

Crnkl1 Cas9-CKO Strategy

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Project Overview

Project Name

Crnkl1

Project type

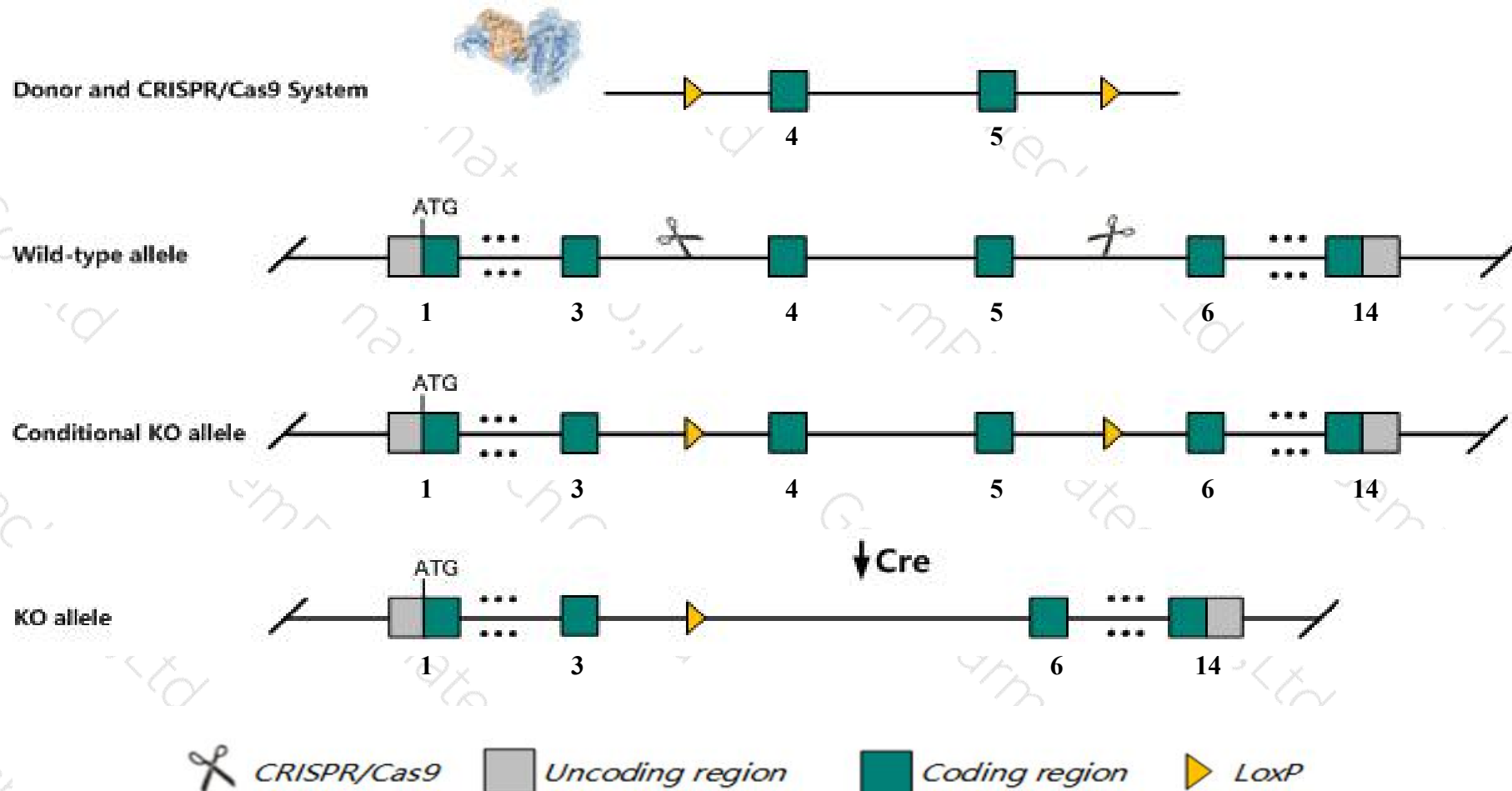
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Crnk1l* gene. The schematic diagram is as follows:



- The *Crnk1l* gene has 3 transcripts. According to the structure of *Crnk1l* gene, exon4-exon5 of *Crnk1l*-201 (ENSMUST00000001818.4) transcript is recommended as the knockout region. The region contains 326bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Crnk1l* 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 *Crnkl1* 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.
- The floxed region is near to the N-terminal of *Cfap61* gene, this strategy may influence the regulatory function of the N-terminal of *Cfap61* gene.
- Transcript *Crnkl1*-203 may not be affected.
- The N-terminal of *Crnkl1* gene will remain some amino acids, it may remain the partial function of *Crnkl1* gene.
- 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)

Crnk1l crooked neck pre-mRNA splicing factor 1 [Mus musculus (house mouse)]

Gene ID: 66877, updated on 13-Mar-2020

Summary



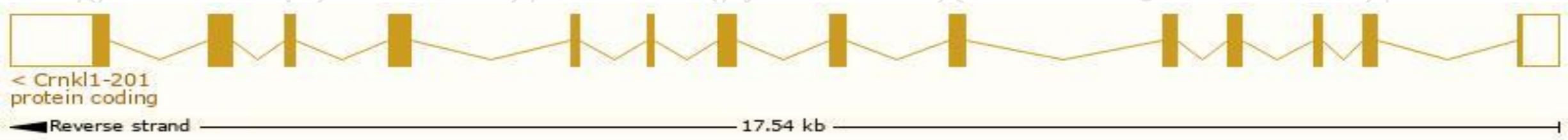
Official Symbol	Crnk1l provided by MGI
Official Full Name	crooked neck pre-mRNA splicing factor 1 provided by MGI
Primary source	MGI:MGI:1914127
See related	Ensembl:ENSMUSG000000001767
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1200013P10Rik, 5730590A01Rik, C80326, cm
Expression	Ubiquitous expression in CNS E11.5 (RPKM 12.8), liver E14 (RPKM 8.1) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

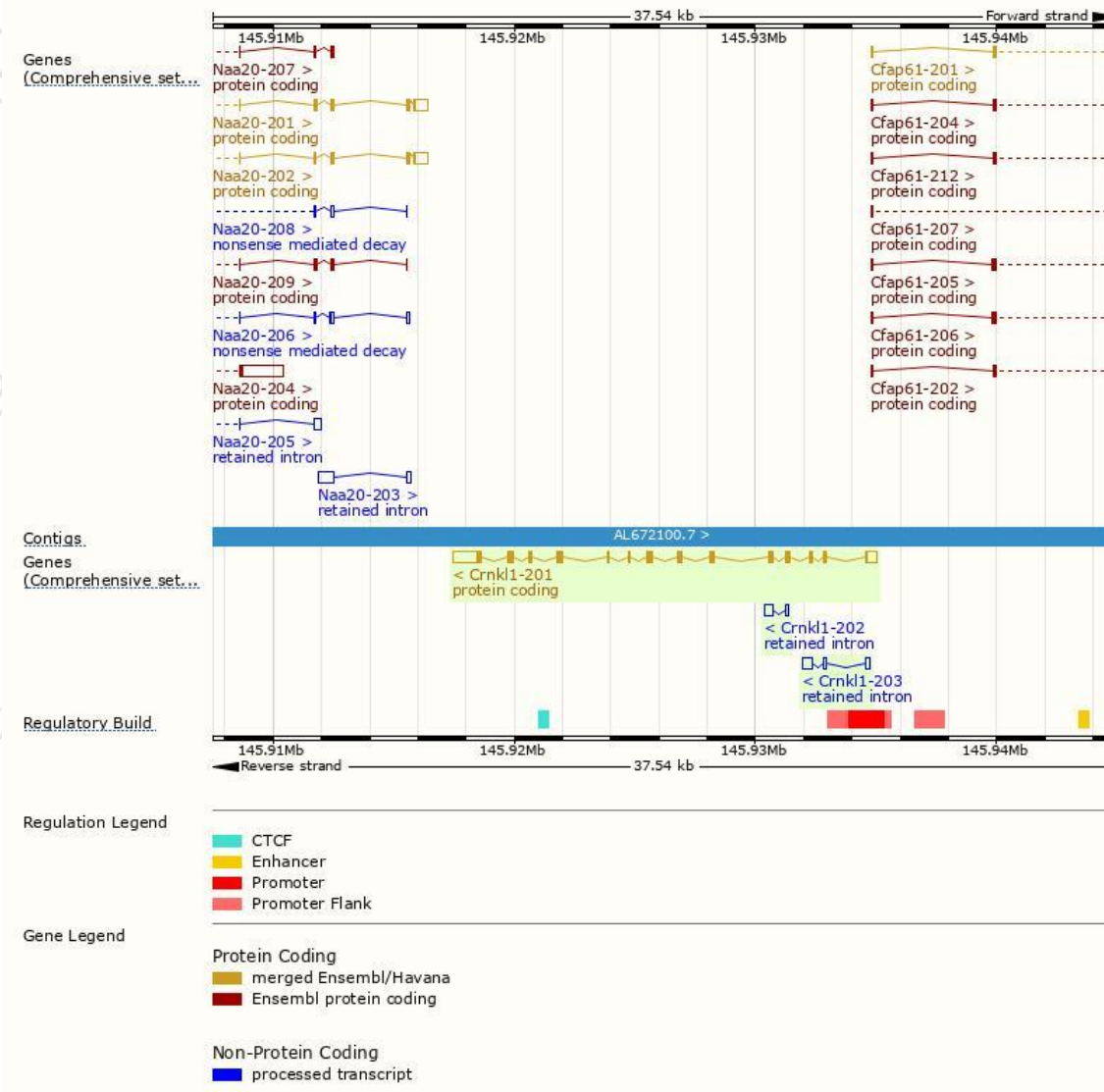
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Crnkl1-201	ENSMUST00000001818.4	3428	690aa	Protein coding	CCDS16828	P63154	TSL:1 GENCODE basic APPRIS P1
Crnkl1-203	ENSMUST00000147904.1	680	No protein	Retained intron	-	-	TSL:1
Crnkl1-202	ENSMUST00000145425.1	431	No protein	Retained intron	-	-	TSL:2

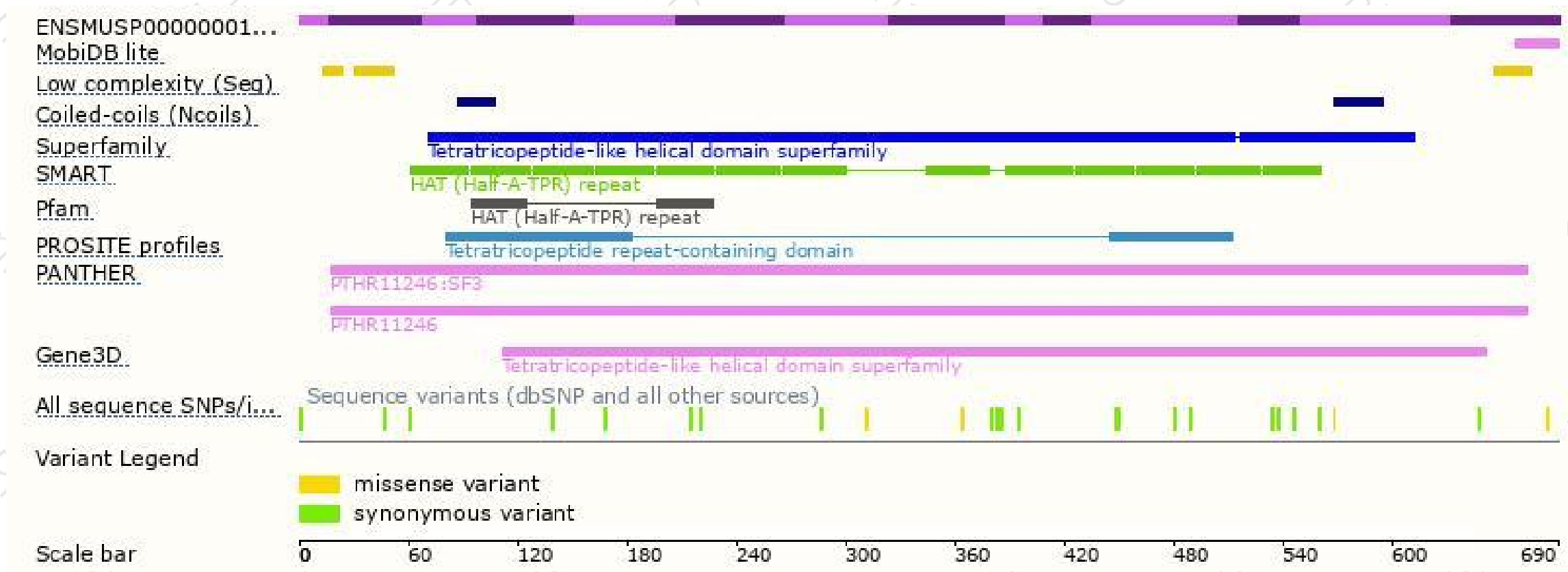
The strategy is based on the design of *Crnkl1-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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