

Igfbpl1 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Igfbpl1

Project type

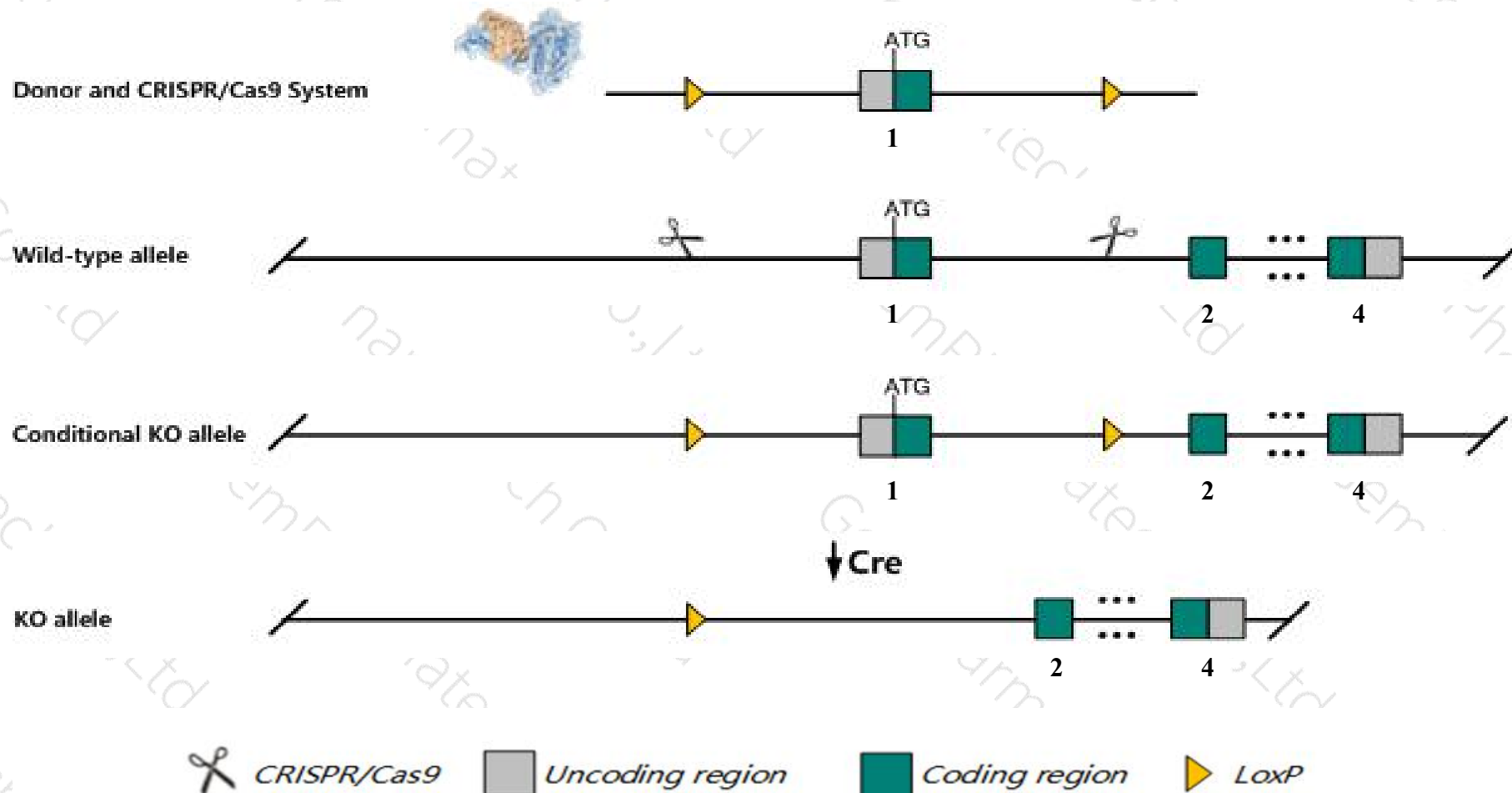
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Igfbp1* gene. The schematic diagram is as follows:



Technical routes

- The *Igfbpl1* gene has 2 transcripts. According to the structure of *Igfbpl1* gene, exon1 of *Igfbpl1-201* (ENSMUST00000044297.6) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Igfbpl1* 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 *Igfbpl1* gene is located on the Chr4. 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)

Igfbp1 insulin-like growth factor binding protein-like 1 [*Mus musculus* (house mouse)]

Gene ID: 75426, updated on 13-Mar-2020

Summary

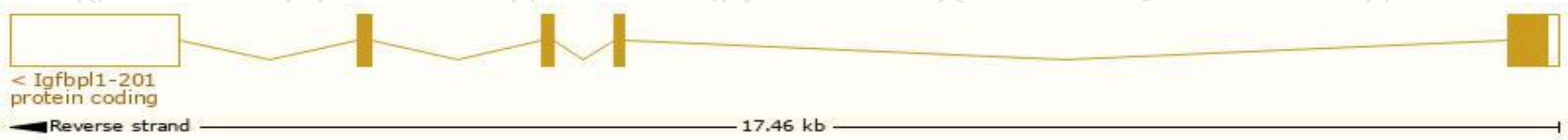
Official Symbol	Igfbp1 provided by MGI
Official Full Name	insulin-like growth factor binding protein-like 1 provided by MGI
Primary source	MGI:MGI:1933198
See related	Ensembl:ENSMUSG00000035551
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	IGFBPL; 2810011G06Rik; 2810453O06Rik
Expression	Biased expression in whole brain E14.5 (RPKM 101.0), CNS E14 (RPKM 96.5) and 2 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

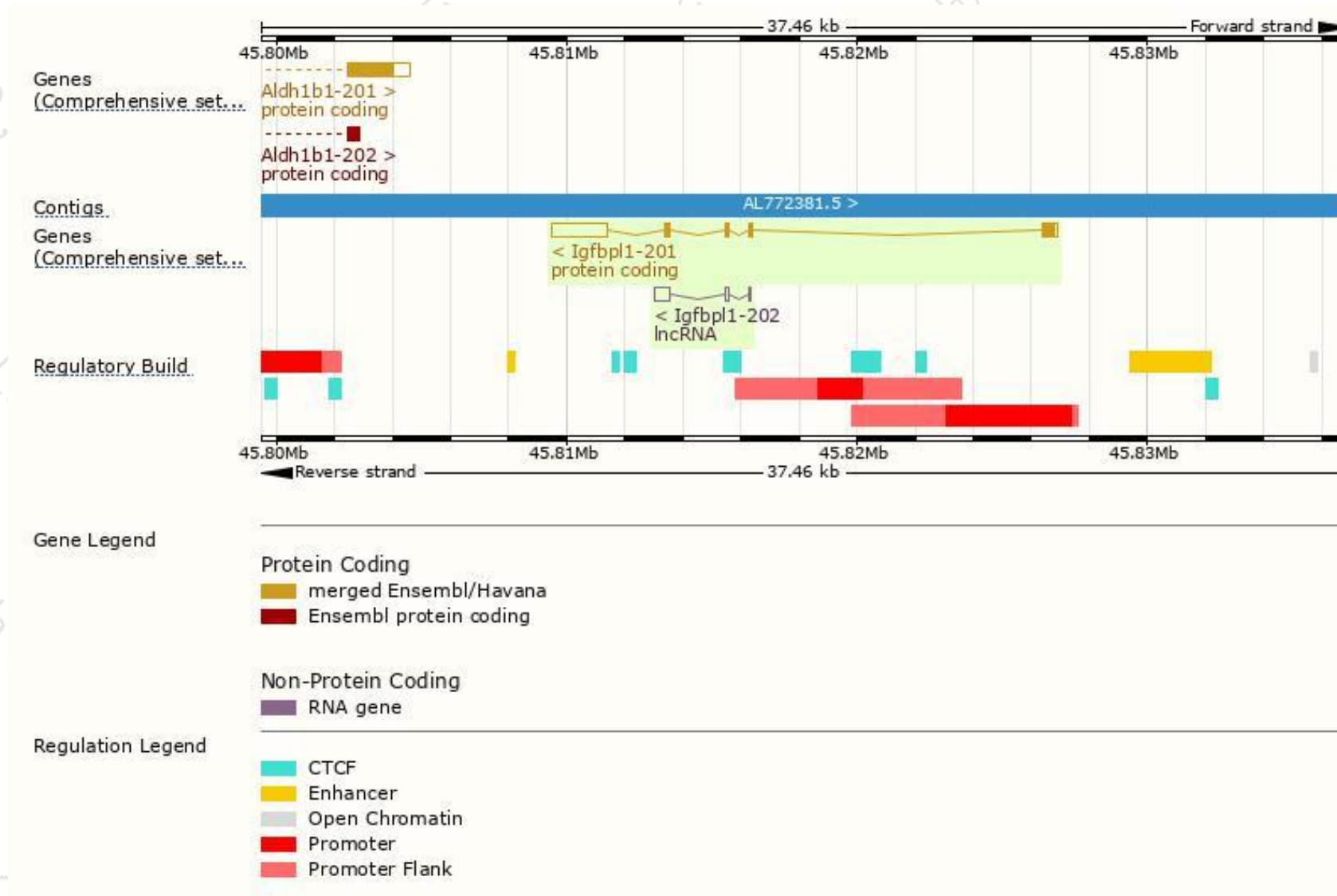
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Igfbpl1-201	ENSMUST00000044297.6	2864	270aa	Protein coding	CCDS38756	Q80W15	TSL:1 GENCODE basic APPRIS P1
Igfbpl1-202	ENSMUST00000145102.1	747	No protein	Processed transcript	-	-	TSL:3

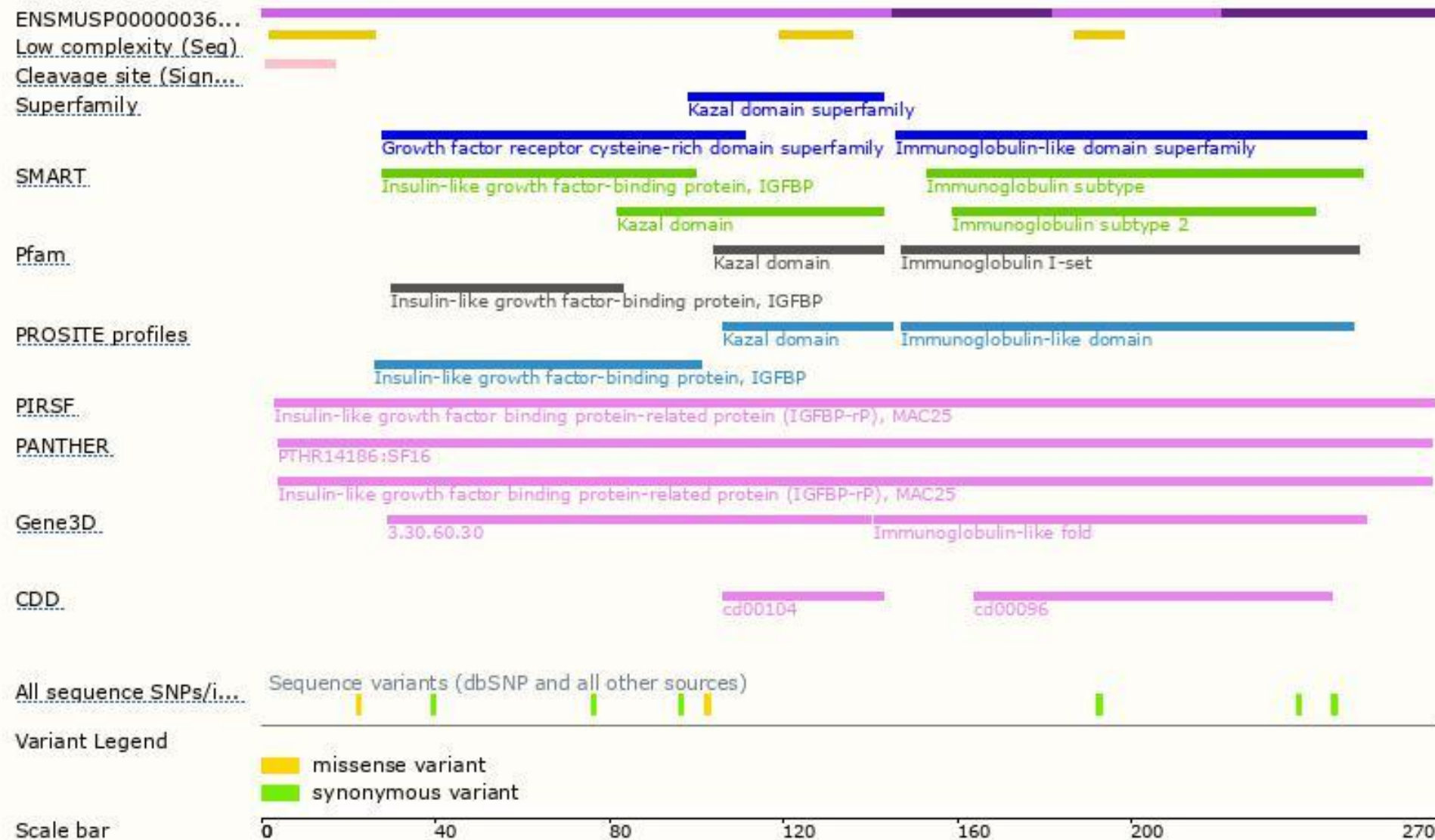
The strategy is based on the design of *Igfbpl1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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