

Il1r2 Cas9-KO Strategy

Designer:

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Reviewer:

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Design Date:

2018-6-22

Project Overview

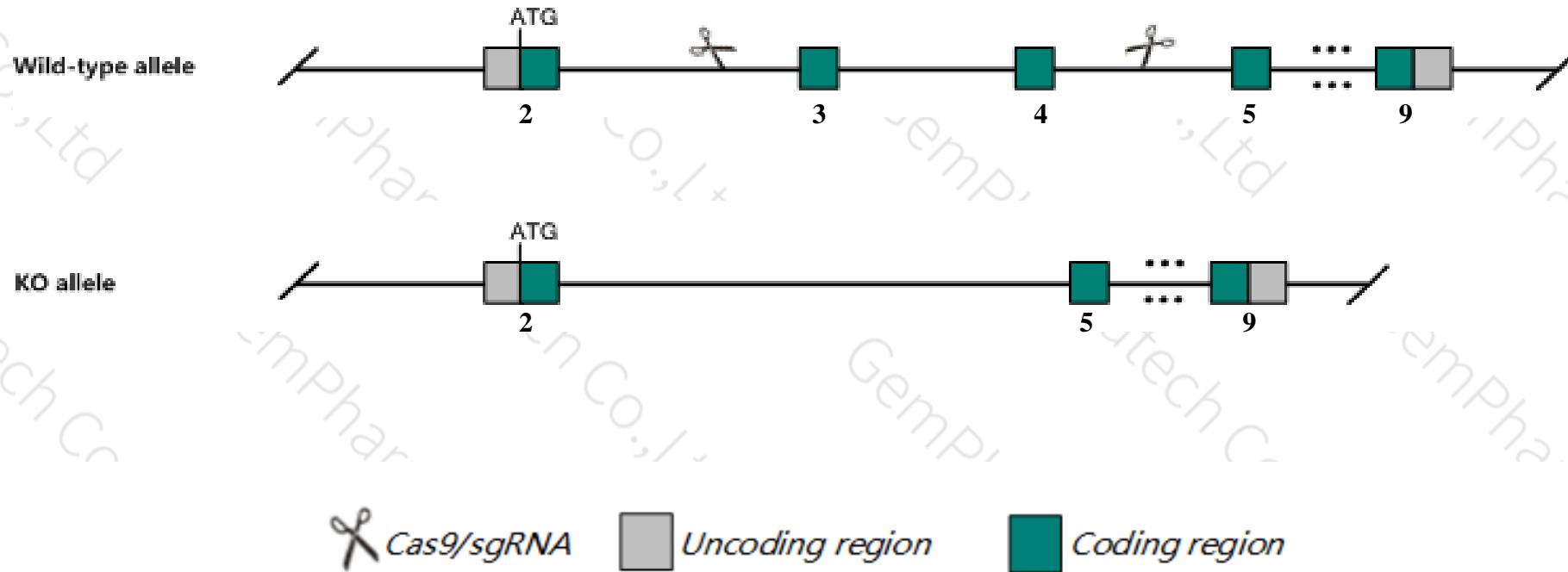
| | |
|---------------------|---------------------|
| Project Name | <i>Il1r2</i> |
|---------------------|---------------------|

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|---------------------|----------------|
| Project type | Cas9-KO |
|---------------------|----------------|

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|--------------------------|--------------------|
| Strain background | C57BL/6JGpt |
|--------------------------|--------------------|

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Il1r2* gene. The schematic diagram is as follows:



- The *Il1r2* gene has 4 transcripts. According to the structure of *Il1r2* gene, exon3-exon4 of *Il1r2-201* (ENSMUST00000027243.12) transcript is recommended as the knockout region. The region contains 440bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Il1r2* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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.

- Transcript *Il1r2*-203 may not be affected.
- The *Il1r2* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Il1r2 interleukin 1 receptor, type II [*Mus musculus* (house mouse)]

Gene ID: 16178, updated on 12-Aug-2019

Summary



Official Symbol Il1r2 provided by [MGI](#)

Official Full Name interleukin 1 receptor, type II provided by [MGI](#)

Primary source [MGI:MGI:96546](#)

See related [Ensembl:ENSMUSG00000026073](#)

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 CD121b; Il1r-2

Expression Biased expression in placenta adult (RPKM 4.5), mammary gland adult (RPKM 1.6) and 7 other tissues [See more](#)

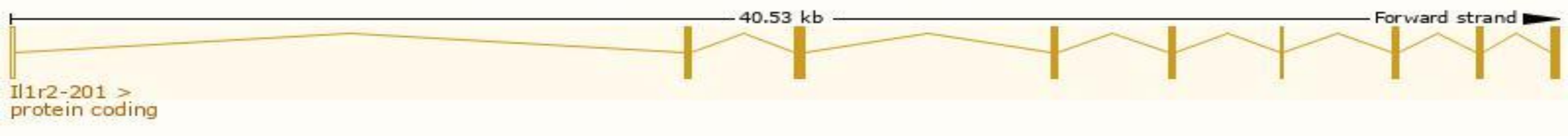
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

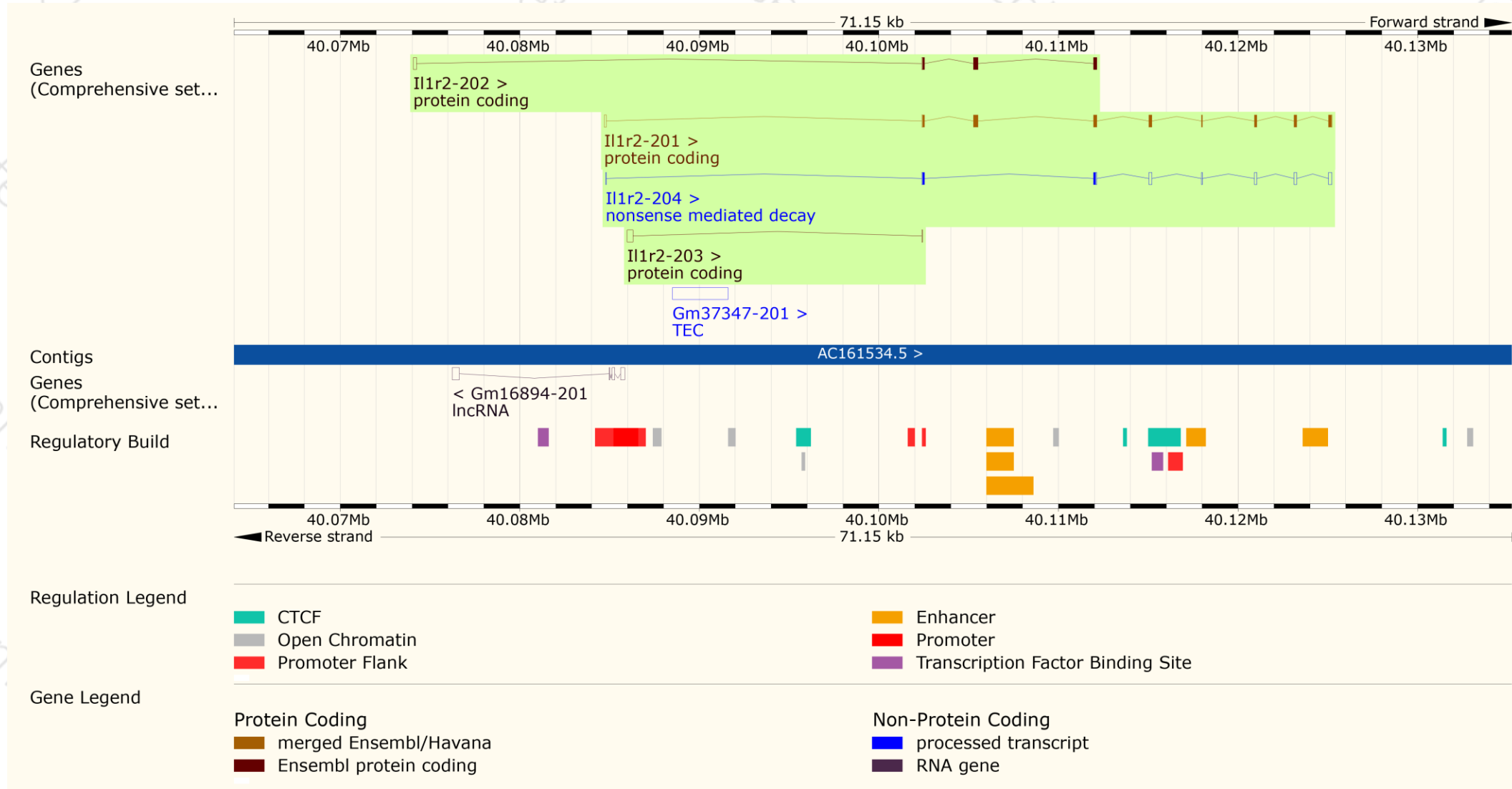
The gene has 4 transcripts,all transcripts are shown below:

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|-----------|---------------------------------------|------|-----------------------|-------------------------|---------------------------|-------------------------------|-------------------------------|
| Il1r2-201 | ENSMUST00000027243.12 | 1419 | 410aa | Protein coding | CCDS14909 | P27931 Q4FK69 | TSL:1 GENCODE basic APPRIS P1 |
| Il1r2-202 | ENSMUST00000191671.5 | 760 | 183aa | Protein coding | - | A0A0A6YX83 | CDS 3' incomplete TSL:3 |
| Il1r2-203 | ENSMUST00000194913.1 | 366 | 2aa | Protein coding | - | - | CDS 3' incomplete TSL:3 |
| Il1r2-204 | ENSMUST00000195770.1 | 1054 | 75aa | Nonsense mediated decay | - | A0A0A6YX23 | TSL:1 |

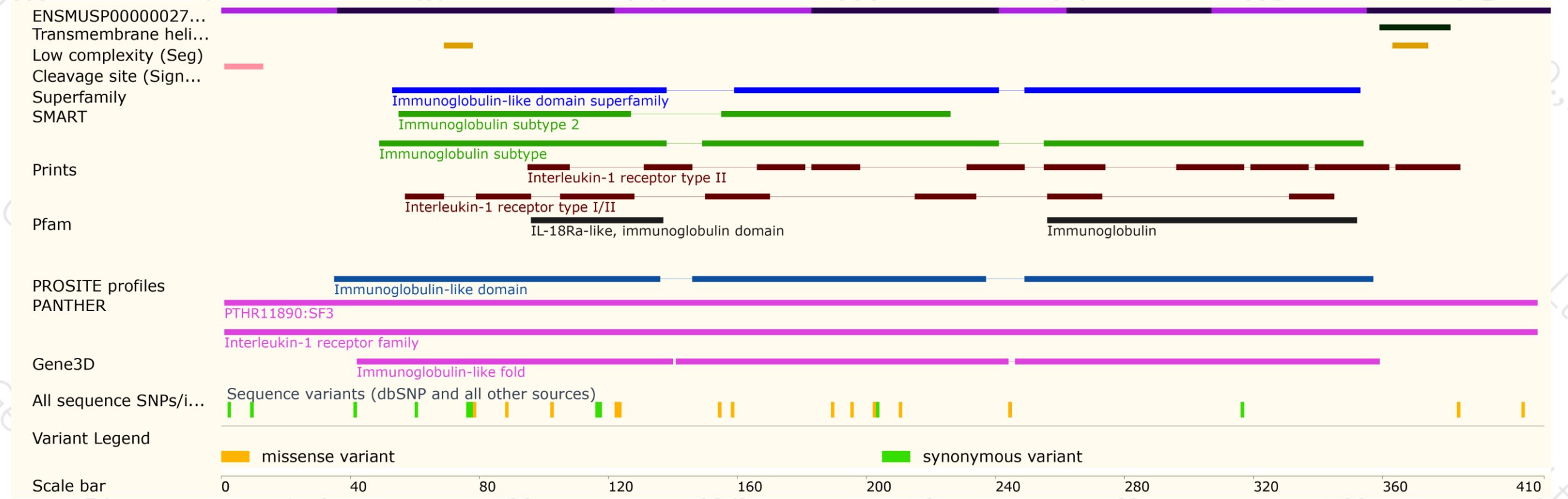
The strategy is based on the design of *Il1r2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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