

Polr3f Cas9-CKO Strategy

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Project Overview

Project Name

Polr3f

Project type

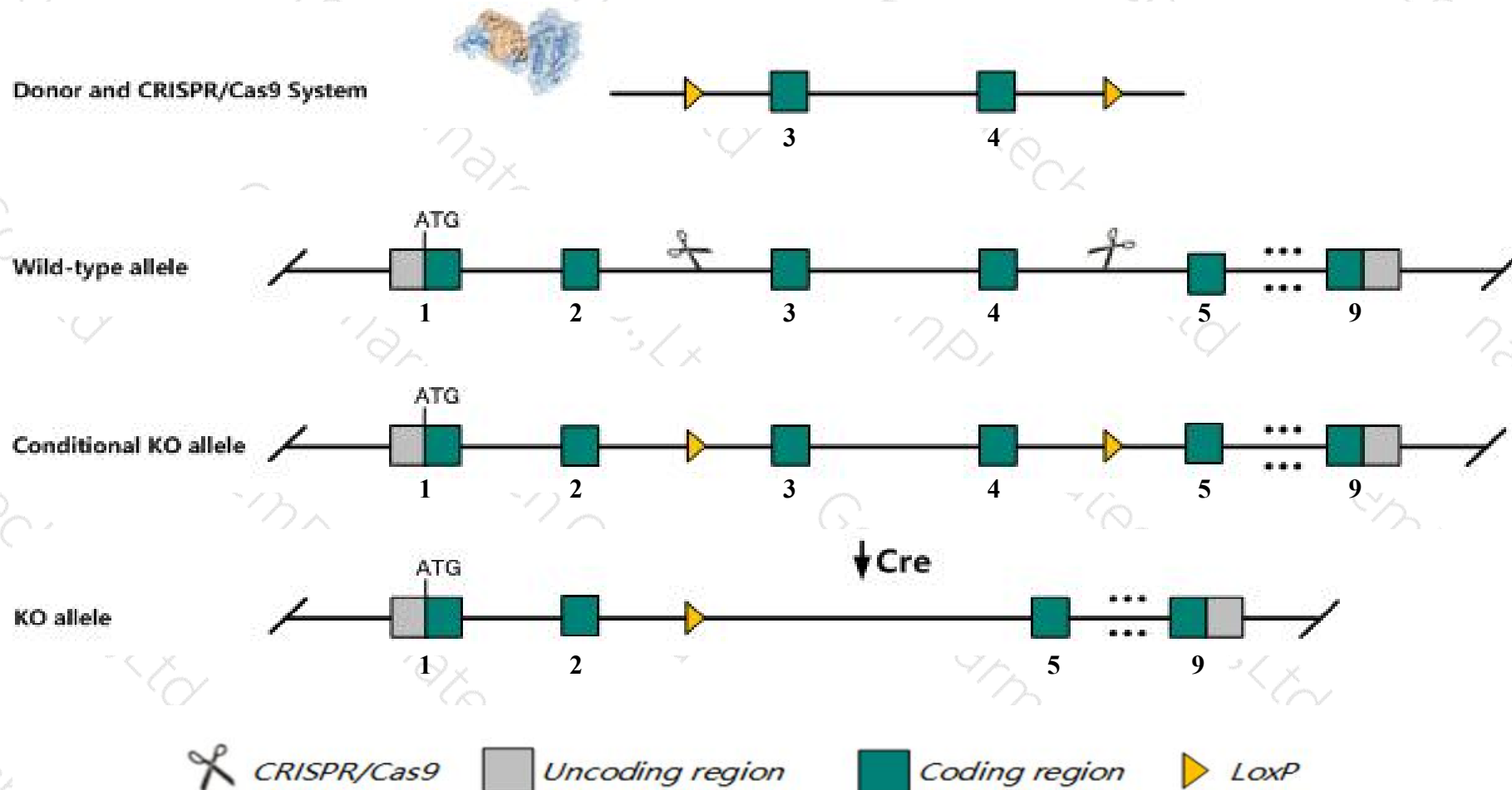
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Polr3f* gene. The schematic diagram is as follows:



- The *Polr3f* gene has 7 transcripts. According to the structure of *Polr3f* gene, exon3-exon4 of *Polr3f*-201 (ENSMUST00000028914.8) transcript is recommended as the knockout region. The region contains 136bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Polr3f* 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 *Polr3f* gene is located on the Chr2. 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)

Polr3f polymerase (RNA) III (DNA directed) polypeptide F [Mus musculus (house mouse)]

Gene ID: 70408, updated on 31-Jan-2019

Summary



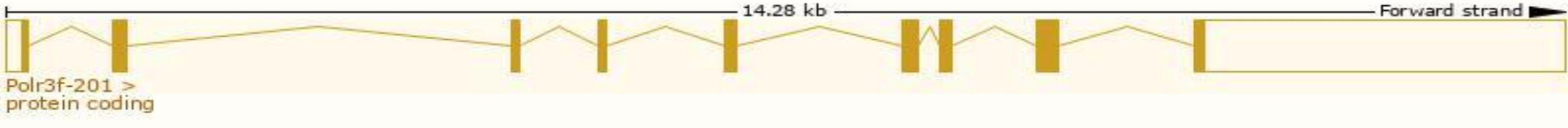
Official Symbol	Polr3f provided by MGI
Official Full Name	polymerase (RNA) III (DNA directed) polypeptide F provided by MGI
Primary source	MGI:MGI:1924086
See related	Ensembl:ENSMUSG000000027427
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2810411G20Rik, 3010019O03Rik, 3110032A07Rik, RPC39, RPC6
Expression	Ubiquitous expression in CNS E11.5 (RPKM 5.5), CNS E14 (RPKM 4.5) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

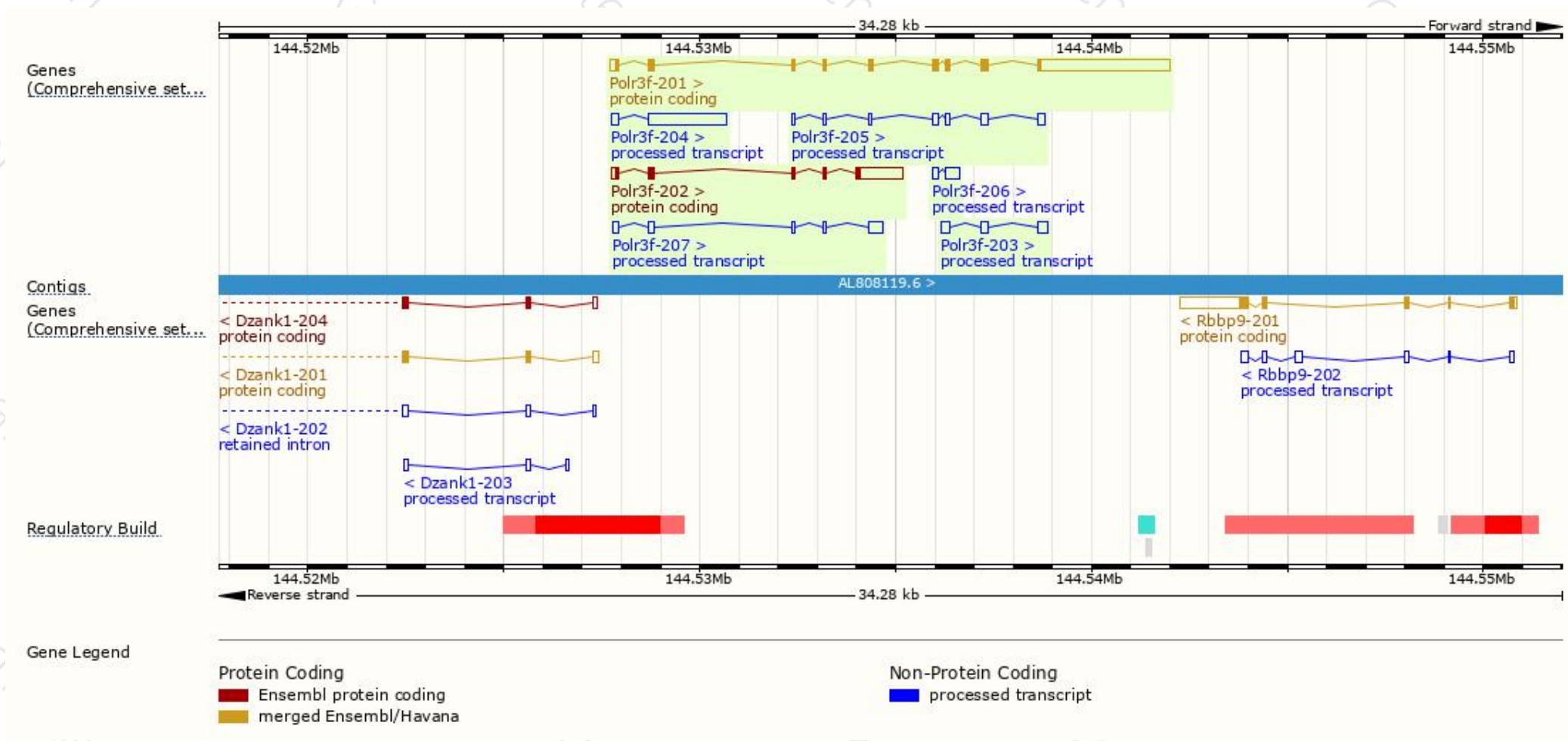
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Polr3f-201	ENSMUST00000028914.8	4403	316aa	Protein coding	CCDS16820	Q921X6	TSL:1 GENCODE basic APPRIS P1
Polr3f-202	ENSMUST00000110017.2	1632	141aa	Protein coding	-	Q9CZ23	TSL:1 GENCODE basic
Polr3f-204	ENSMUST00000136999.1	2177	No protein	Processed transcript	-	-	TSL:1
Polr3f-205	ENSMUST00000143292.7	835	No protein	Processed transcript	-	-	TSL:3
Polr3f-207	ENSMUST00000155567.7	792	No protein	Processed transcript	-	-	TSL:2
Polr3f-203	ENSMUST00000134051.1	690	No protein	Processed transcript	-	-	TSL:2
Polr3f-206	ENSMUST00000152311.1	490	No protein	Processed transcript	-	-	TSL:2

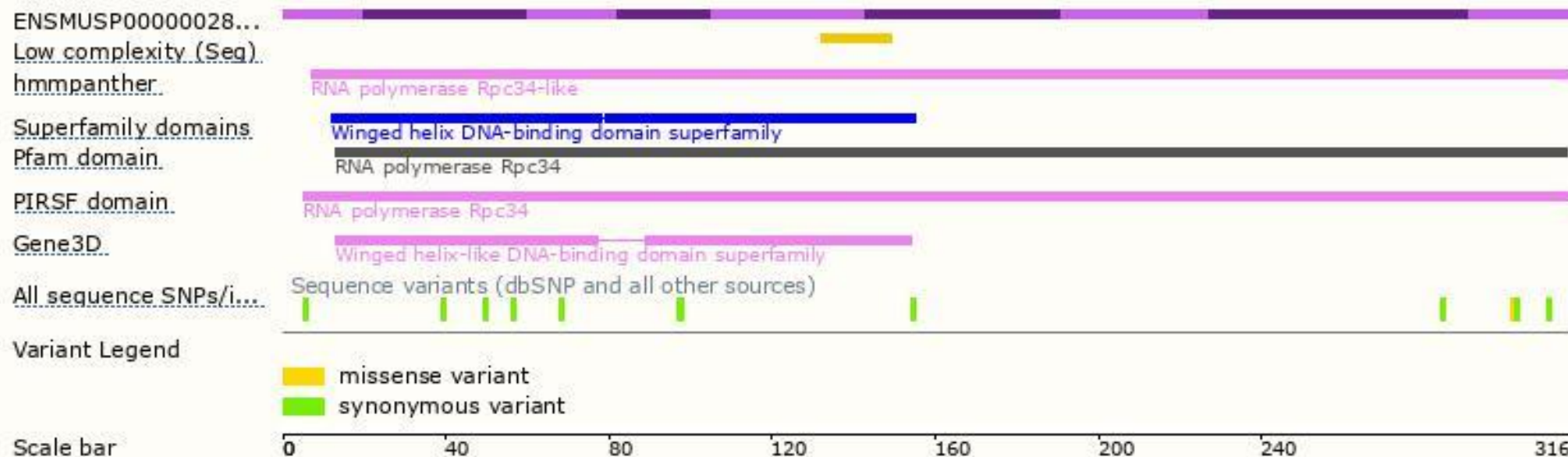
The strategy is based on the design of *Polr3f-201* transcript,The transcription is shown below



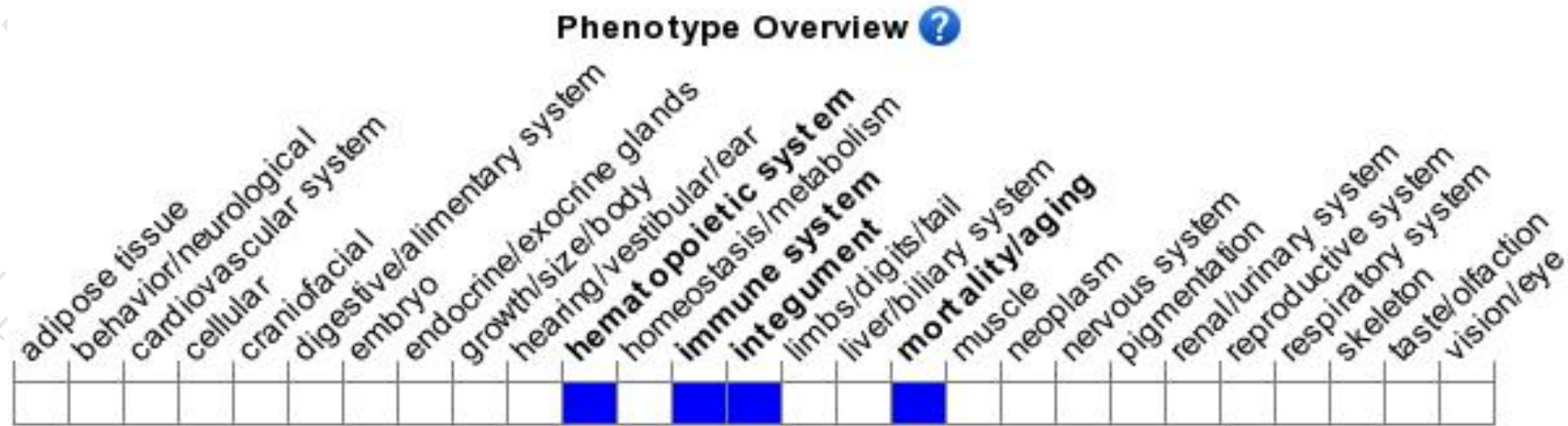
Genomic location distribution



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/>).

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

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