

Il4 Cas9-KO Strategy

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Project Overview

Project Name

Il4

Project type

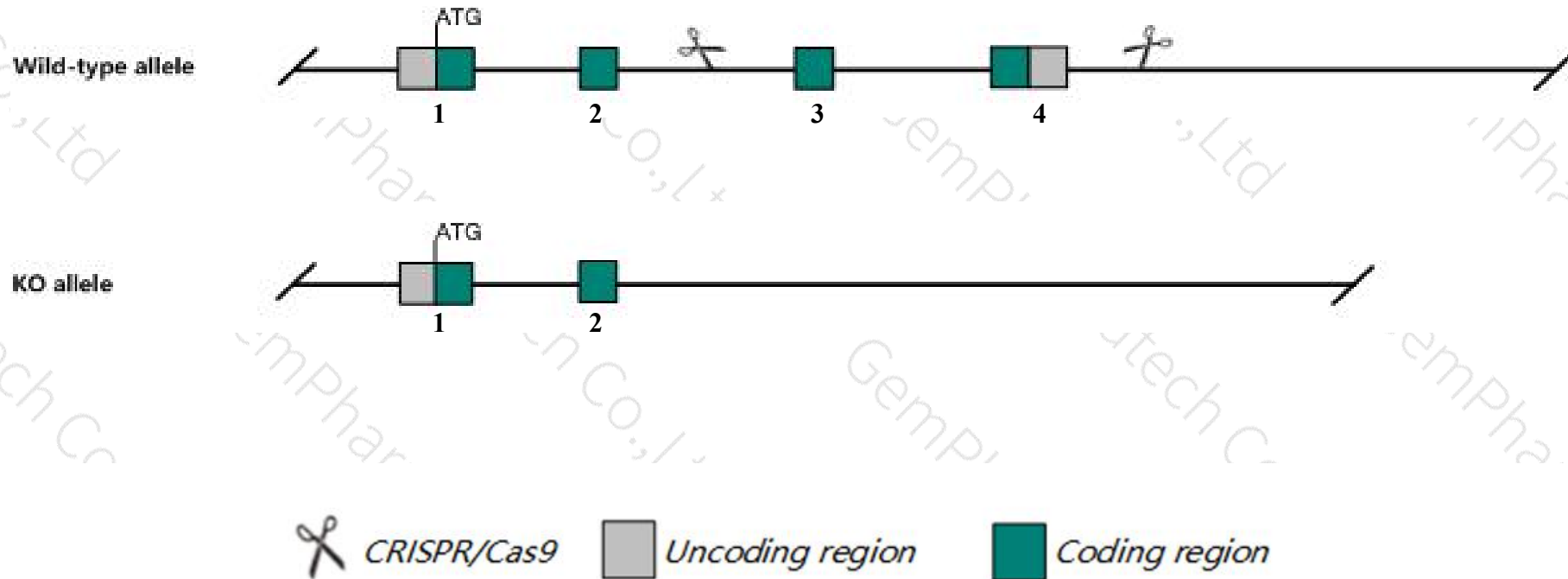
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Il4* gene. The schematic diagram is as follows:



- The *Il4* gene has 4 transcripts. According to the structure of *Il4* gene, exon3-exon4 of *Il4-201* (ENSMUST00000000889.6) transcript is recommended as the knockout region. The region contains 243bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Il4* gene. The brief process is as follows: CRISPR/Cas9 system we

- According to the existing MGI data, Mice homozygous for knock-out alleles exhibit defects in immune system morphology and physiology.
- The *Il4* gene is located on the Chr11. 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)

Il4 interleukin 4 [Mus musculus (house mouse)]

Gene ID: 16189, updated on 2-Apr-2019

Summary



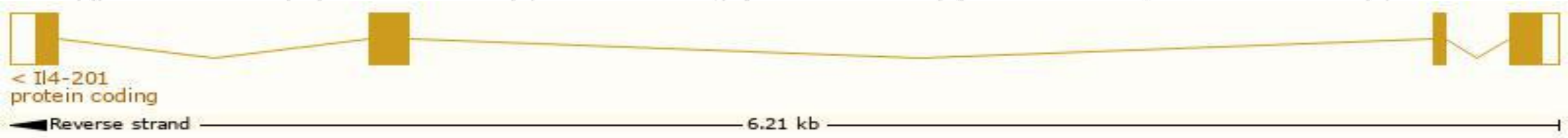
Official Symbol	Il4 provided by MGI
Official Full Name	interleukin 4 provided by MGI
Primary source	MGI:MGI:96556
See related	Ensembl:ENSMUSG00000000869
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BSF-1, Il-4
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information (Ensembl)

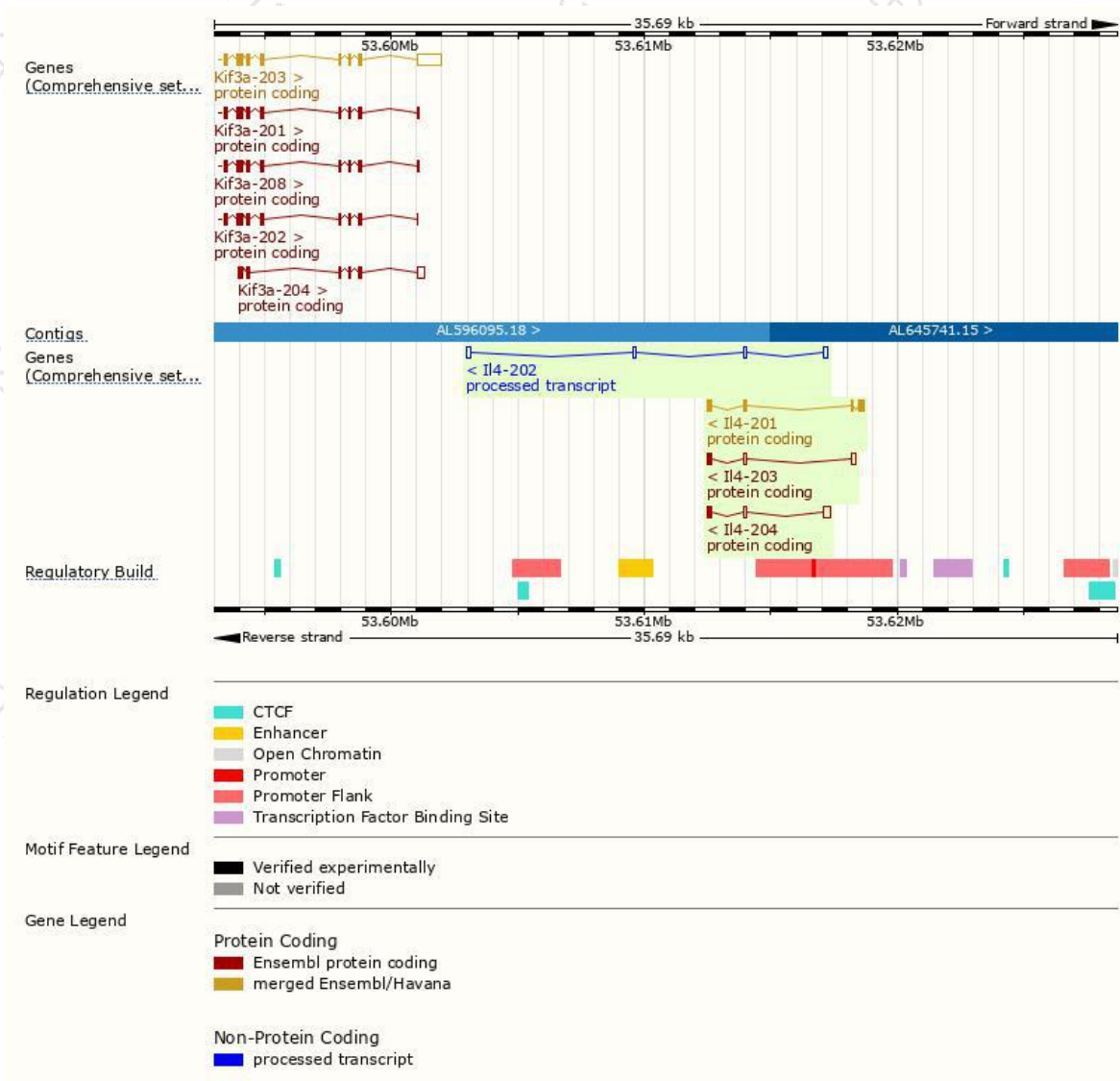
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
II4-201	ENSMUST00000000889.6	590	140aa	Protein coding	CCDS24682	P07750	TSL:1 GENCODE basic APPRIS P1
II4-204	ENSMUST00000150568.7	605	45aa	Protein coding	-	G3UXB0	TSL:1 GENCODE basic
II4-203	ENSMUST00000140684.7	530	45aa	Protein coding	-	G3UXB0	TSL:2 GENCODE basic
II4-202	ENSMUST00000127858.1	541	No protein	Processed transcript	-	-	TSL:3

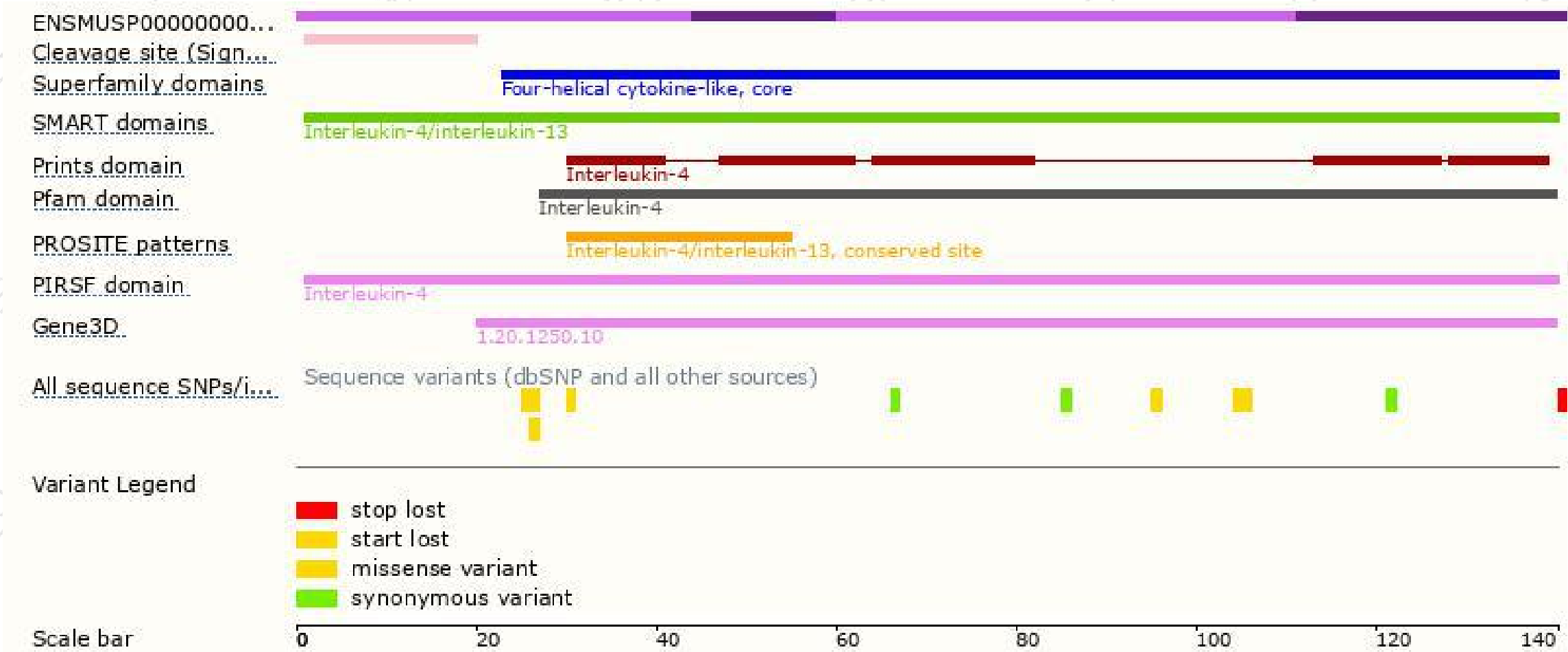
The strategy is based on the design of *Il4-201* transcript,The transcription is shown below



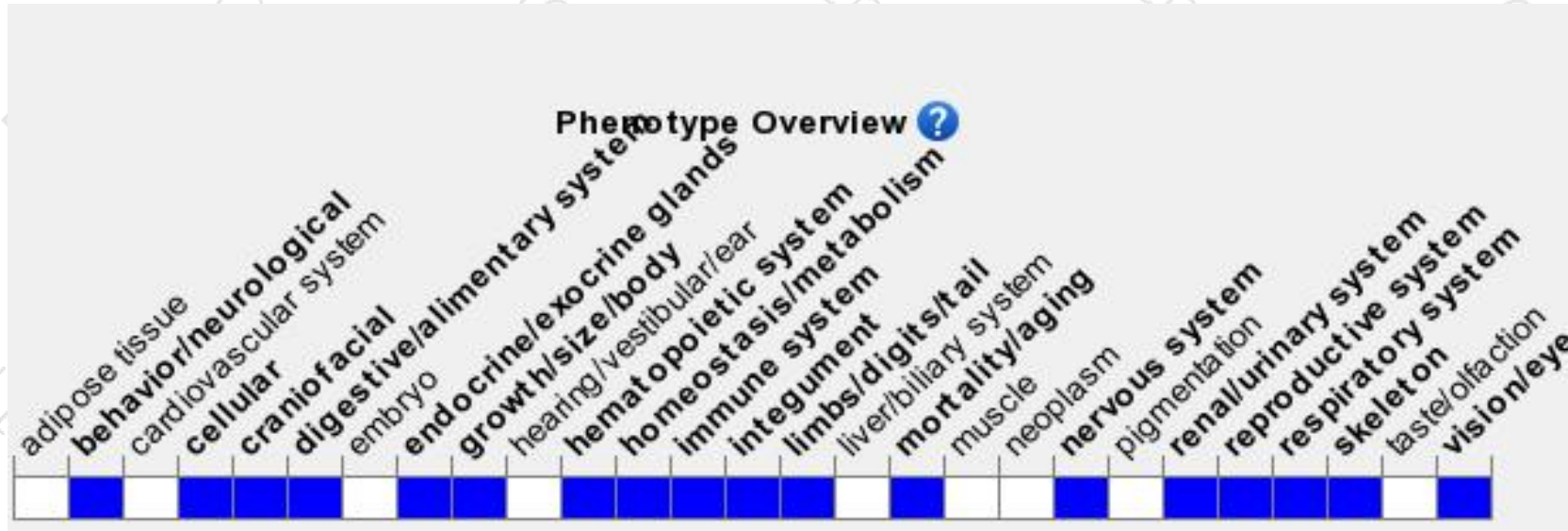
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



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 knock-out alleles exhibit defects in immune system morphology and physiology.

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

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