

Ipcefl Cas9-CKO Strategy

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Project Overview

Project Name

Ipcefl

Project type

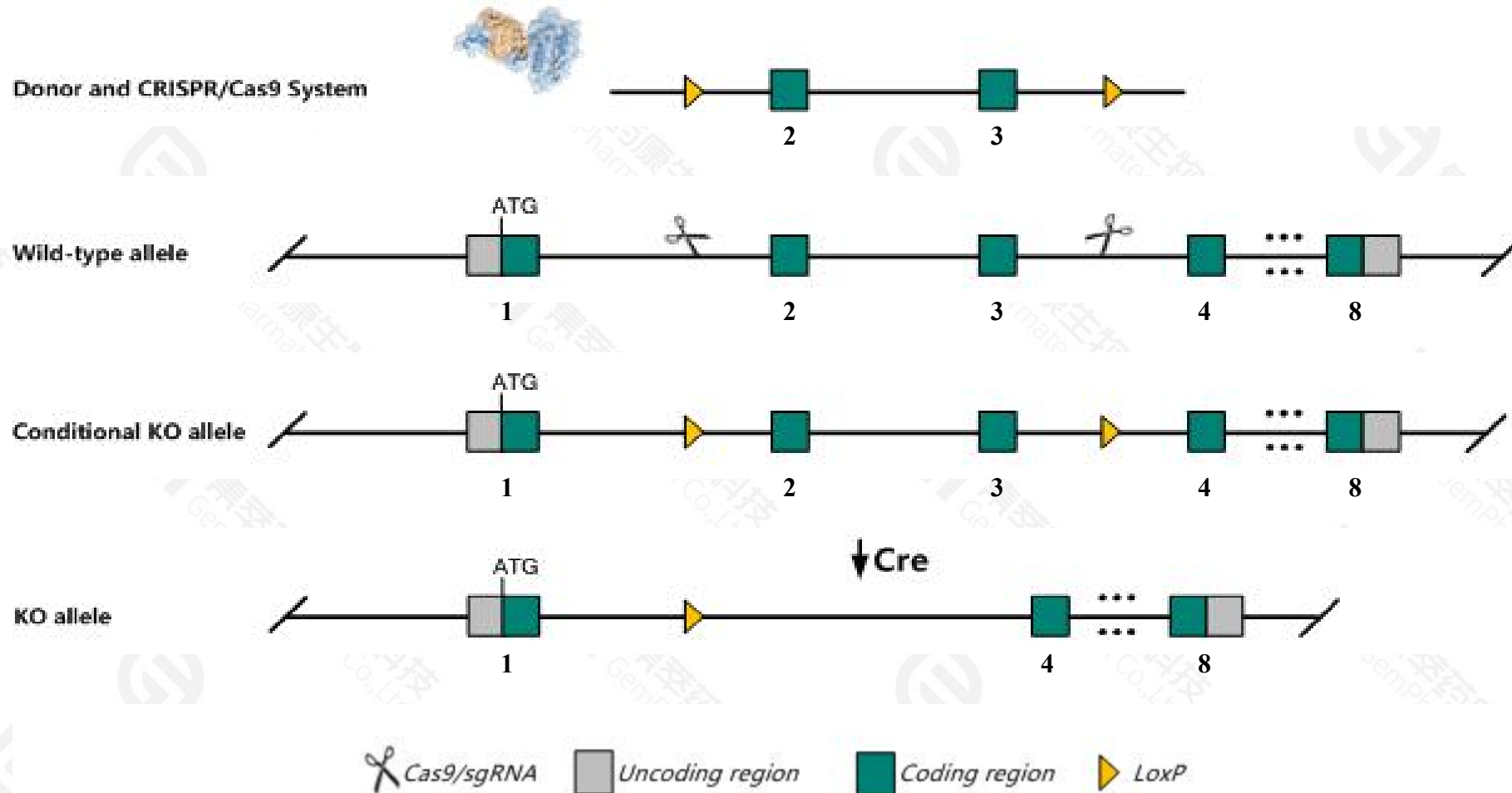
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



Technical routes

- The *Ipcefl* gene has 9 transcripts. According to the structure of *Ipcefl* gene, exon2-exon3 of *Ipcefl*-201(ENSMUST00000078070.10) transcript is recommended as the knockout region. The region contains 146bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ipcefl* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor was constructed. Cas9, sgRNA 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 was 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.

- The KO region overlaps with *Oprm1* gene. Knockout the region may affect the function of *Oprm1* gene.
- The *Ipcefl* gene is located on the Chr10. 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)

Ipcef1 interaction protein for cytohesin exchange factors 1 [*Mus musculus* (house mouse)]

[Download Datasets](#)

Gene ID: 320495, updated on 6-May-2021

Summary



Official Symbol	Ipcef1 provided by MGI
Official Full Name	interaction protein for cytohesin exchange factors 1 provided by MGI
Primary source	MGI:MGI:2444159
See related	Ensembl:ENSMUSG000000064065
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	A130090K04Rik
Expression	Biased expression in cortex adult (RPKM 7.0), frontal lobe adult (RPKM 6.9) and 8 other tissues See more
Orthologs	human all

NEW

Try the new [Gene table](#)

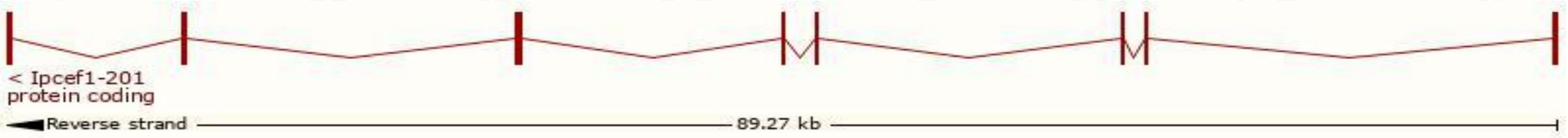
Try the new [Transcript table](#)

Transcript information (Ensembl)

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

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ipcef1-203	ENSMUST00000105617.8	6041	406aa	Protein coding	CCDS56688		TSL:5 , GENCODE basic , APPRIS P3 ,
Ipcef1-201	ENSMUST00000078070.10	1308	410aa	Protein coding	CCDS83676		TSL:1 , GENCODE basic , APPRIS ALT2 ,
Ipcef1-202	ENSMUST00000086896.10	1196	242aa	Protein coding	CCDS56689		TSL:1 , GENCODE basic ,
Ipcef1-209	ENSMUST00000170680.8	1174	242aa	Protein coding	CCDS56689		TSL:5 , GENCODE basic ,
Ipcef1-205	ENSMUST00000145156.8	829	258aa	Protein coding	-		CDS 3' incomplete , TSL:5 ,
Ipcef1-207	ENSMUST00000151960.2	425	98aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Ipcef1-204	ENSMUST00000144622.8	3216	No protein	Processed transcript	-		TSL:1 ,
Ipcef1-208	ENSMUST00000154998.8	3077	No protein	Processed transcript	-		TSL:1 ,
Ipcef1-206	ENSMUST00000149708.2	631	No protein	Processed transcript	-		TSL:3 ,

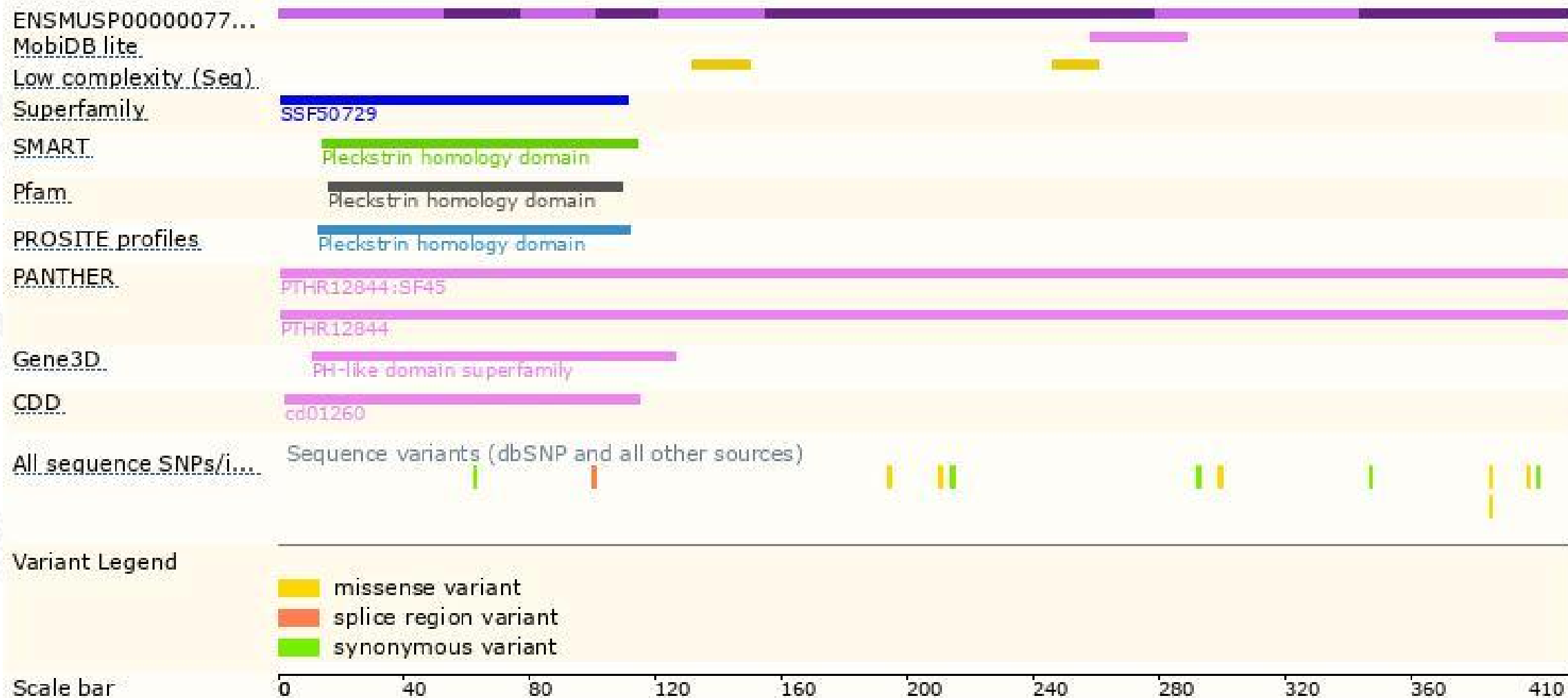
The strategy is based on the design of *Ipcef1-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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