Il17ra Cas9-KO Strategy

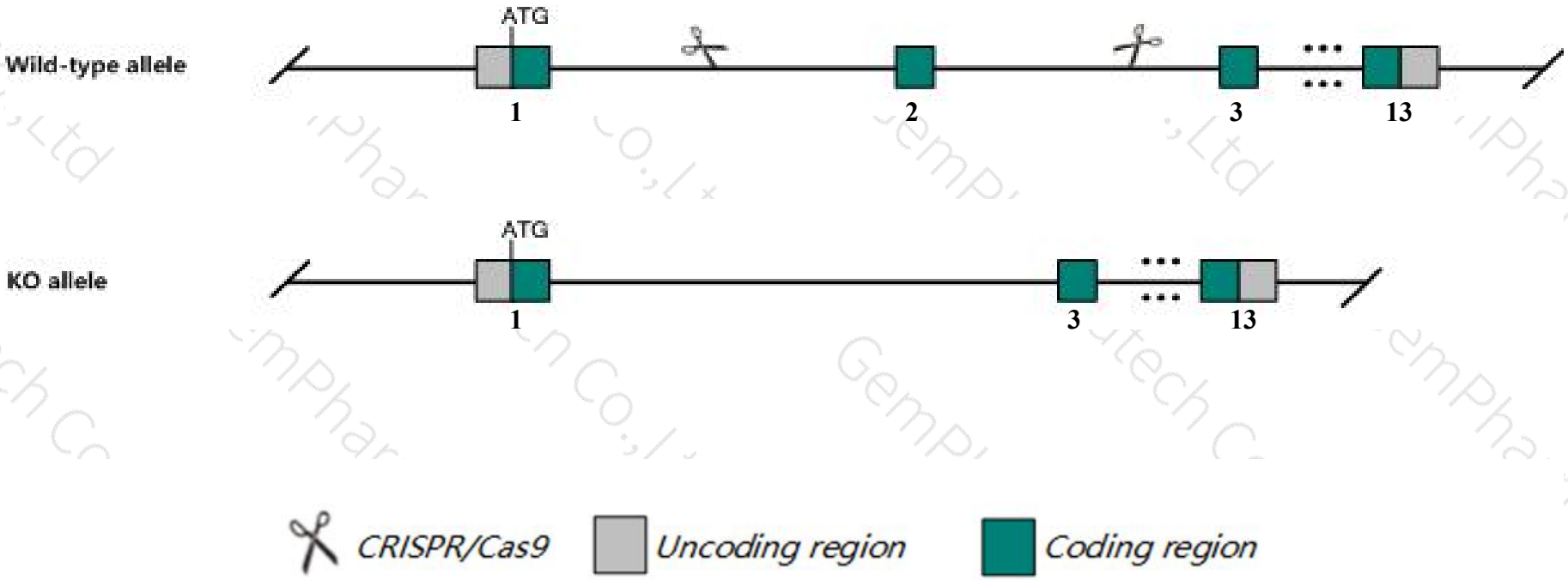
Designer: Yanhua Shen
Design Date: 2019-08-06

Project Overview

Project Name	***Il17ra***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Il17ra* gene. The schematic diagram is as follows:



Technical routes

➢ The *Il17ra* gene has 3 transcripts. According to the structure of *Il17ra* gene, exon2 of *Il17ra-201* (ENSMUST00000002976.4) transcript is recommended as the knockout region.The region contains 25bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Il17ra* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Homozygotes for a targeted null mutation exhibit delayed neutrophil recruitment and enhanced susceptibility to intranasal infection by Klibsiella pneumoniae. Mice homozygous for a different knock-out allele exhibit delayed and milder IMQ-induced psoriasis.

- The *Il17ra* gene is located on the Chr6. 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）

集萃药康 GemPharmatech

Il17ra interleukin 17 receptor A [Mus musculus (house mouse)]

Gene ID: 16172, updated on 9-Apr-2019

Summary

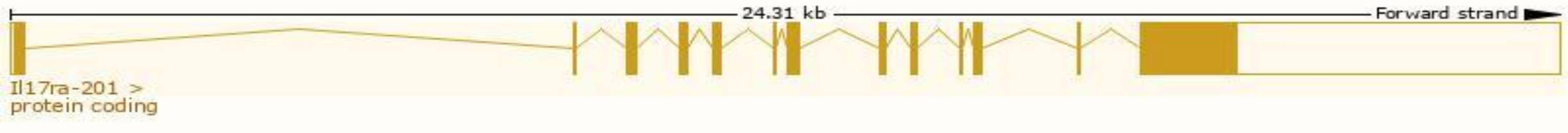
Official Symbol	Il17ra provided by MGI
Official Full Name	interleukin 17 receptor A provided by MGI
Primary source	MGI:MGI:107399
See related	Ensembl:ENSMUSG00000002897
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW538159, Cdw217, Il17r, VDw217
Expression	Broad expression in thymus adult (RPKM 57.0), spleen adult (RPKM 39.4) and 19 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

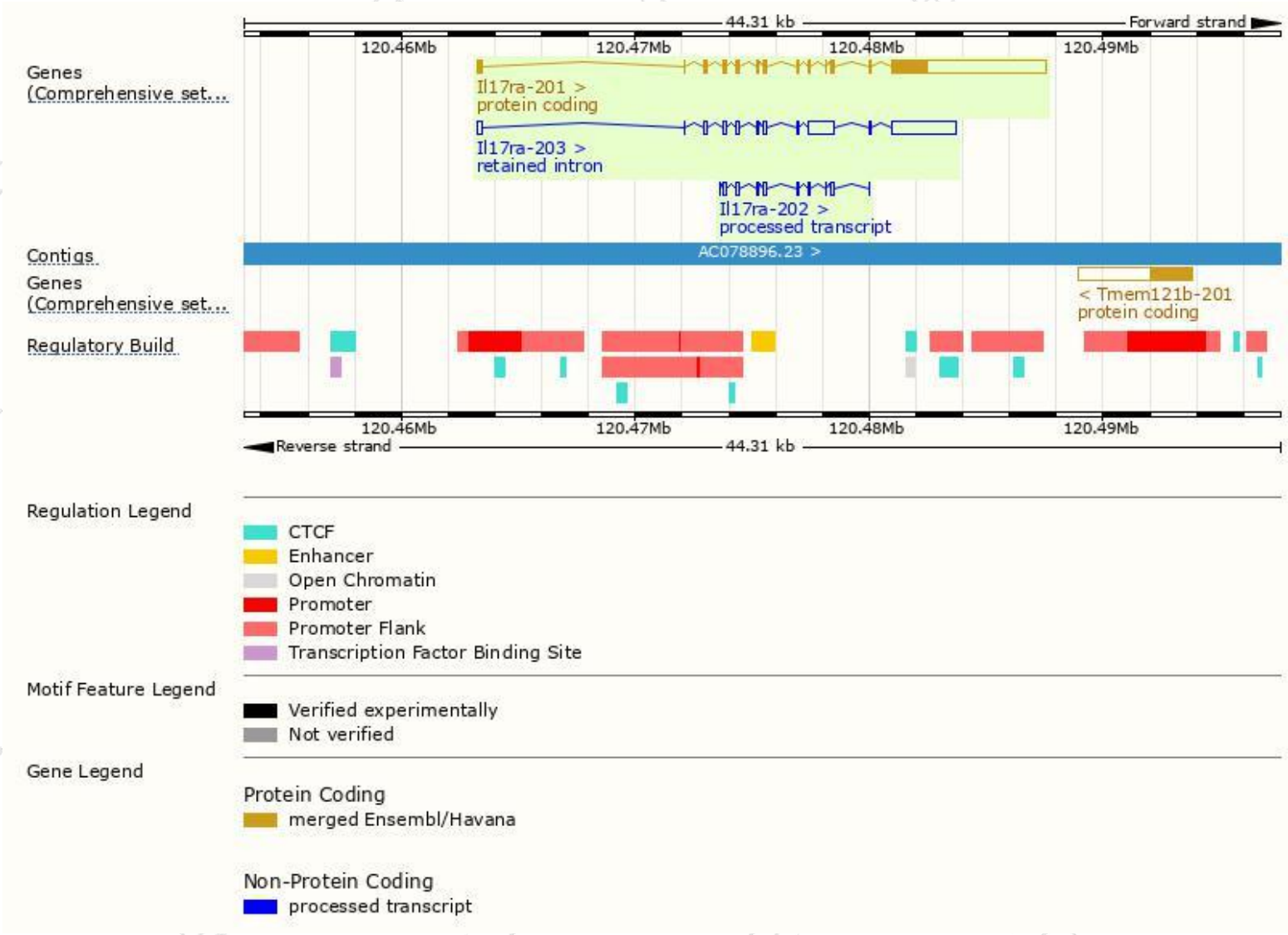
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Il17ra-201	ENSMUST00000002976.4	7752	864aa	Protein coding	CCDS20482	Q60943	TSL:1 GENCODE basic APPRIS P1
Il17ra-202	ENSMUST00000204078.1	805	No protein	Processed transcript	-	-	TSL:5
Il17ra-203	ENSMUST00000204239.2	4804	No protein	Retained intron	-	-	TSL:1

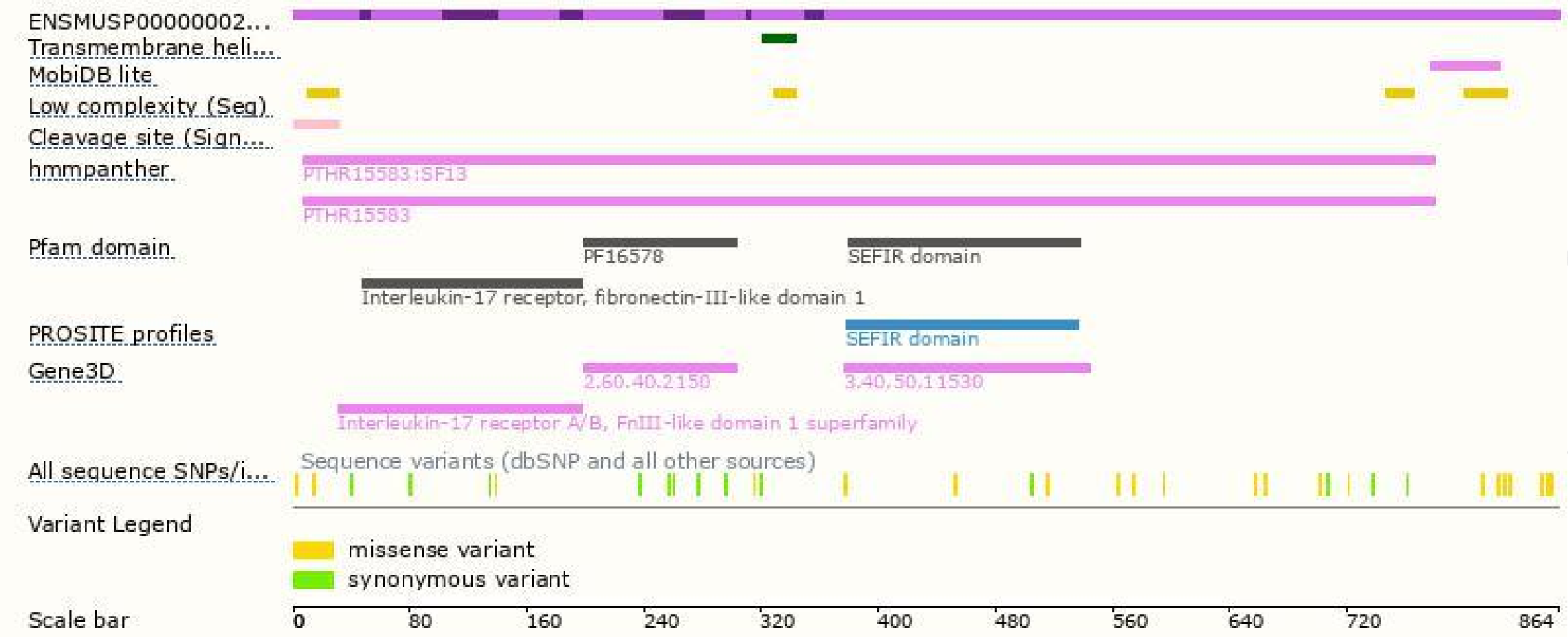
The strategy is based on the design of *Il17ra-201* transcript,The transcription is shown below



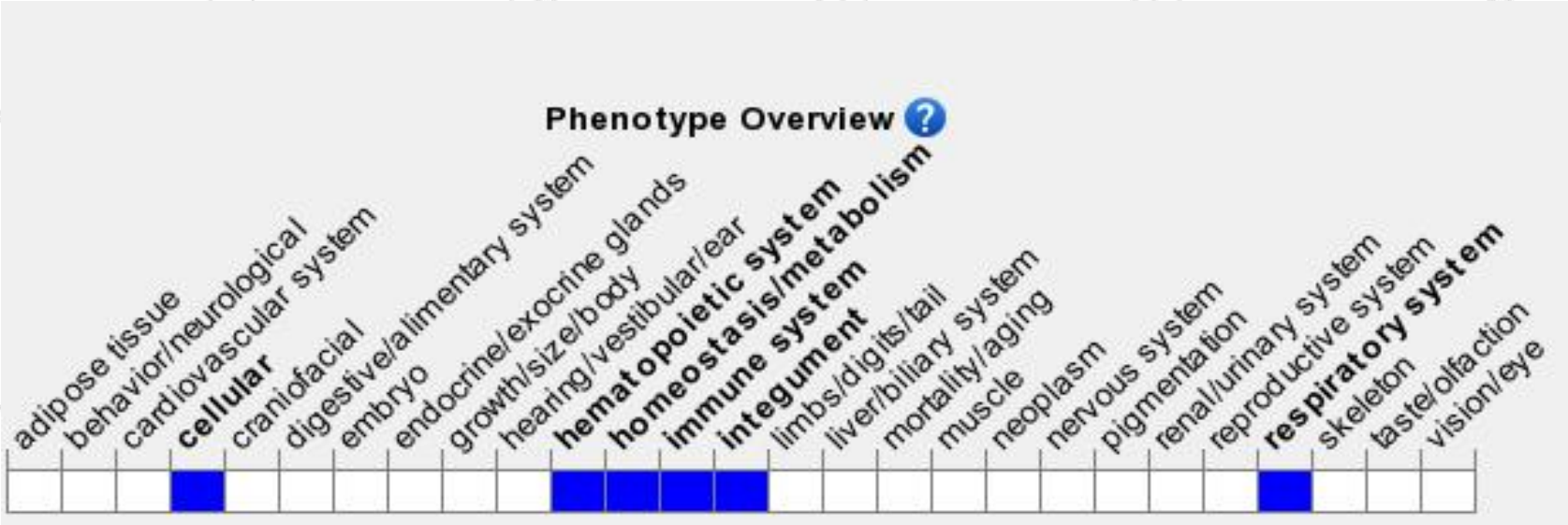
Genomic location distribution



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,Homozygotes for a targeted null mutation exhibit delayed neutrophil recruitment and enhanced susceptibility to intranasal infection by Klibsiella pneumoniae. Mice homozygous for a different knock-out allele exhibit delayed and milder IMQ-induced psoriasis.

集萃药康
GemPharmatech

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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd