

Igsf8 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Igsf8

Project type

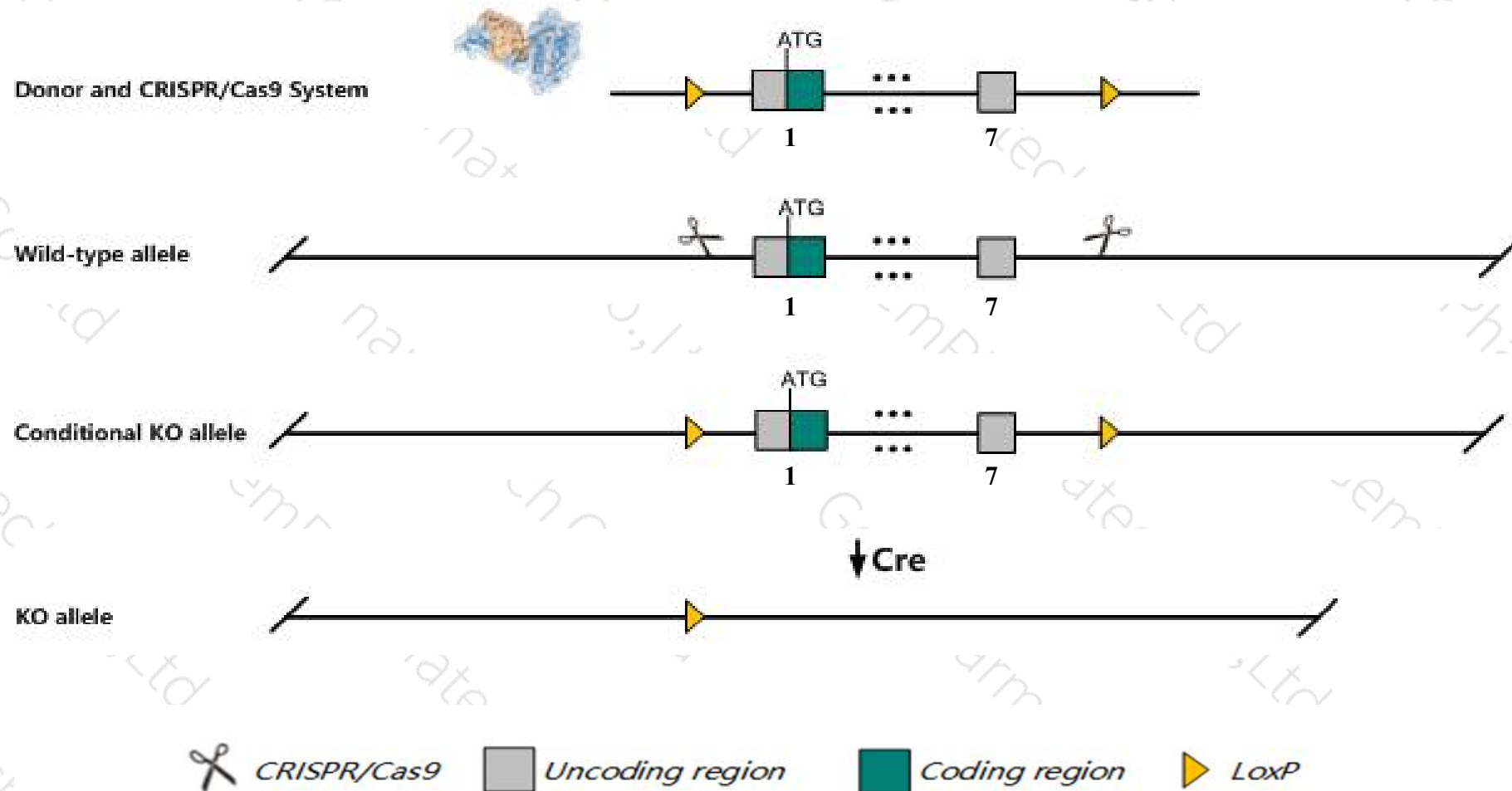
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Igsf8* gene. The schematic diagram is as follows:



Technical routes

- The *Igsf8* gene has 8 transcripts. According to the structure of *Igsf8* gene, exon1-exon7 of *Igsf8-201* (ENSMUST00000039506.14) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Igsf8* 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.

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit normal female fertility with no detectable fertilization defects in vitro or in vivo.
- The *Igsf8* gene is located on the Chr1. 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)

Igsf8 immunoglobulin superfamily, member 8 [Mus musculus (house mouse)]

Gene ID: 140559, updated on 7-Apr-2019

Summary



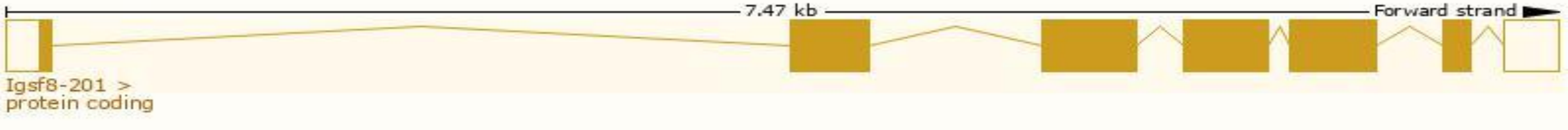
Official Symbol	Igsf8 provided by MGI
Official Full Name	immunoglobulin superfamily, member 8 provided by MGI
Primary source	MGI:MGI:2154090
See related	Ensembl:ENSMUSG00000038034
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	ESTM34, EWI-2, KCT-4, PGRL
Expression	Ubiquitous expression in cortex adult (RPKM 65.6), ovary adult (RPKM 59.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

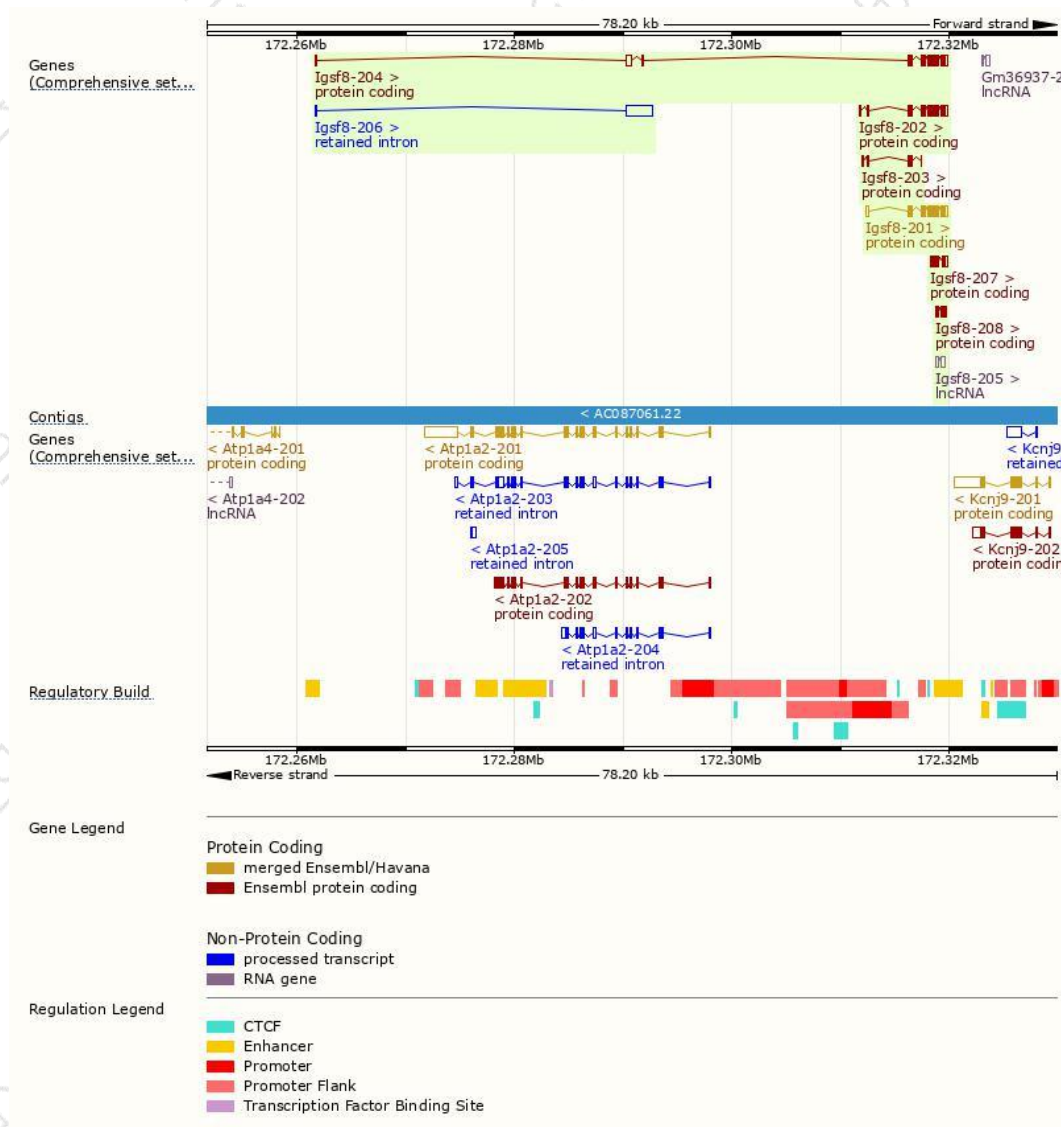
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Igsf8-201	ENSMUST00000039506.14	2278	611aa	Protein coding	CCDS15511	A0A0R4J117	TSL:1 GENCODE basic APPRIS P1
Igsf8-202	ENSMUST00000085912.9	2182	611aa	Protein coding	CCDS15511	A0A0R4J117	TSL:5 GENCODE basic APPRIS P1
Igsf8-204	ENSMUST00000139528.7	2866	548aa	Protein coding	-	G3UYZ1	TSL:2 GENCODE basic
Igsf8-207	ENSMUST00000194505.1	893	208aa	Protein coding	-	A0A0A6YWK7	CDS 5' incomplete TSL:3
Igsf8-203	ENSMUST00000128508.7	623	149aa	Protein coding	-	D3Z4Q8	CDS 3' incomplete TSL:5
Igsf8-208	ENSMUST00000195659.1	467	107aa	Protein coding	-	A0A0A6YVX9	CDS 5' incomplete TSL:3
Igsf8-206	ENSMUST00000155363.7	2650	No protein	Retained intron	-	-	TSL:1
Igsf8-205	ENSMUST00000150598.1	448	No protein	lncRNA	-	-	TSL:2

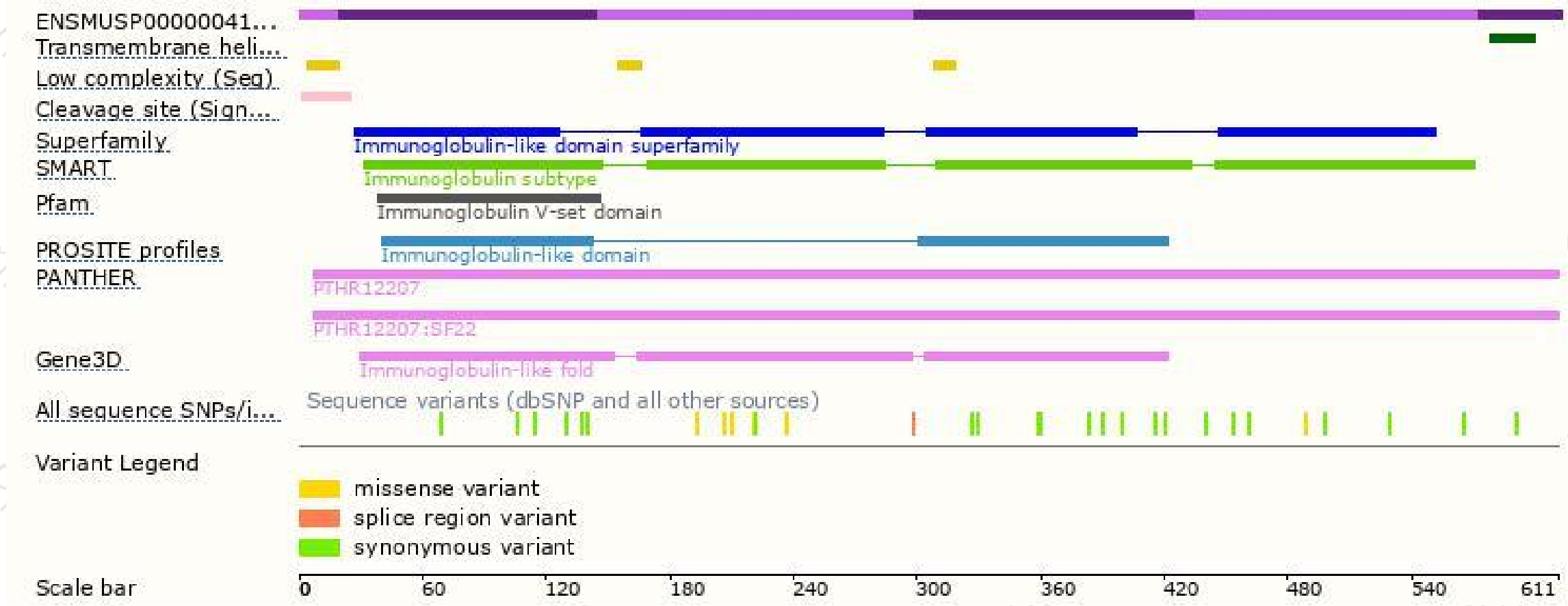
The strategy is based on the design of *Igsf8-201* transcript,The transcription is shown below



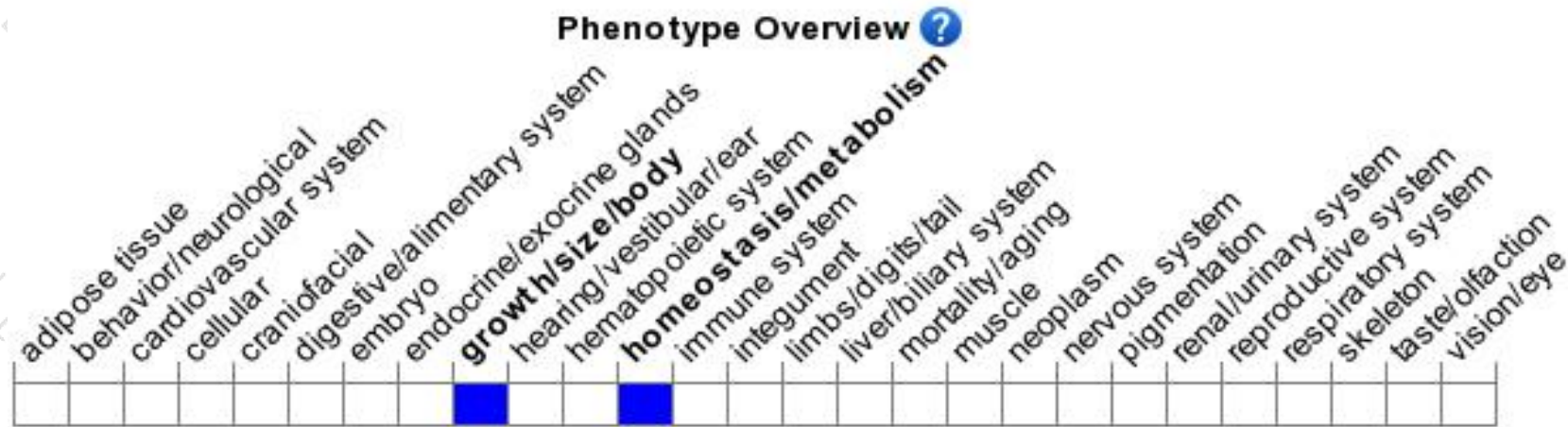
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a knock-out allele exhibit normal female fertility with no detectable fertilization defects in vitro or in vivo.

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

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