

Nlrp2 Cas9-CKO Strategy

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Project Overview

Project Name

Nlrp2

Project type

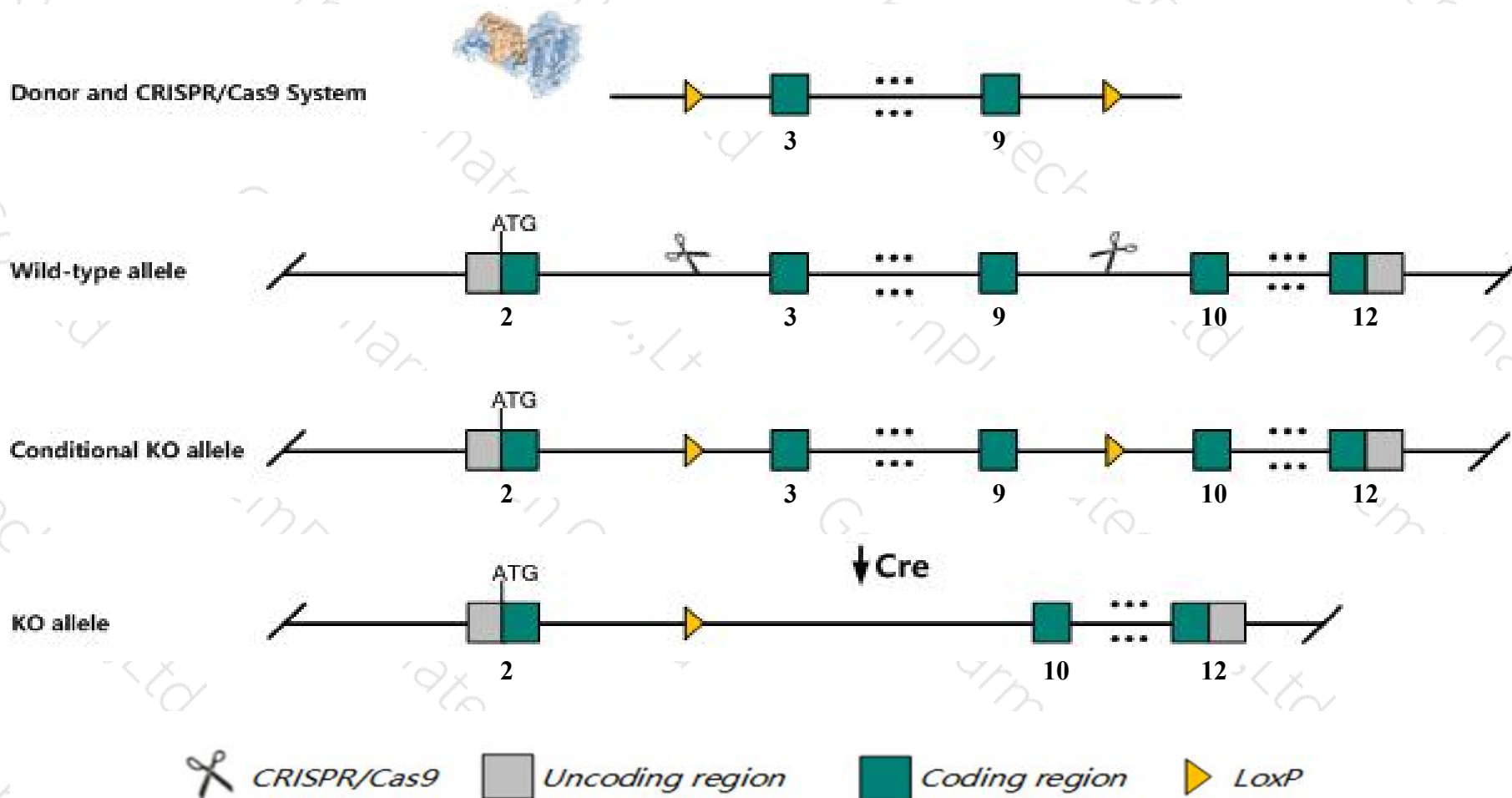
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Nlrp2* gene. The schematic diagram is as follows:



- The *Nlrp2* gene has 3 transcripts. According to the structure of *Nlrp2* gene, exon3-exon9 of *Nlrp2-201* (ENSMUST00000045022.8) transcript is recommended as the knockout region. The region contains 2386bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Nlrp2* 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.

- The floxed region is near to the C-terminal of *Gm18757* gene, this strategy may influence the regulatory function of the C-terminal of *Gm18757* gene.
- The *Nlrp2* gene is located on the Chr7. 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)

Nlrp2 NLR family, pyrin domain containing 2 [Mus musculus (house mouse)]

Gene ID: 232827, updated on 25-Mar-2019

Summary



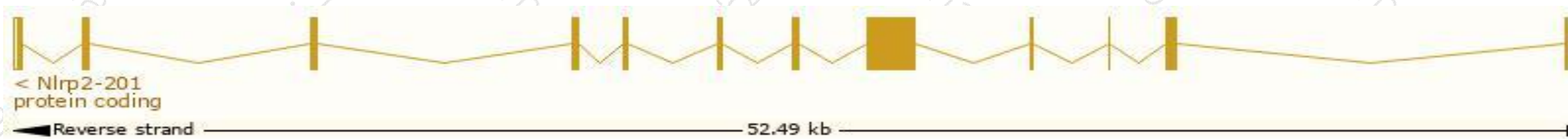
Official Symbol	Nlrp2 provided by MGI
Official Full Name	NLR family, pyrin domain containing 2 provided by MGI
Primary source	MGI:MGI:3041206
See related	Ensembl:ENSMUSG00000035177
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	E330007A02Rik, NBS1, Nalp2, PAN1, PYPAF2
Expression	Low expression observed in reference dataset See more

Transcript information (Ensembl)

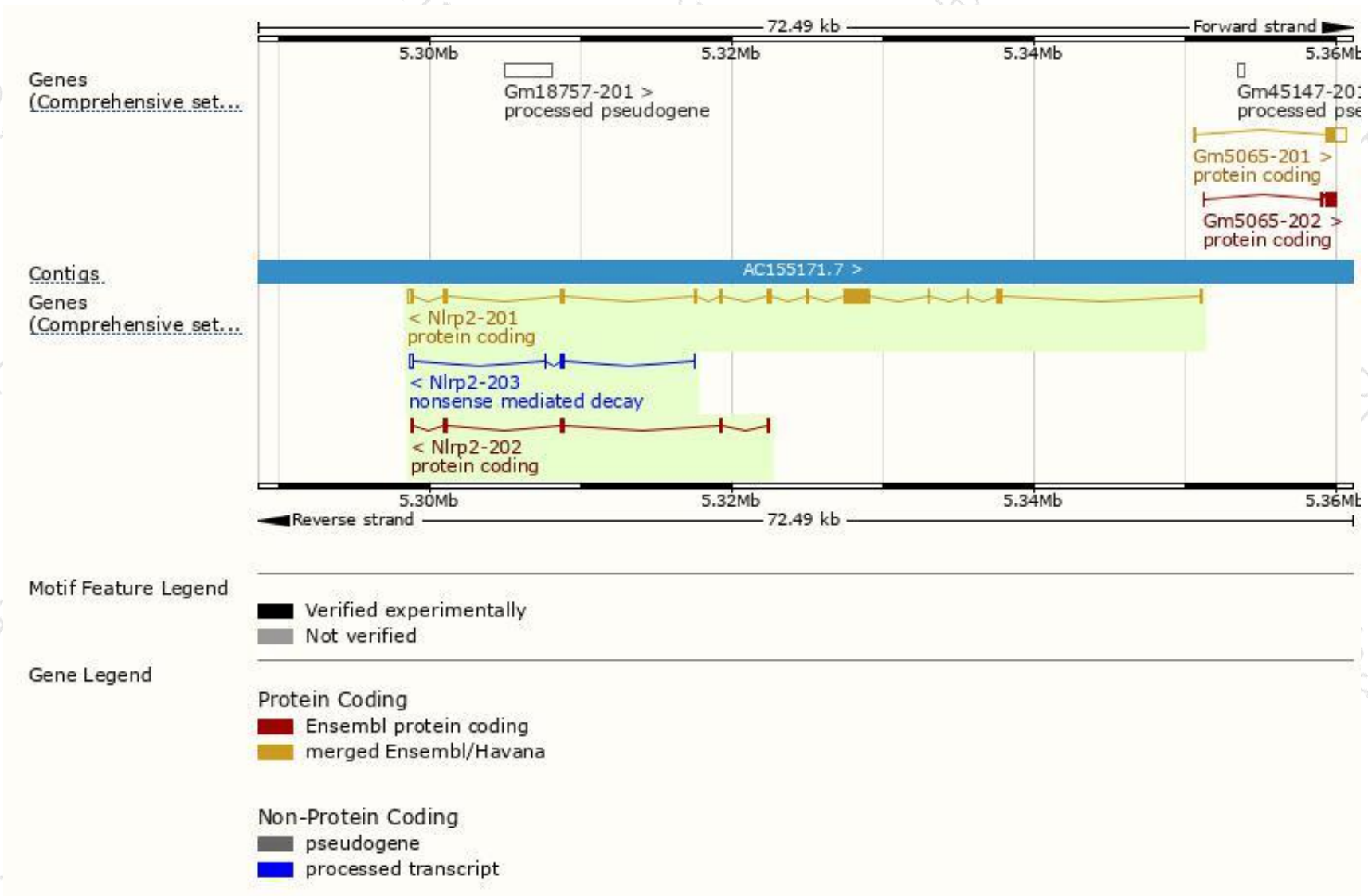
The gene has 3 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nlrp2-201	ENSMUST00000045022.8	3404	1046aa	Protein coding	CCDS39746	Q4PLS0	TSL:1 GENCODE basic APPRIS P1
Nlrp2-202	ENSMUST00000207520.1	746	248aa	Protein coding	-	A0A140LJ71	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:3
Nlrp2-203	ENSMUST00000207685.1	581	87aa	Nonsense mediated decay	-	A0A140LHK4	CDS 5' incomplete TSL:3

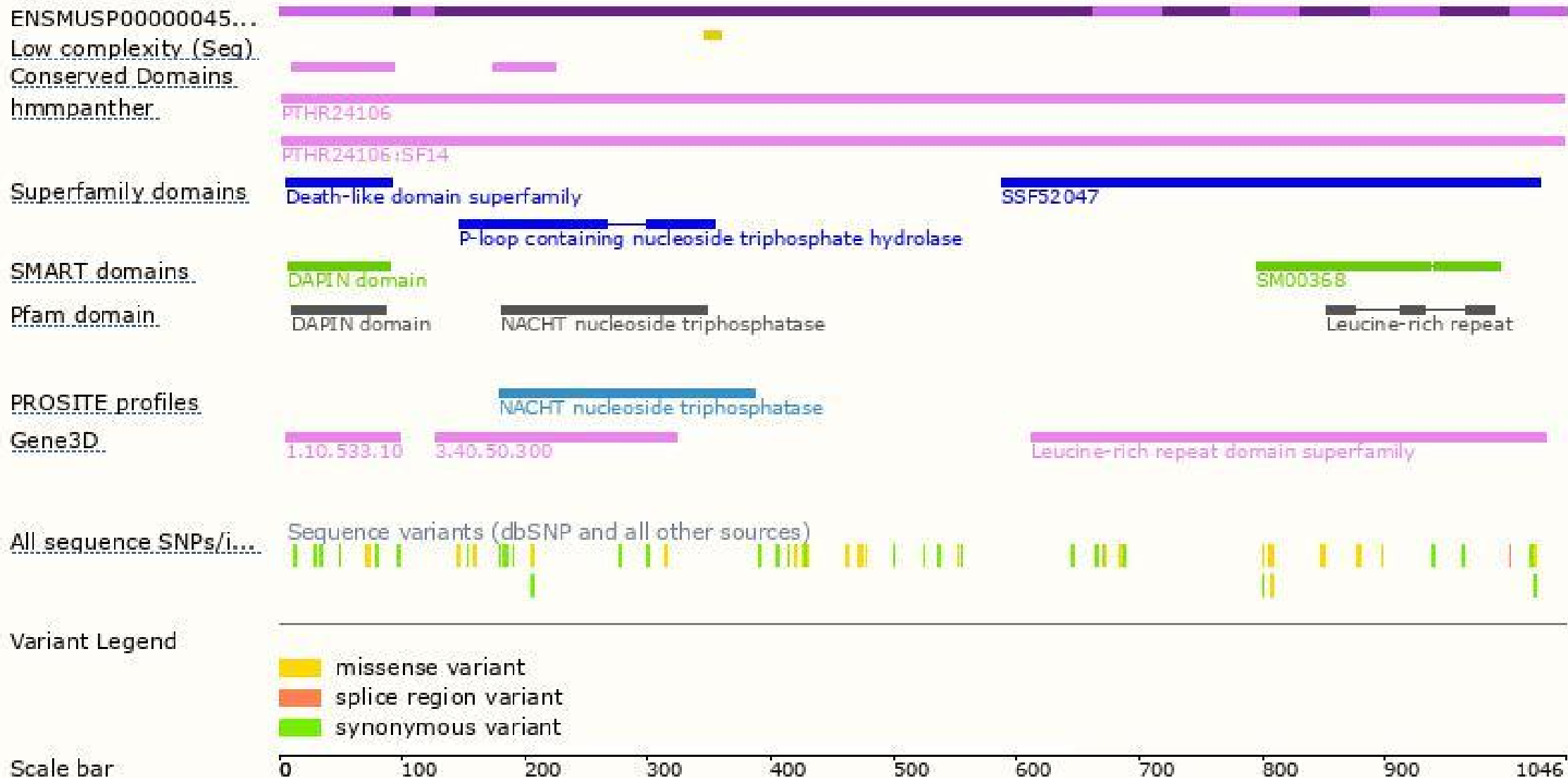
The strategy is based on the design of *Nlrp2-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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