml-202	ENSMUST00000115243.8	6676	337aa	Protein coding	CCDS22942	Q6DFY2	TSL:1 GENCODE basic
Opcml-201	ENSMUST00000073822.5	2378	345aa	Protein coding	-	G5E8G3	TSL:5 GENCODE basic APPRIS P1
Opcml-206	ENSMUST00000133142.1	2592	No protein	Processed transcript	-	-	TSL:1
Opcml-205	ENSMUST00000126845.1	730	No protein	Processed transcript	-	-	TSL:3
Opcml-203	ENSMUST00000123779.1	665	No protein	Processed transcript	-	-	TSL:1
Opcml-208	ENSMUST00000150098.1	632	No protein	Processed transcript	-	-	TSL:3
Opcml-207	ENSMUST00000134002.1	351	No protein	Processed transcript	-	-	TSL:3
Opcml-204	ENSMUST00000126673.1	2894	No protein	Retained intron	-	-	TSL:1
Opcml-209	ENSMUST00000214395.1	1771	No protein	Retained intron	-	-	TSL:NA

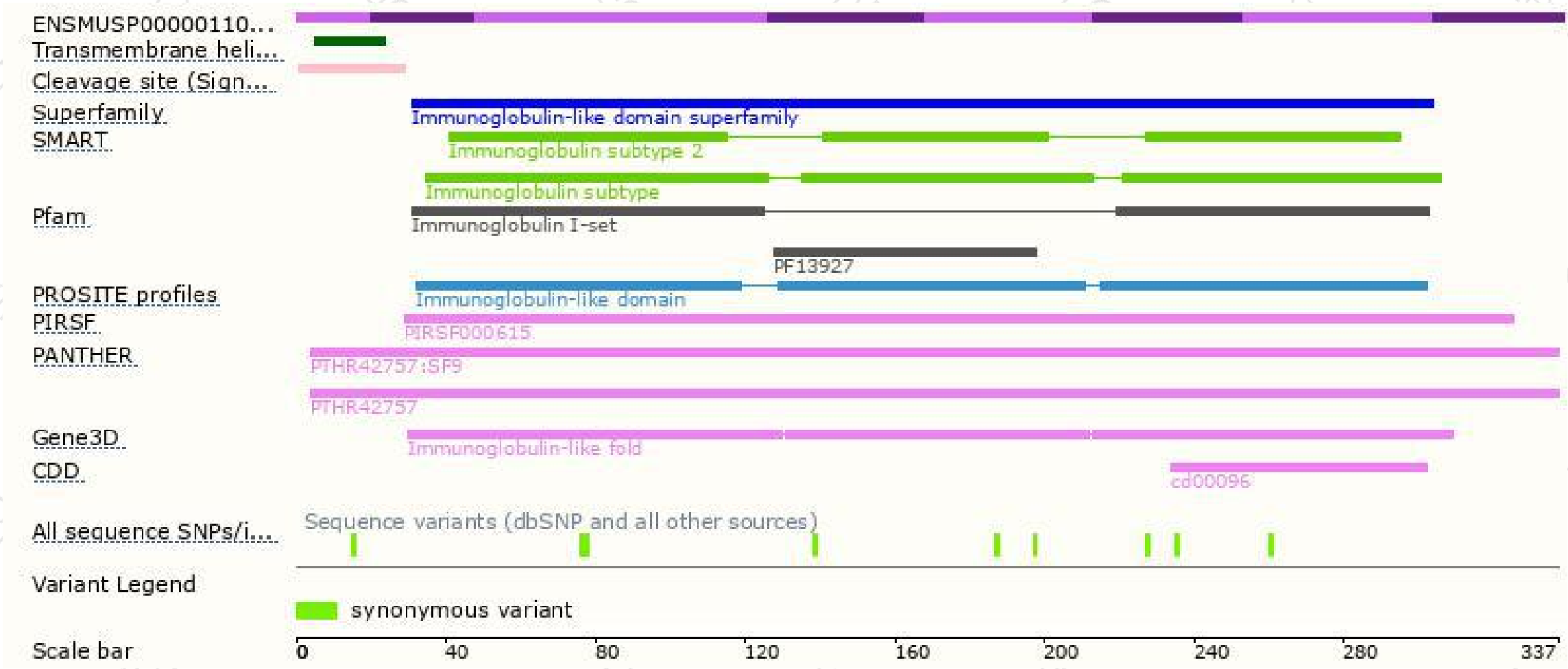
The strategy is based on the design of *Opcml-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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