Rnf125 Cas9-CKO Strategy

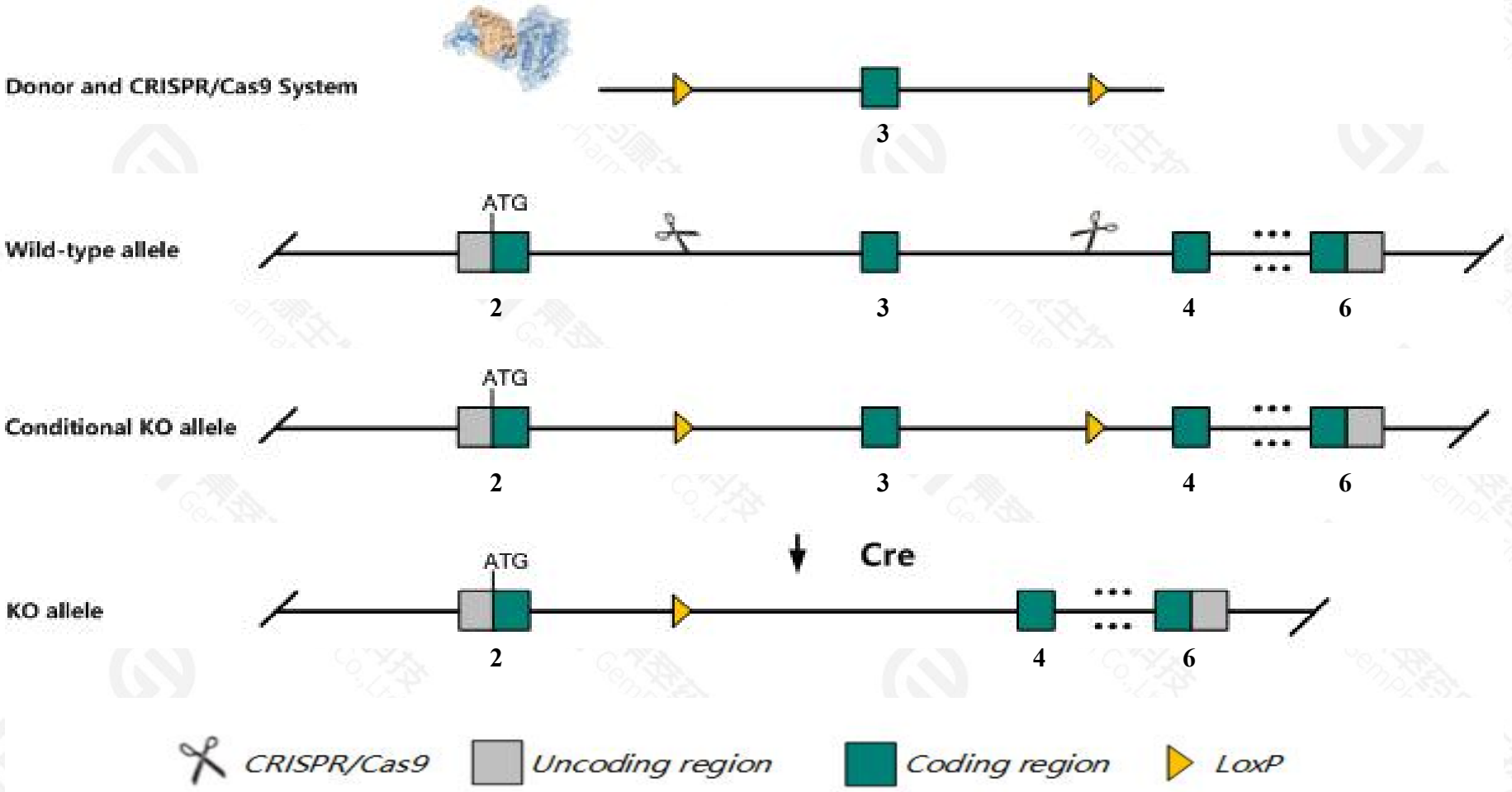
Designer: Qiong Zhou

Project Overview

Project Name	***Rnf125***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rnf125* gene. The schematic diagram is as follows:



Technical routes

➢ The *Rnf125* gene has 2 transcripts. According to the structure of *Rnf125* gene, exon3 of *Rnf125-201*(ENSMUST00000050004.3) transcript is recommended as the knockout region.The region contains 95bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Rnf125* gene. The brief process is as follows: CRISPR/Cas9 system and Donor 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.

➢ The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

➢ The *Rnf125* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information （NCBI）

集萃药康 GemPharmatech

Rnf125 ring finger protein 125 [Mus musculus (house mouse)]

Gene ID: 67664, updated on 7-Mar-2021

Summary

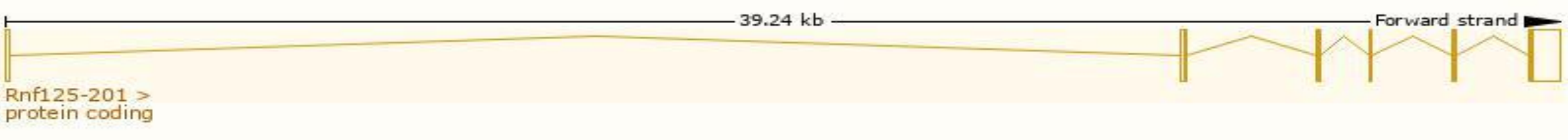
Official Symbol	Rnf125 provided by MGI
Official Full Name	ring finger protein 125 provided byMGI
Primary source	MGI:MGI:1914914
See related	Ensembl:ENSMUSG00000033107
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4930553F04Rik, C730049O14, C730049O14Rik
Expression	Broad expression in liver adult (RPKM 19.3), testis adult (RPKM 9.0) and 18 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

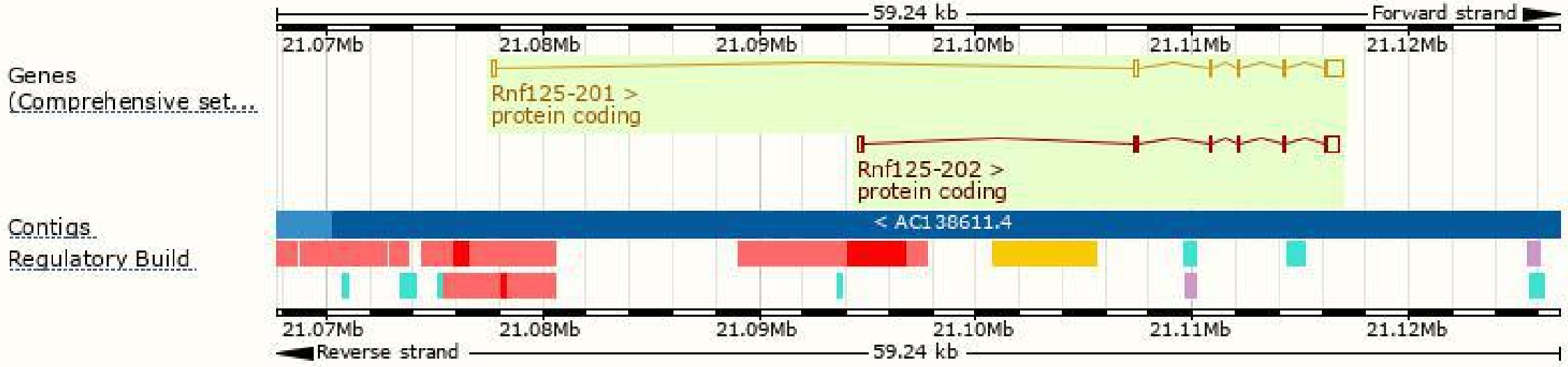
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rnf125-201	ENSMUST00000050004.3	1348	140aa	Protein coding	CCDS29088		TSL:1 , GENCODE basic ,
Rnf125-202	ENSMUST00000234316.2	1406	233aa	Protein coding	-		GENCODE basic , APPRIS P1 ,

The strategy is based on the design of *Rnf125-201* transcript,the transcription is shown below:



Genomic location distribution



Regulation Legend

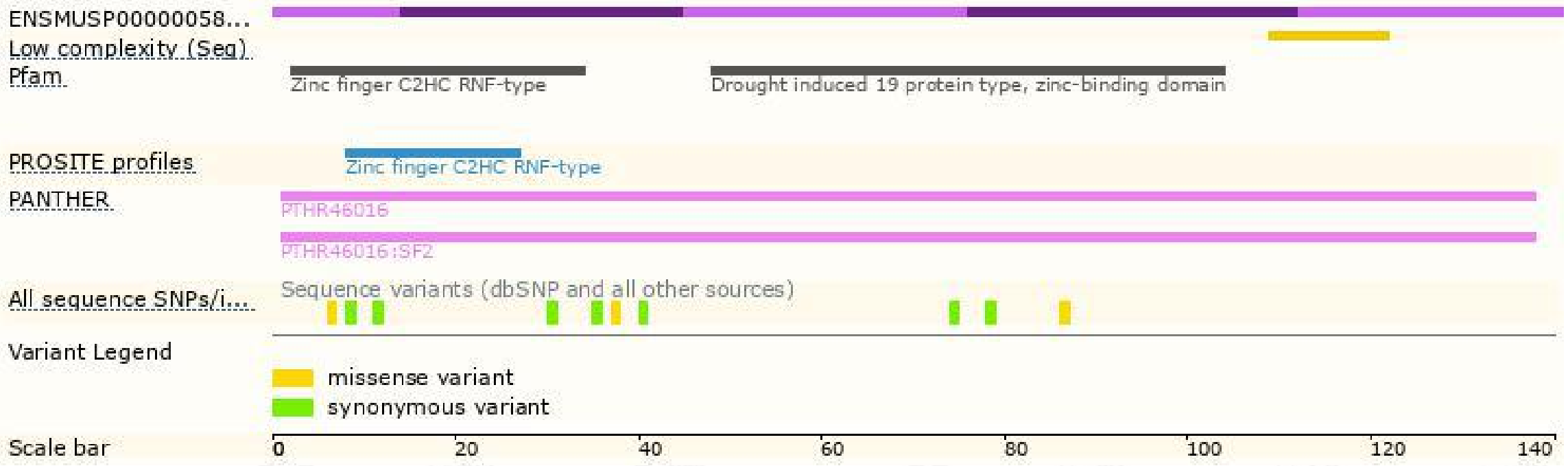
- CTCF
- Enhancer
- Promoter
- Promoter Flank
- Transcription Factor Binding Site

Gene Legend

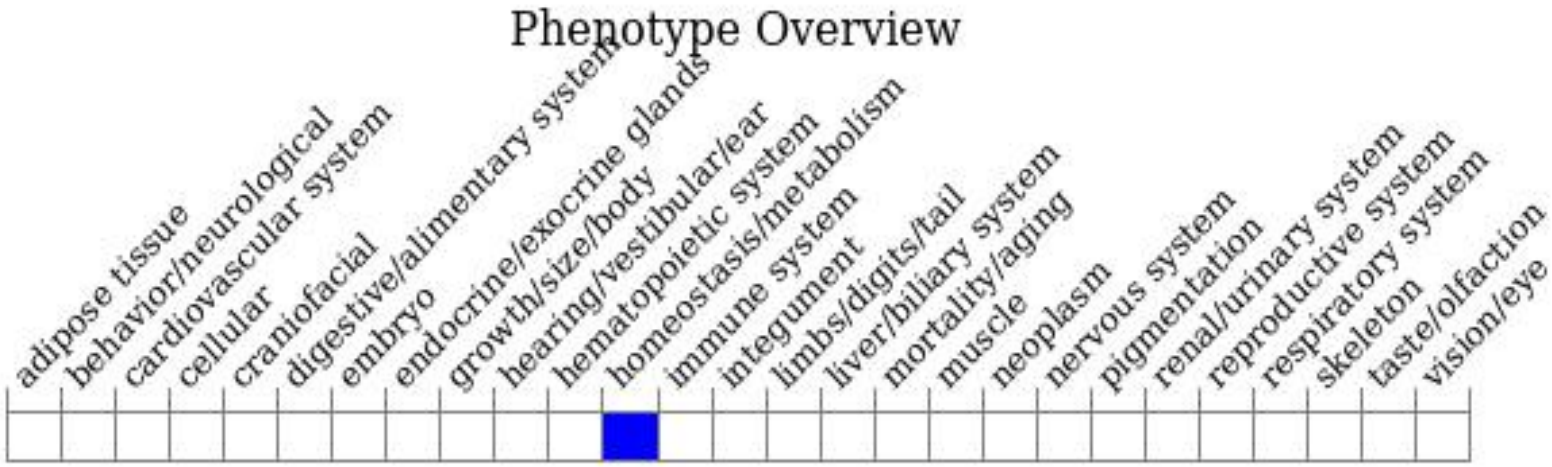
Protein Coding

- Ensembl protein coding
- merged Ensembl/Havana

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/).

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