

Prss54 Cas9-CKO Strategy

Designer:

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Project Overview

Project Name

Prss54

Project type

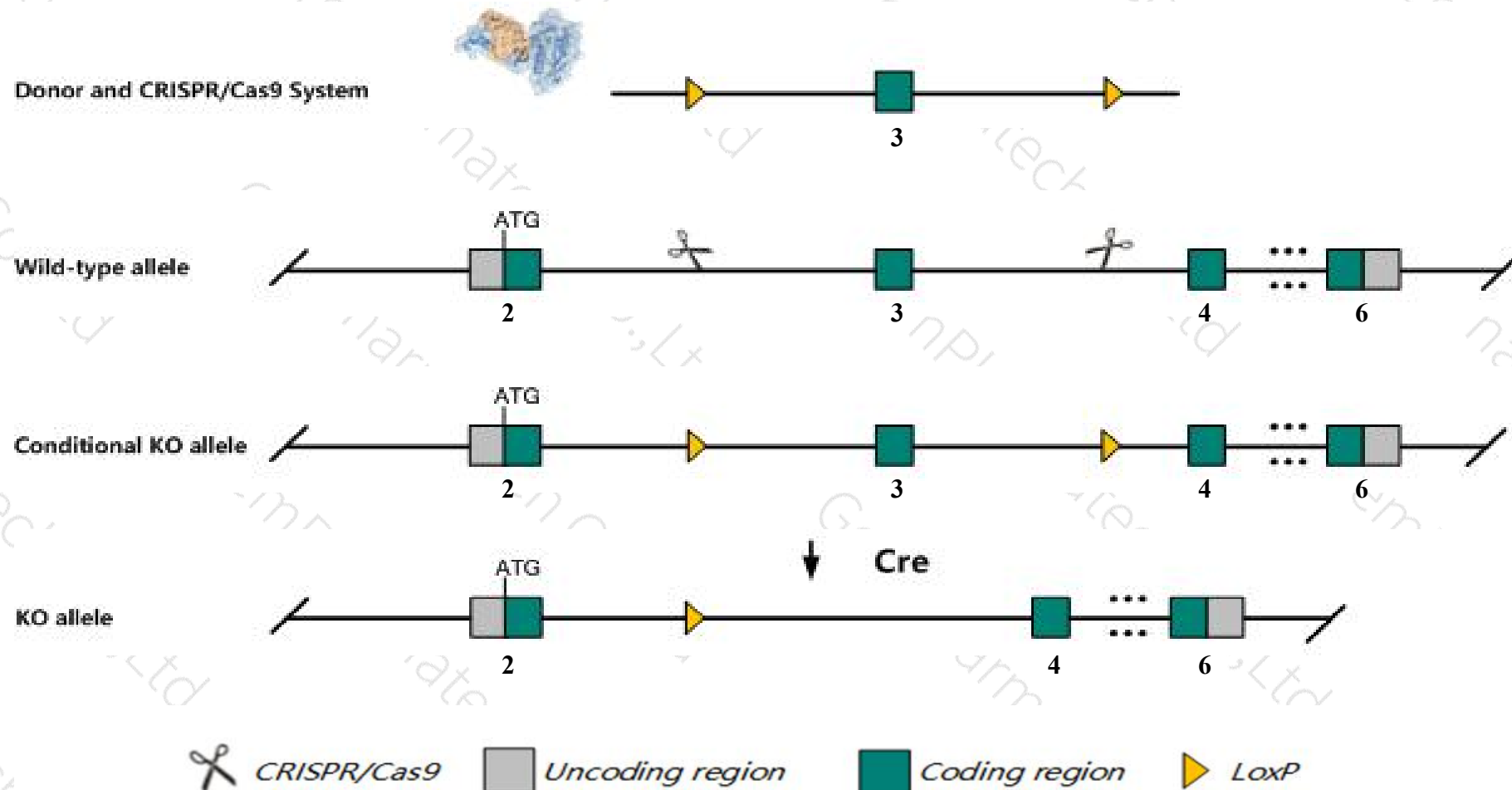
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Prss54* gene. The schematic diagram is as follows:



- The *Prss54* gene has 5 transcripts. According to the structure of *Prss54* gene, exon3 of *Prss54-201* (ENSMUST00000052690.12) transcript is recommended as the knockout region. The region contains 172bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Prss54* 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 *Prss54* gene is located on the Chr8. 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)

Prss54 protease, serine 54 [Mus musculus (house mouse)]

Gene ID: 70993, updated on 31-Jan-2019

Summary



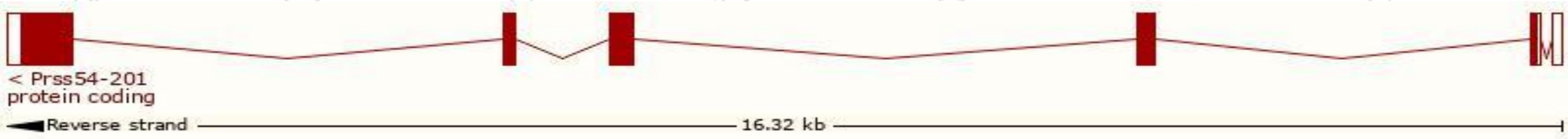
Official Symbol	Prss54 provided by MGI
Official Full Name	protease, serine 54 provided by MGI
Primary source	MGI:MGI:1918243
See related	Ensembl:ENSMUSG00000048400
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4931432M23Rik, Kikbl4
Expression	Restricted expression toward testis adult (RPKM 70.8) See more
Orthologs	human all

Transcript information (Ensembl)

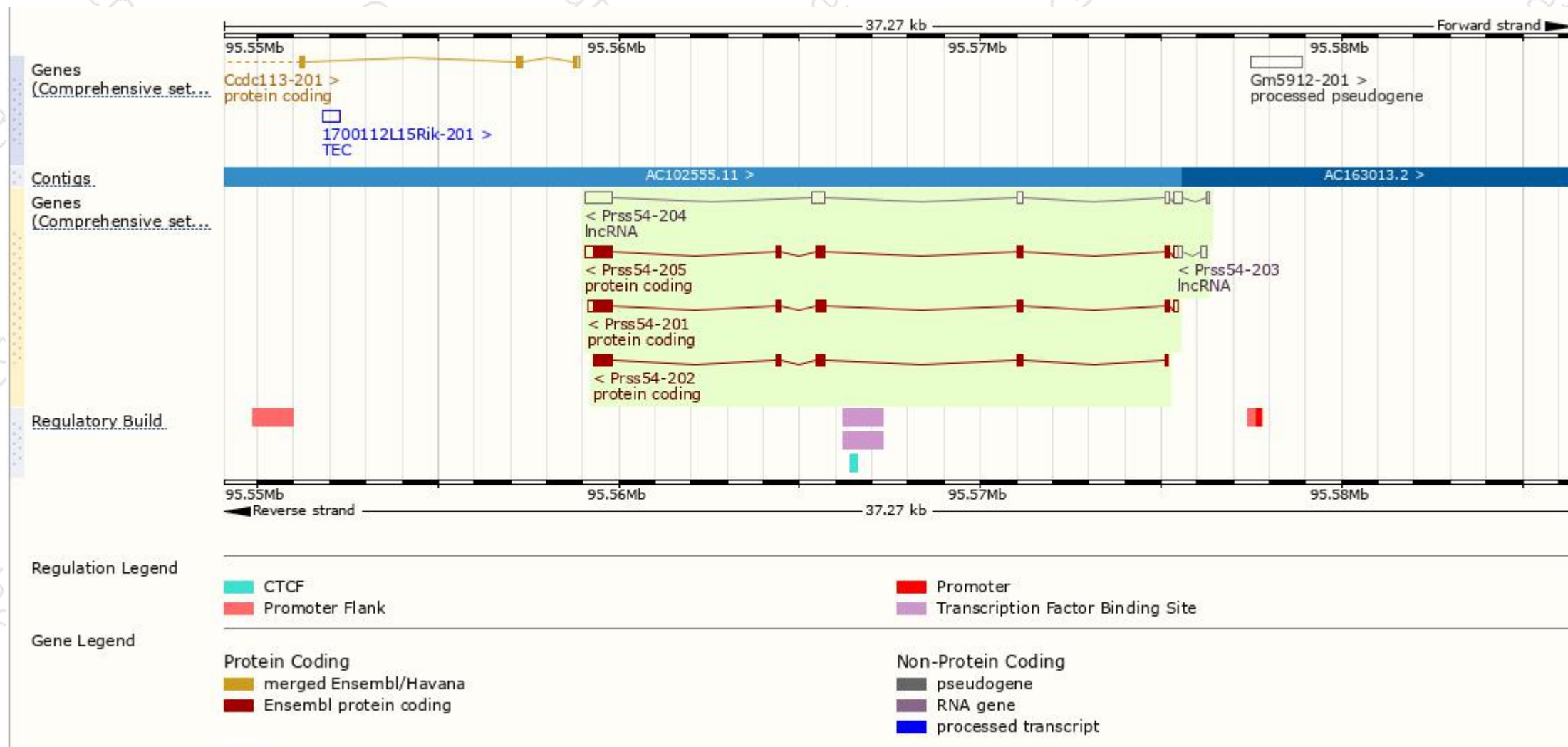
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Prss54-201	ENSMUST00000052690.12	1438	383aa	Protein coding	CCDS80916	A6H685	TSL:1 GENCODE basic APPRIS P2
Prss54-205	ENSMUST00000213096.1	1501	383aa	Protein coding	-	Q7M756	TSL:5 GENCODE basic APPRIS ALT2
Prss54-202	ENSMUST00000180075.1	1152	383aa	Protein coding	-	Q7M756	TSL:5 GENCODE basic APPRIS ALT2
Prss54-204	ENSMUST00000212513.1	1694	No protein	lncRNA	-	-	TSL:5
Prss54-203	ENSMUST00000212368.1	301	No protein	lncRNA	-	-	TSL:2

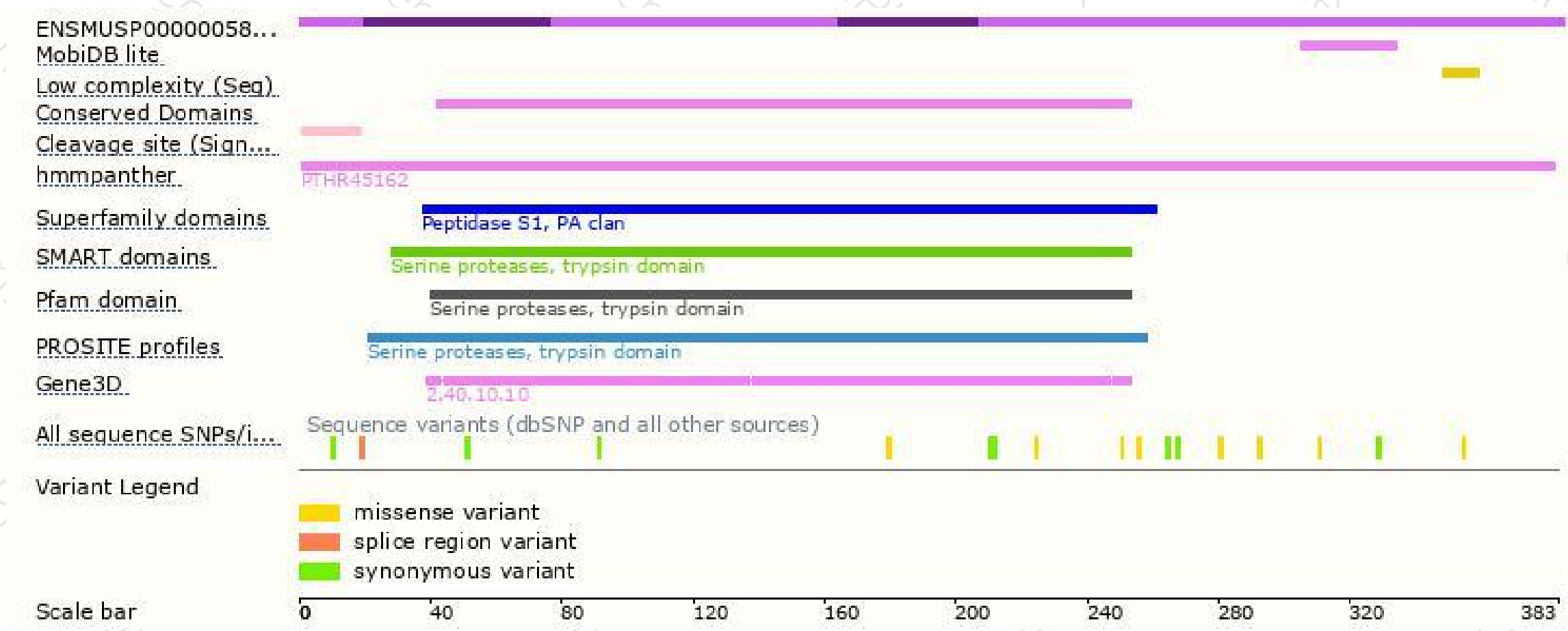
The strategy is based on the design of *Prss54-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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