Il27 Cas9-KO Strategy

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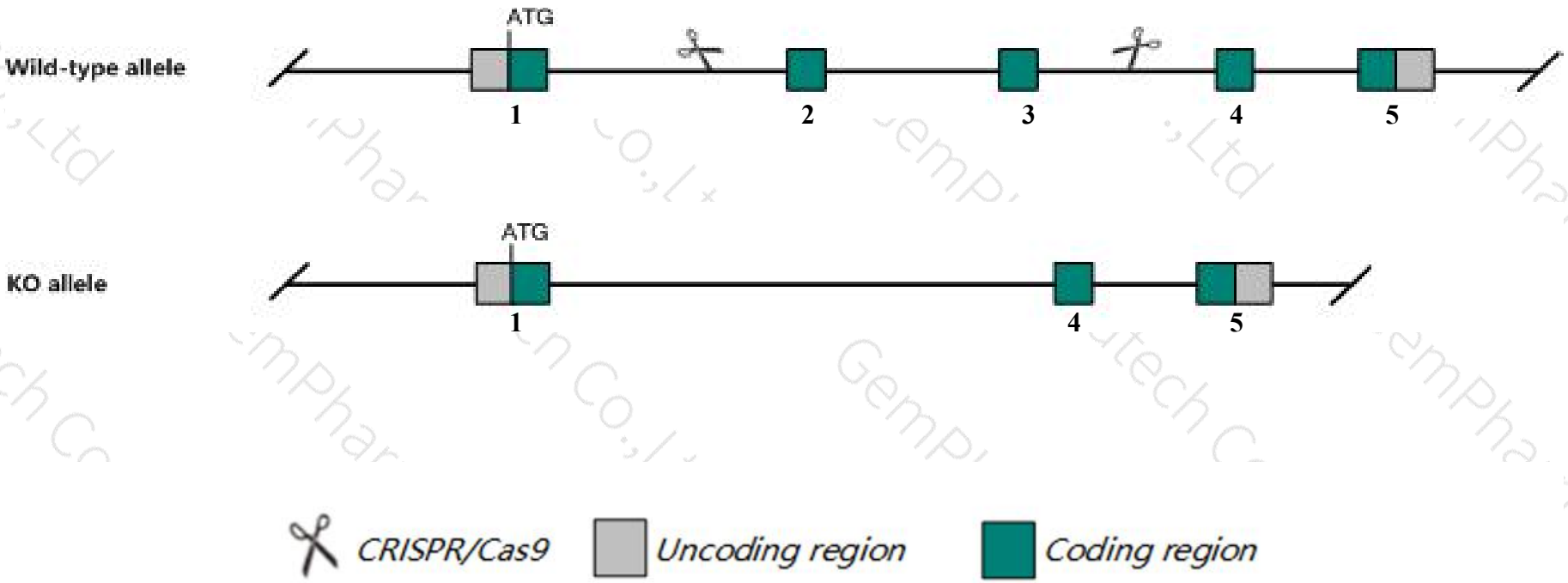
Project Overview

Project Name	***Il27***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Il27* gene. The schematic diagram is as follows:



Technical routes

➢ The *Il27* gene has 1 transcript. According to the structure of *Il27* gene, exon2-exon3 of *Il27-201* (ENSMUST00000058429.5) transcript is recommended as the knockout region.The region contains 260bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Il27* gene. The brief process is as follows: CRISPR/Cas9 system w

Notice

➢ According to the existing MGI data,Mice homozygous for a knock-out allele develop an exaggerated delayed-type hypersensitivity response and are more susceptible to experimental autoimmune encephalomyelitis due to the presence of an increased number of Th17 cells.

➢ The *Il27* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information（NCBI）

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Il27 interleukin 27 [Mus musculus (house mouse)]

Gene ID: 246779, updated on 12-Mar-2019

Summary

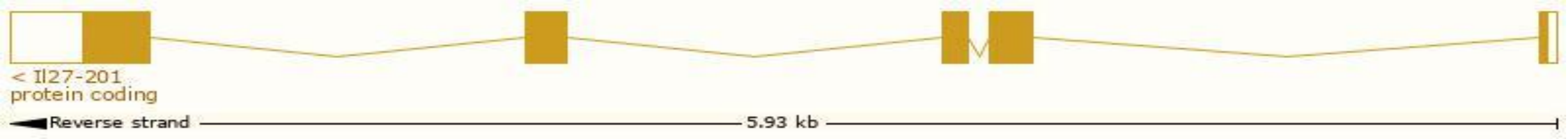
Official Symbol	Il27 provided by MGI
Official Full Name	interleukin 27 provided by MGI
Primary source	MGI:MGI:2384409
See related	Ensembl:ENSMUSG00000044701
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	IL-27, IL-27-A, IL-27p28, IL27-A, Il30, p28
Expression	Broad expression in genital fat pad adult (RPKM 5.8), spleen adult (RPKM 2.5) and 18 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

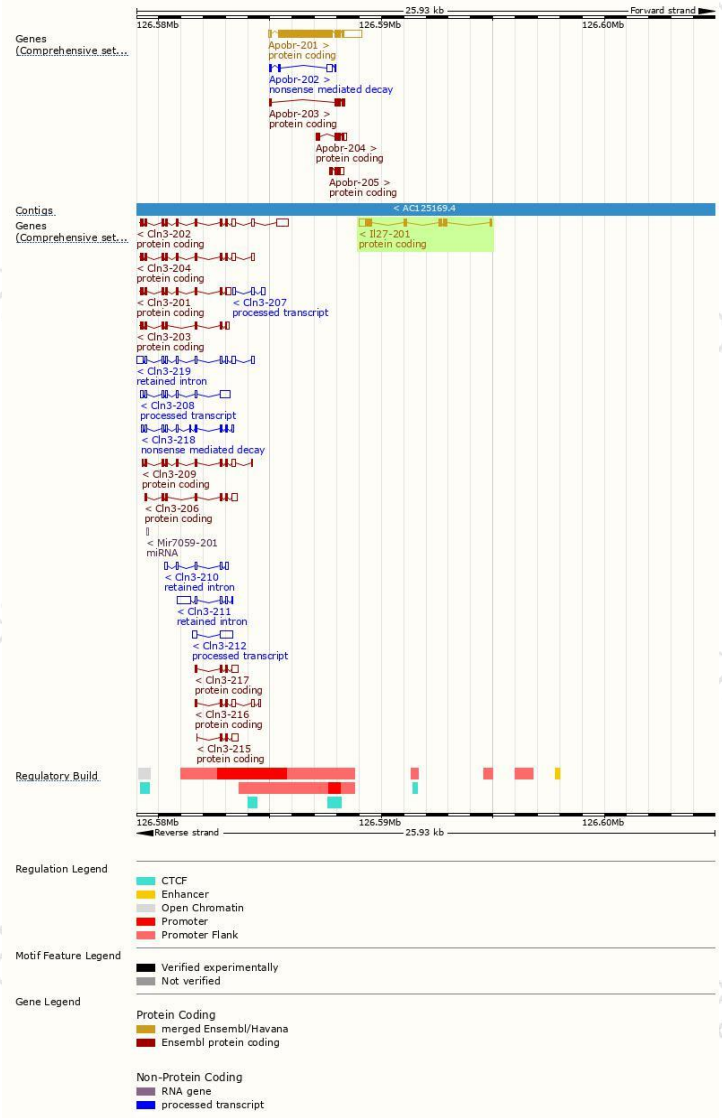
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Il27-201	ENSMUST00000058429.5	1021	234aa	Protein coding	CCDS21835	Q8K3I6	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *Il27-201* transcript,The transcription is shown below

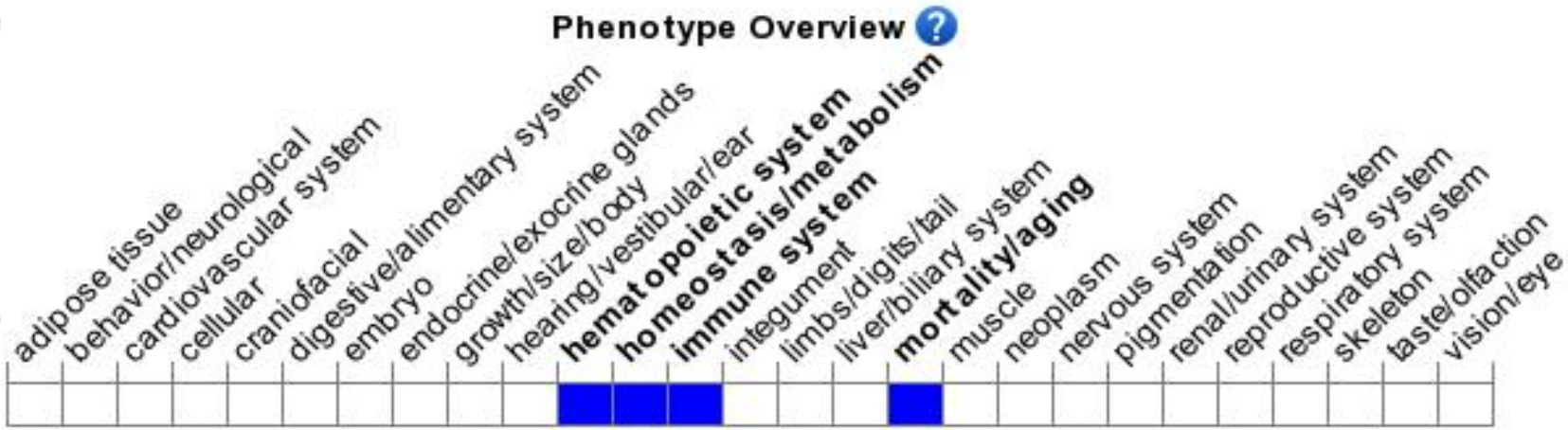


Genomic location distribution



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/).

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

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