

# ***Il1rl2*** Cas9-KO Strategy

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**Reviewer:**

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# Project Overview

**Project Name**

*Il1rl2*

**Project type**

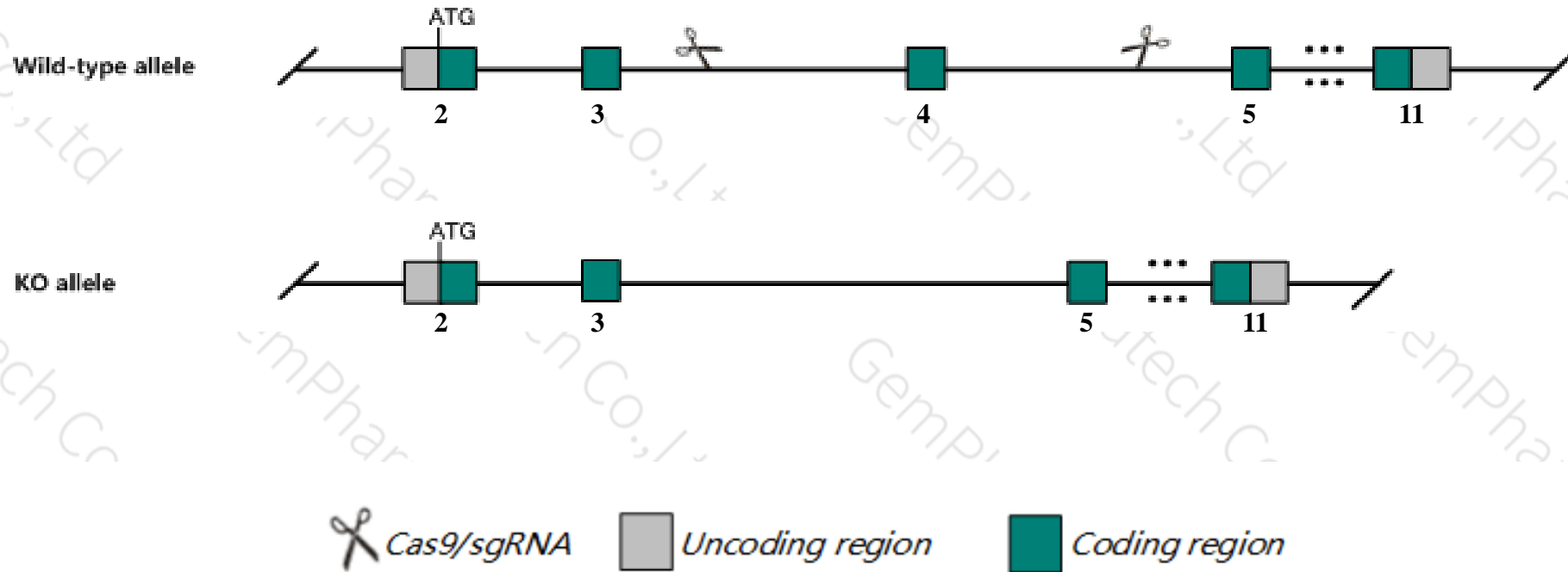
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Il1rl2* gene. The schematic diagram is as follows:



- The *Il1rl2* gene has 4 transcripts. According to the structure of *Il1rl2* gene, exon4 of *Il1rl2*-204 (ENSMUST00000194296.5) transcript is recommended as the knockout region. The region contains 199bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Il1rl2* 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.

- According to the existing MGI data, Mice homozygous for a reporter allele are viable and overtly normal and have normal skin in an unchallenged context.
- The *Il1rl2* 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)

## Il1rl2 interleukin 1 receptor-like 2 [ *Mus musculus* (house mouse) ]

Gene ID: 107527, updated on 14-Aug-2019

### Summary



Official Symbol	Il1rl2 provided by <a href="#">MGI</a>
Official Full Name	interleukin 1 receptor-like 2 provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:1913107</a>
See related	<a href="#">Ensembl:ENSMUSG00000070942</a>
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI481289; AW551444; IL-1Rrp2
Expression	Broad expression in mammary gland adult (RPKM 3.8), subcutaneous fat pad adult (RPKM 2.3) and 21 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

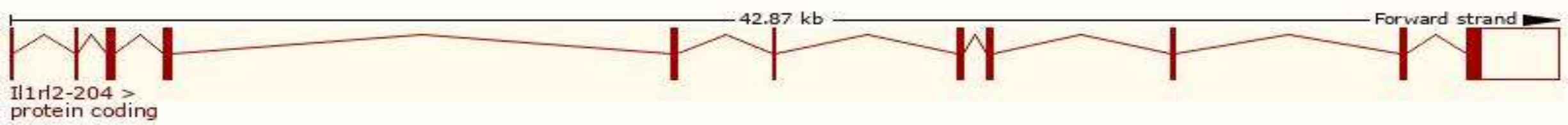


# Transcript information (Ensembl)

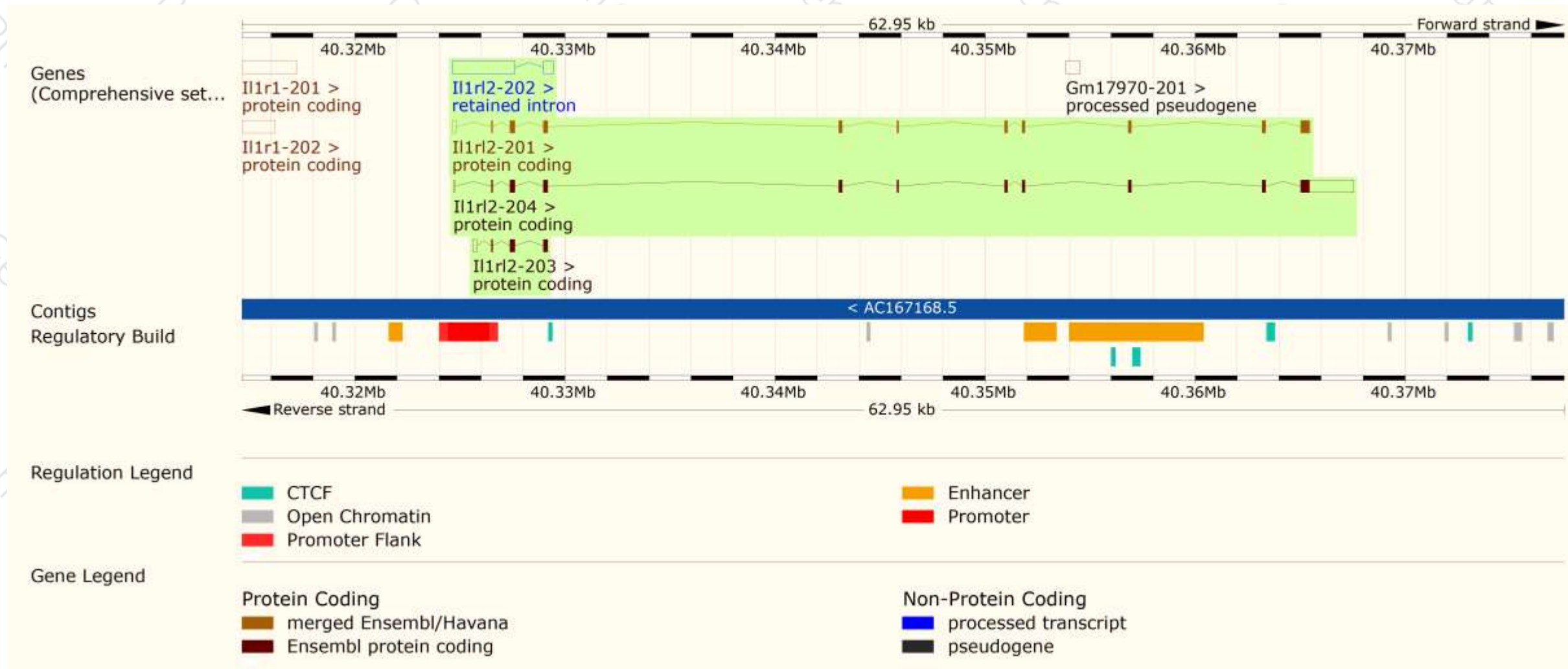
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Il1rl2-204	<a href="#">ENSMUST00000194296.5</a>	3908	<a href="#">574aa</a>	Protein coding	<a href="#">CCDS14910</a>	<a href="#">Q149G7 Q9ERS7</a>	TSL:1 GENCODE basic APPRIS P1
Il1rl2-201	<a href="#">ENSMUST00000095020.8</a>	1950	<a href="#">574aa</a>	Protein coding	<a href="#">CCDS14910</a>	<a href="#">Q149G7 Q9ERS7</a>	TSL:1 GENCODE basic APPRIS P1
Il1rl2-203	<a href="#">ENSMUST00000193388.1</a>	693	<a href="#">166aa</a>	Protein coding	-	<a href="#">A0A0A6YWD7</a>	CDS 3' incomplete TSL:1
Il1rl2-202	<a href="#">ENSMUST00000192551.1</a>	3468	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Il1rl2-204* transcript,The transcription is shown below



# Genomic location distribution



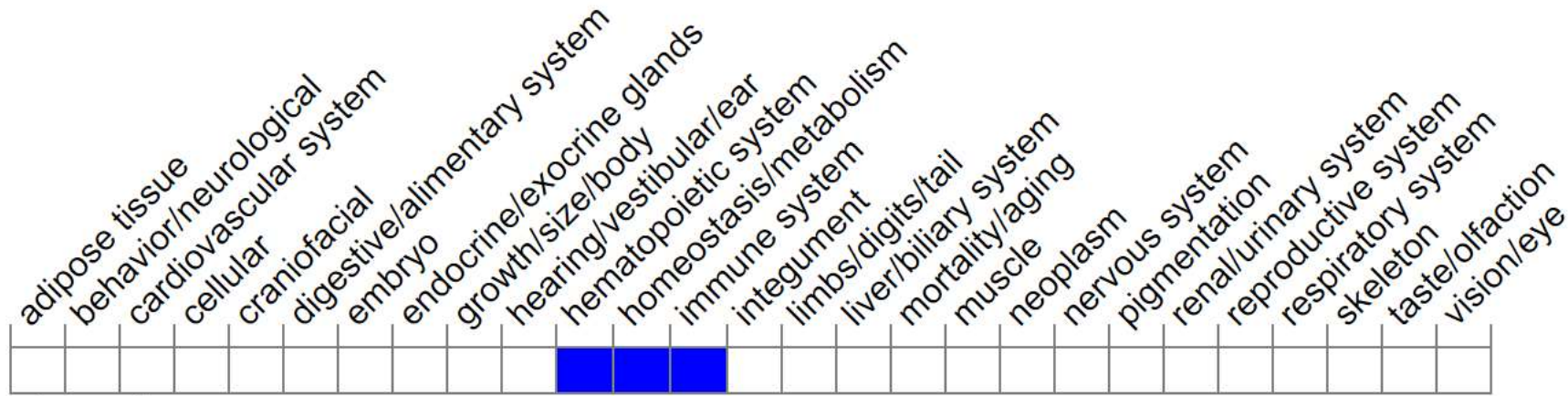


# Protein domain



# Mouse phenotype description(MGI)

## Phenotype Overview ?



*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 reporter allele are viable and overtly normal and have normal skin in an unchallenged context.

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

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