Il17b Cas9-KO Strategy

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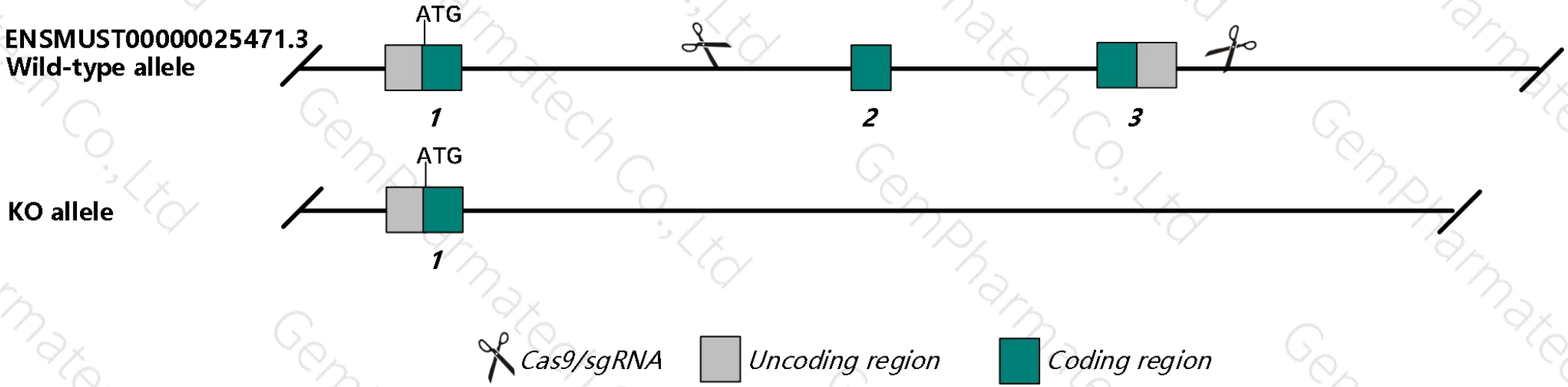
Project Overview

Project Name	***Il17b***
Project type	**Cas9-KO**
Strain background	**C57BL/6J**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Il17b* gene. The schematic diagram is as follows:



Technical routes

- The *Il17b* gene has 3 transcripts. According to the structure of *Il17b* gene, exon2-exon3 of *Il17b-201* (ENSMUST00000025471.3) transcript is recommended as the knockout region.The region contains most coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Il17b* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

Notice

➢According to the existing MGI data, Mice homozygous for a gene trap allele exhibit increased susceptibility to DDS-induced colitis and Citrobacter rodentium infection.

➢ The *Il17b* gene is located on the Chr18. 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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Il17b interleukin 17B [*Mus musculus* (house mouse)]

Gene ID: 56069, updated on 12-Aug-2019

Summary

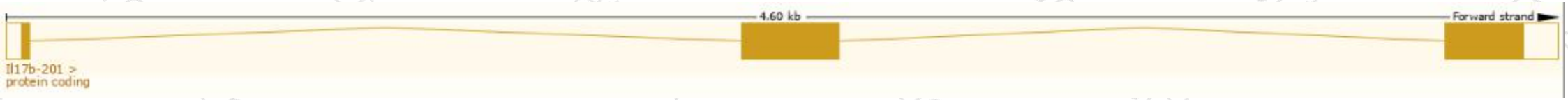
Official Symbol	Il17b provided by MGI
Official Full Name	interleukin 17B provided by MGI
Primary source	MGI:MGI:1928397
See related	Ensembl:ENSMUSG00000024578
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Zcyto7; 1110006O16Rik; 1700006N07Rik
Expression	Biased expression in limb E14.5 (RPKM 8.8), mammary gland adult (RPKM 3.7) and 1 other tissue See more
Orthologs	human all

Transcript information（Ensembl）

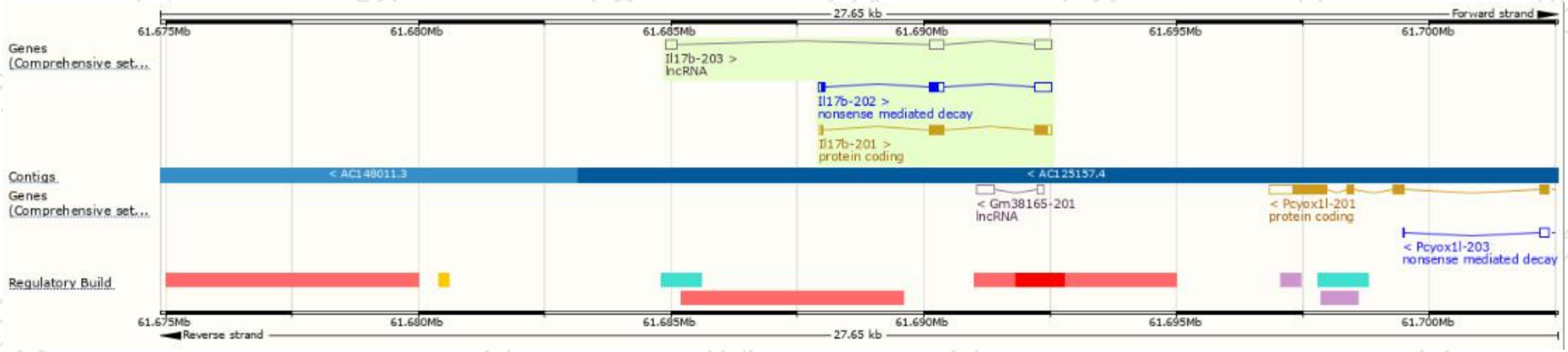
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Il17b-201	ENSMUST00000025471.3	693	180aa	Protein coding	CCDS29286	Q9QXT6	TSL:1 GENCODE basic APPRIS P1
Il17b-202	ENSMUST00000235713.1	748	74aa	Nonsense mediated decay	-	-	-
Il17b-203	ENSMUST00000237575.1	846	No protein	lncRNA	-	-	-

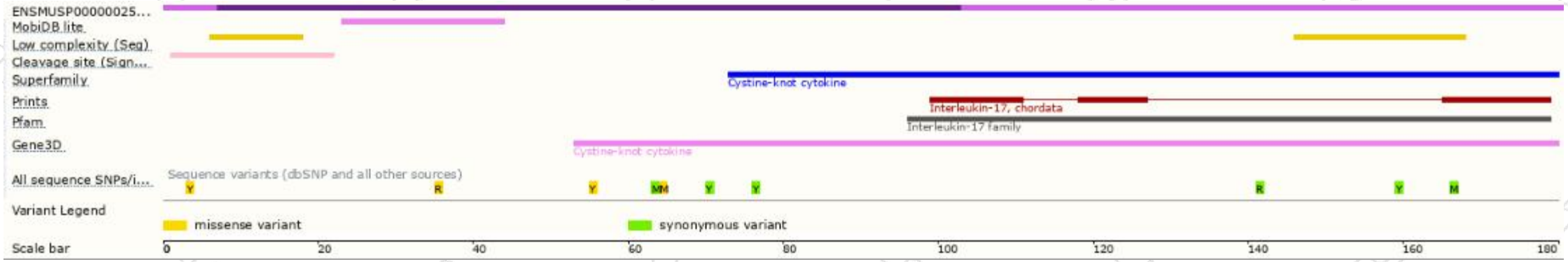
The strategy is based on the design of *Il17b-201* transcript,The transcription is shown below



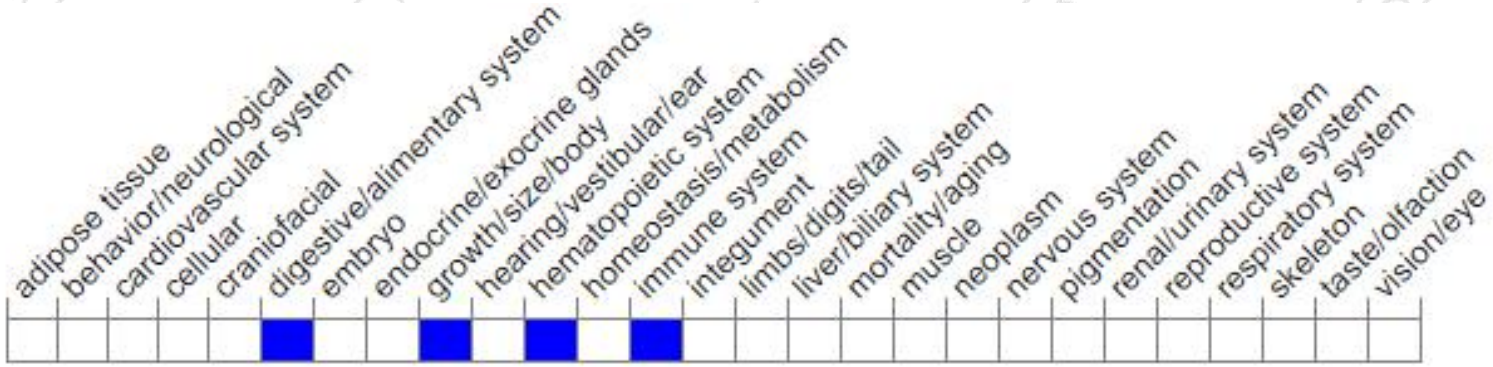
Genomic location distribution



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 a gene trap allele exhibit increased susceptibility to DDS-induced colitis and Citrobacter rodentium infection.

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

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