Iglon5 Cas9-CKO Strategy

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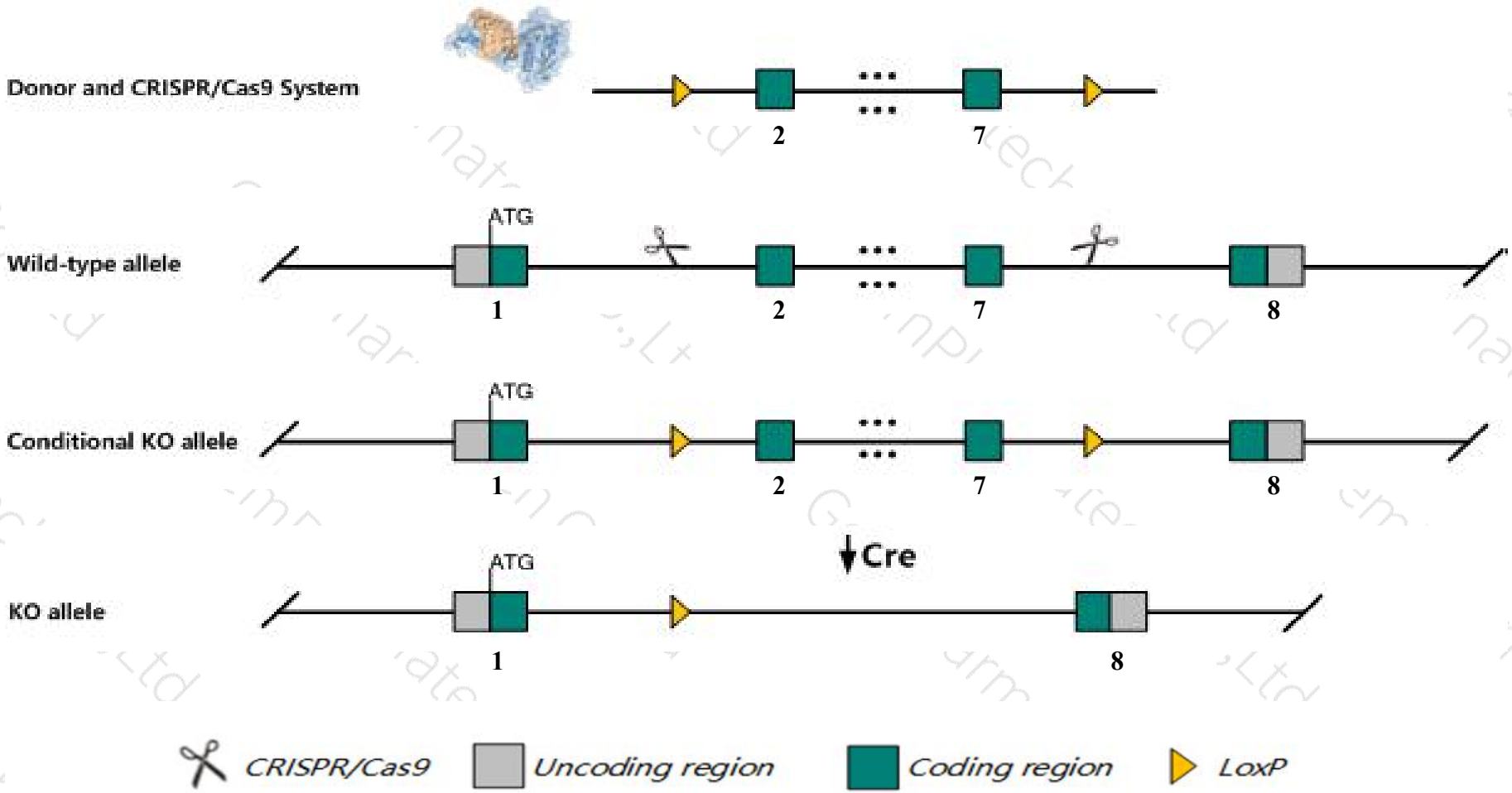
Project Overview

Project Name	***Iglon5***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Iglon5* gene. The schematic diagram is as follows:



Technical routes

- The *Iglon5* gene has 2 transcripts. According to the structure of *Iglon5* gene, exon2-exon7 of *Iglon5-201* (ENSMUST00000107974.2) transcript is recommended as the knockout region.The region contains 843bp coding sequence.Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Iglon5* 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 most of the coding sequence will be deleted but this region is not frameshift.

➢The *Iglon5* gene is located on the Chr7. 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）

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Iglon5 IgLON family member 5 [*Mus musculus* (house mouse)]

Gene ID: 210094, updated on 12-Aug-2019

Summary

Official Symbol	Iglon5 provided by MGI
Official Full Name	IgLON family member 5 provided by MGI
Primary source	MGI:MGI:2686277
See related	Ensembl:ENSMUSG00000013367
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	Gm1431; A230106M20Rik
Expression	Biased expression in whole brain E14.5 (RPKM 27.1), CNS E14 (RPKM 23.2) and 14 other tissues See more
Orthologs	human all

Genomic context

Location: 7; 7 B3

See Iglon5 in Genome Data Viewer

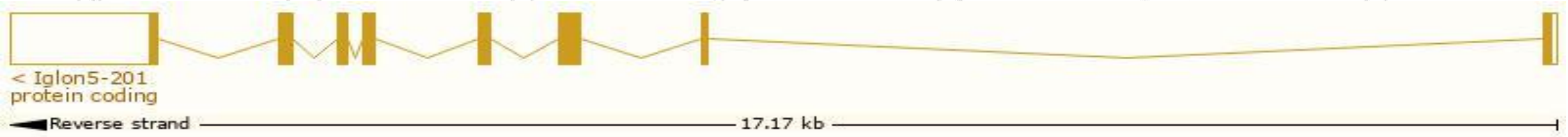
Exon count: 8

Transcript information（Ensembl）

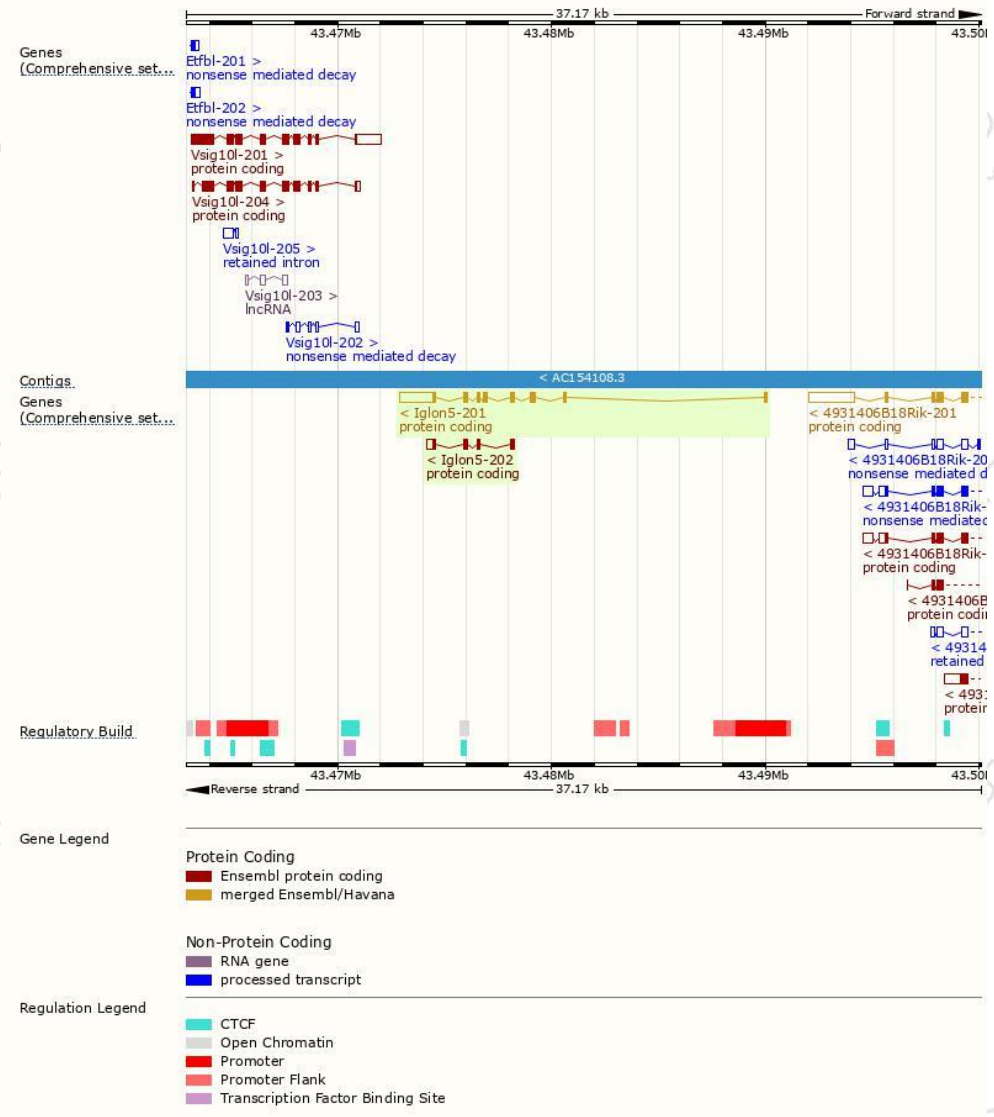
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Iglon5-201	ENSMUST00000107974.2	2622	336aa	Protein coding	CCDS52223	Q8HW98	TSL:1 GENCODE basic APPRIS P1
Iglon5-202	ENSMUST00000206336.1	762	161aa	Protein coding	-	A0A0U1RP50	CDS 5' incomplete TSL:3

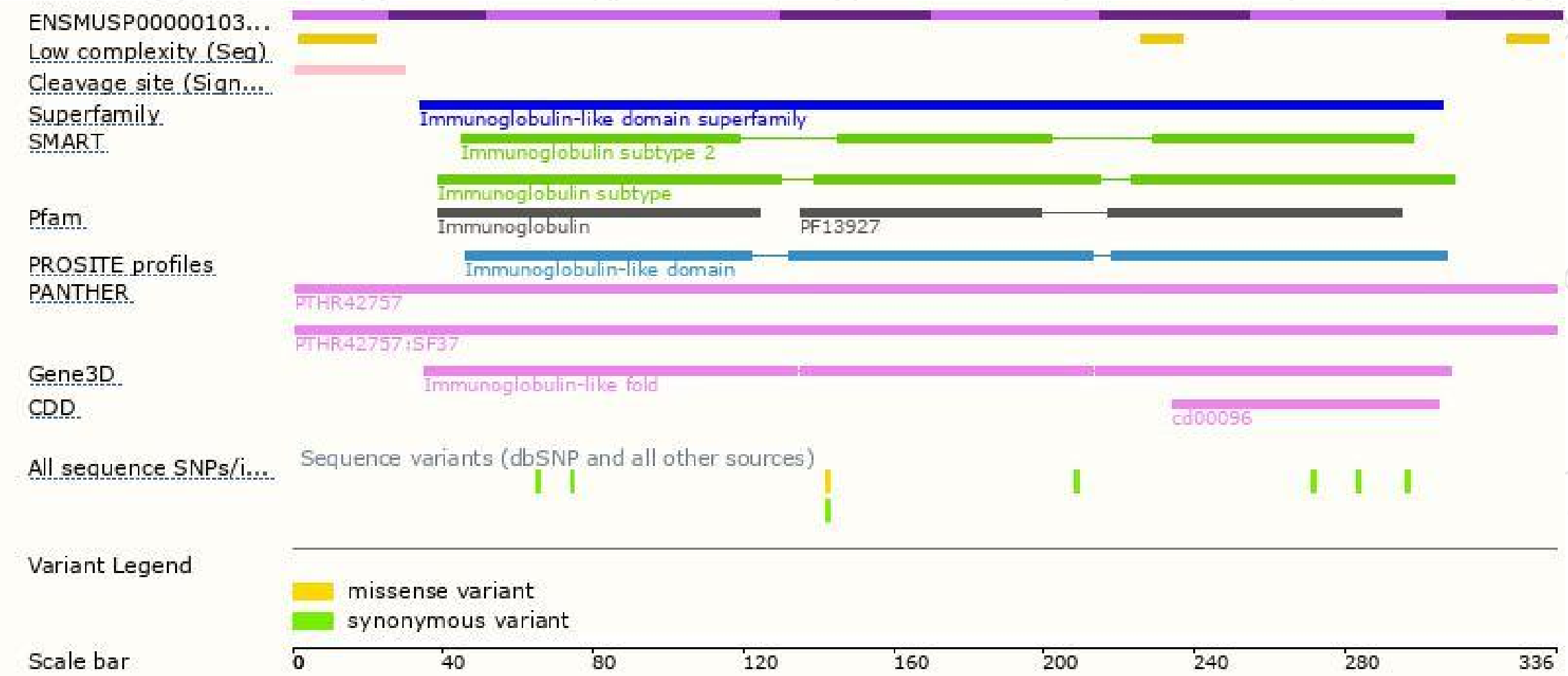
The strategy is based on the design of *Iglon5-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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