

Igsf3 Cas9-CKO Strategy

Designer: Daohua Xu

Reviewer: Huimin Su

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Project Overview

Project Name

Igsf3

Project type

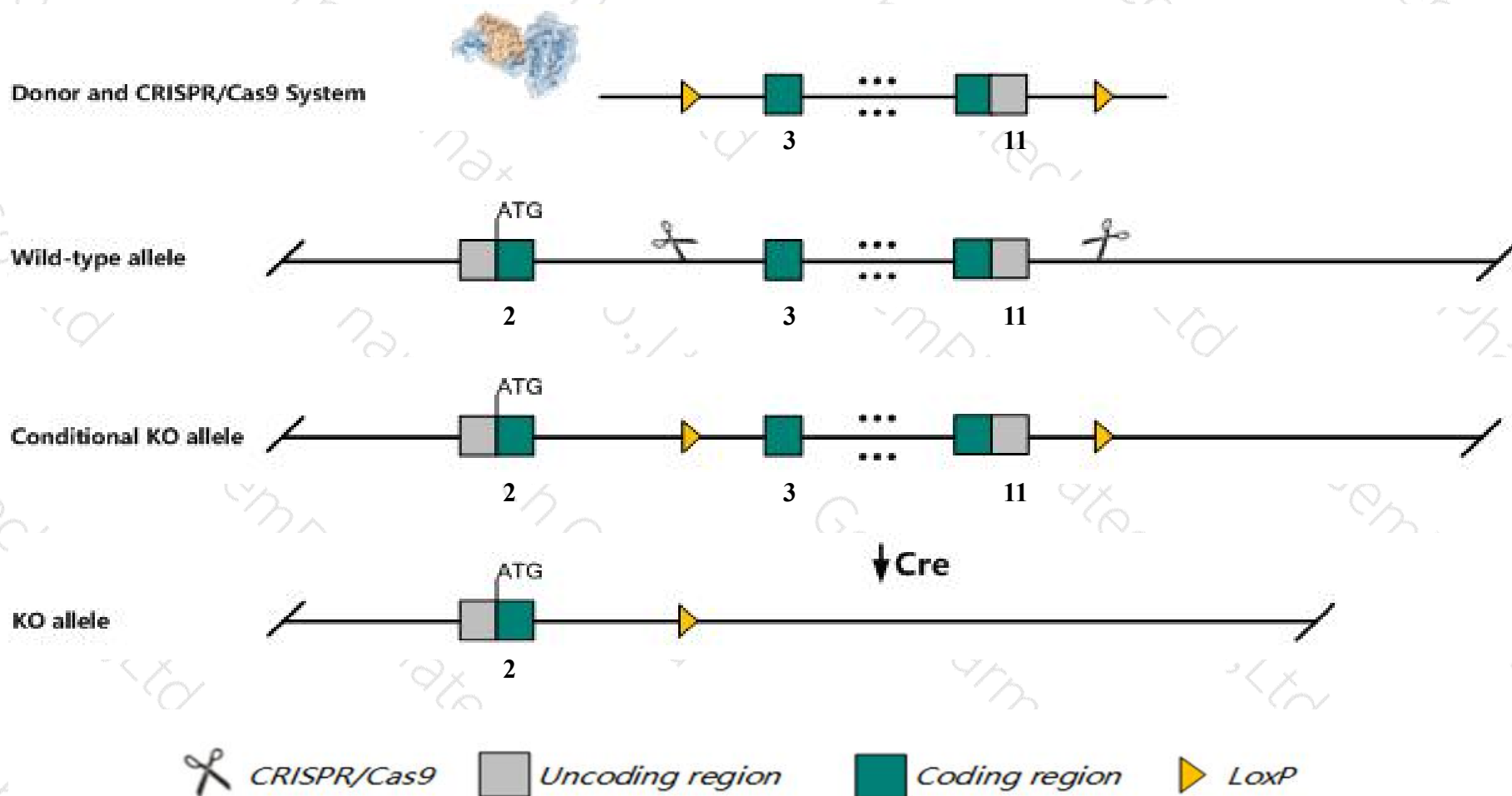
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Igsf3* gene. The schematic diagram is as follows:



- The *Igsf3* gene has 3 transcripts. According to the structure of *Igsf3* gene, exon3-exon11 of *Igsf3-201* (ENSMUST00000043983.10) transcript is recommended as the knockout region. The region contains 3542bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Igsf3* 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 KO region contains functional region of the *Gm42538* gene. Knockout the region may affect the function of *Gm42538* gene.
- The *Igsf3* gene is located on the Chr3. 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)

Igsf3 immunoglobulin superfamily, member 3 [Mus musculus (house mouse)]

Gene ID: 78908, updated on 13-Mar-2020

Summary



Official Symbol	Igsf3 provided by MGI
Official Full Name	immunoglobulin superfamily, member 3 provided by MGI
Primary source	MGI:MGI:1926158
See related	Ensembl:ENSMUSG00000042035
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	1700016K10Rik, 2810035F16Rik, 4833439O17Rik, mKIAA0466
Expression	Ubiquitous expression in ovary adult (RPKM 8.2), limb E14.5 (RPKM 8.0) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

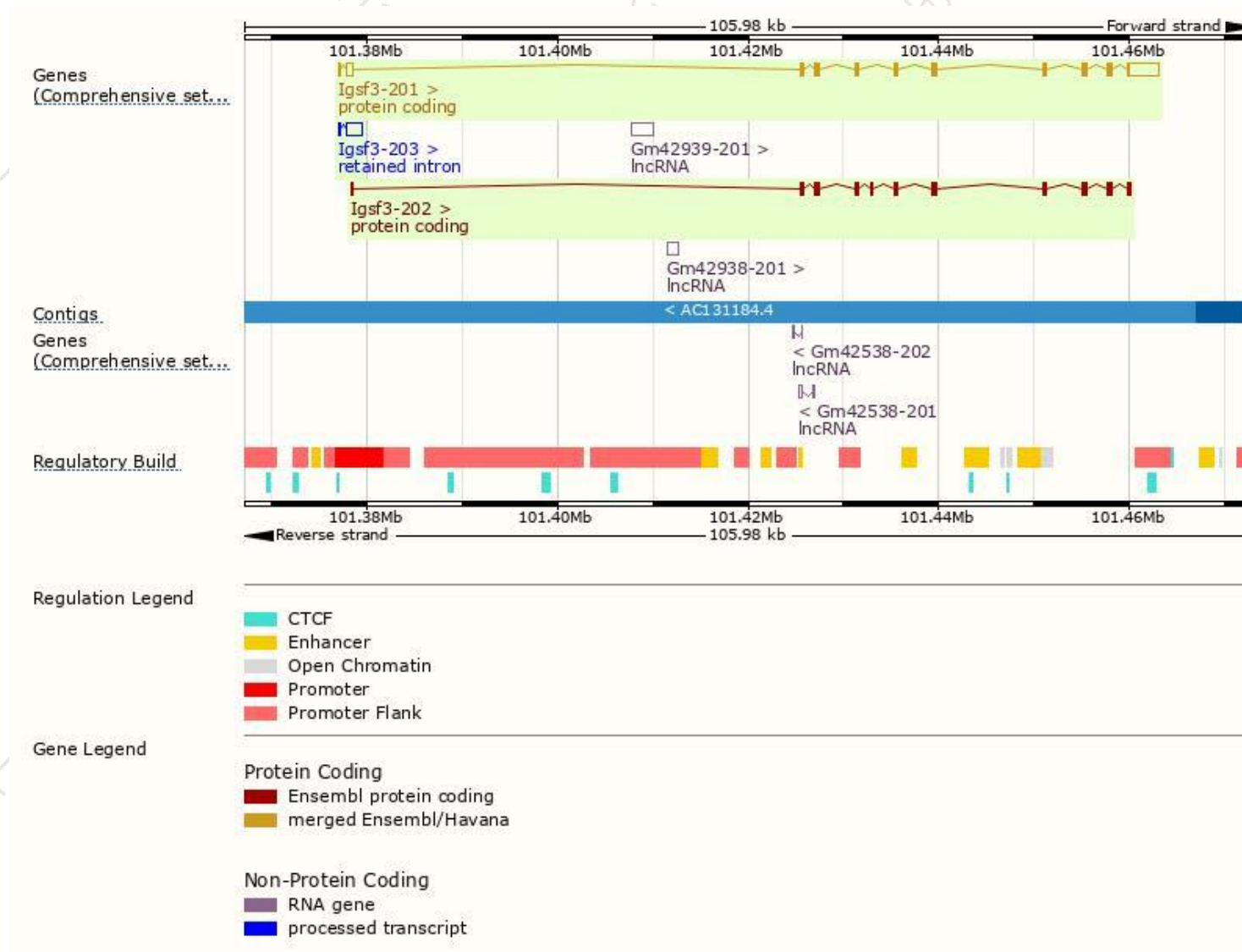
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Igsf3-201	ENSMUST00000043983.10	7371	1194aa	Protein coding	CCDS17682	Q6ZQA6	TSL:1 GENCODE basic APPRIS P2
Igsf3-202	ENSMUST00000195164.1	3876	1214aa	Protein coding	-	A0A0A6YX40	TSL:5 GENCODE basic APPRIS ALT2
Igsf3-203	ENSMUST00000198995.4	1855	No protein	Retained intron	-	-	TSL:1

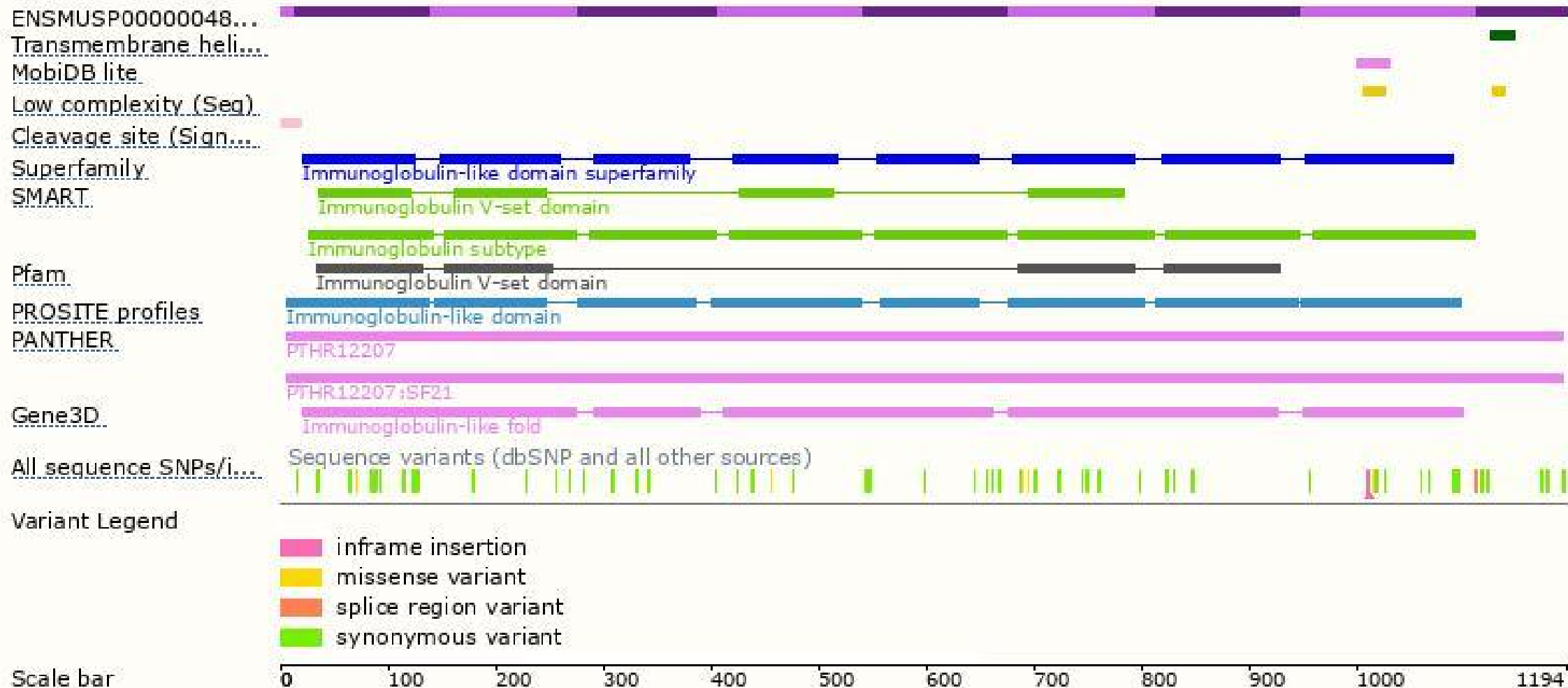
The strategy is based on the design of *Igsf3-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

