

Ralyt Cas9-CKO Strategy

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Project Overview

Project Name

Ralyl

Project type

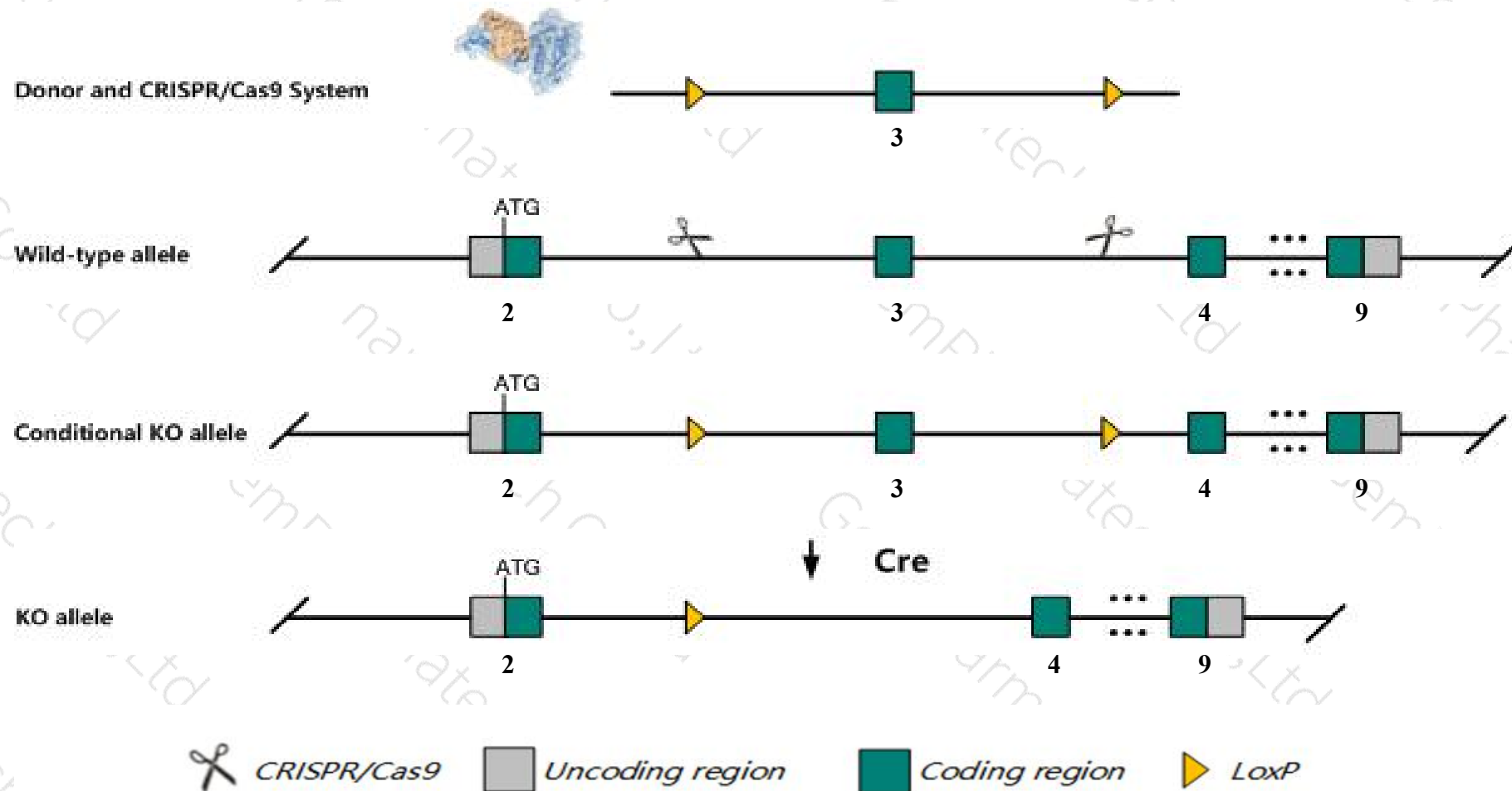
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Raly1* gene. The schematic diagram is as follows:



Technical routes

- The *Ralyl* gene has 7 transcripts. According to the structure of *Ralyl* gene, exon3 of *Ralyl*-206(ENSMUST00000193117.2) transcript is recommended as the knockout region. The region contains 76bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ralyl* 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 *Ralyl* gene is located on the Chr3. 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.
- Transcript *Ralyl-202/204* may not be affected.

Gene information (NCBI)

Raly1 RALY RNA binding protein-like [Mus musculus (house mouse)]

Gene ID: 76897, updated on 13-Mar-2020

Summary



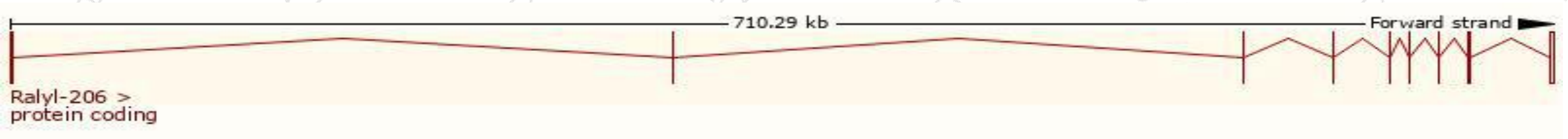
Official Symbol	Raly1 provided by MGI
Official Full Name	RALY RNA binding protein-like provided by MGI
Primary source	MGI:MGI:1924147
See related	Ensembl:ENSMUSG00000039717
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	0710005M24Rik
Expression	Biased expression in CNS E18 (RPKM 5.5), cerebellum adult (RPKM 4.8) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

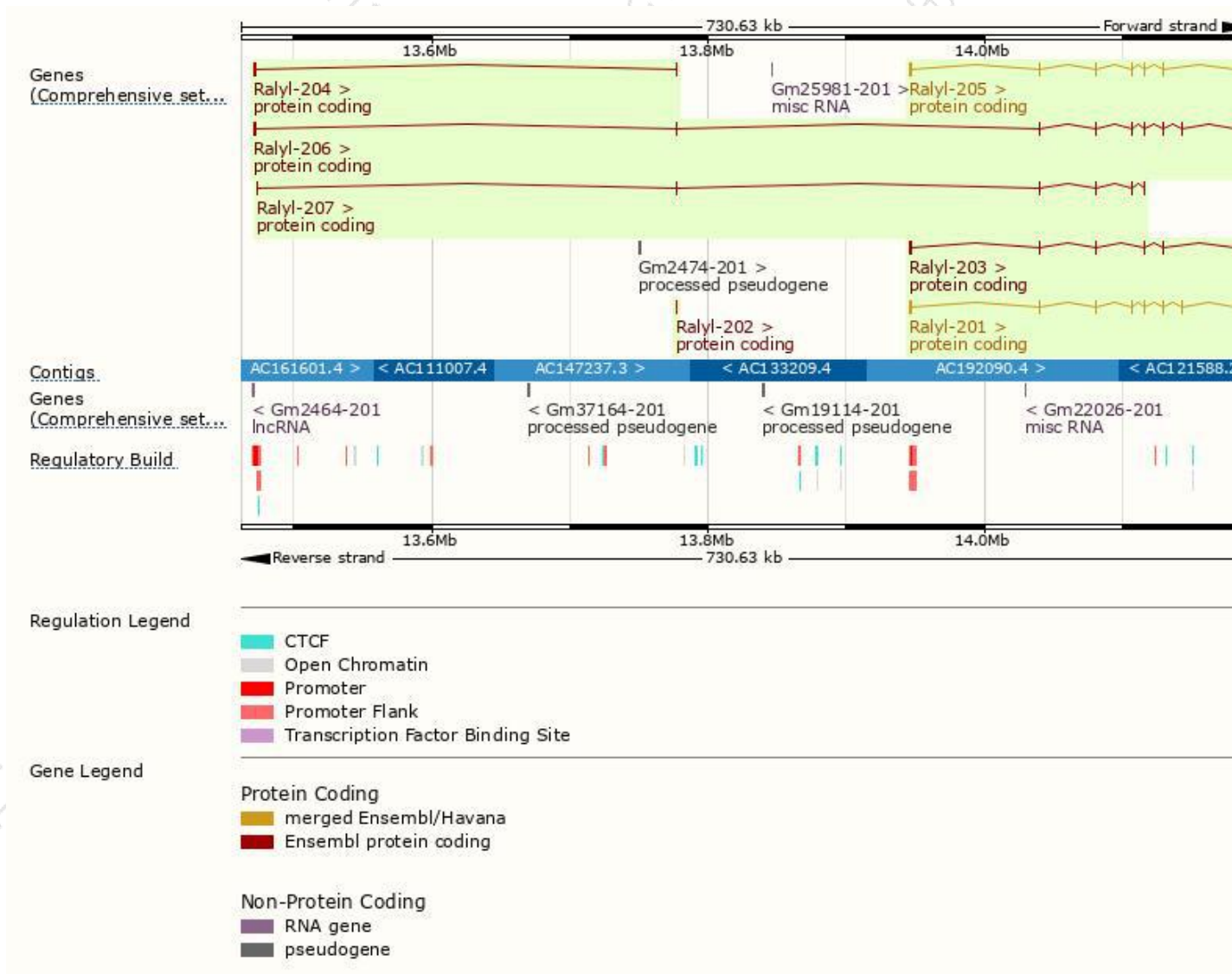
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ralyl-206	ENSMUST00000193117.2	2933	293aa	Protein coding	CCDS84609	Q8BTF8	TSL:2 GENCODE basic APPRIS P1
Ralyl-201	ENSMUST00000108372.3	1980	220aa	Protein coding	CCDS50863	Q8BTF8	TSL:1 GENCODE basic
Ralyl-205	ENSMUST00000192209.5	662	164aa	Protein coding	CCDS50864	A0A0A6YXQ8	TSL:3 GENCODE basic
Ralyl-203	ENSMUST00000171075.7	1459	148aa	Protein coding	-	E9Q5X7	TSL:5 GENCODE basic
Ralyl-207	ENSMUST00000211860.1	717	163aa	Protein coding	-	A0A1D5RLM5	CDS 3' incomplete TSL:5
Ralyl-204	ENSMUST00000191806.2	661	85aa	Protein coding	-	A0A1D5RLK6	CDS 3' incomplete TSL:2
Ralyl-202	ENSMUST00000108373.3	267	89aa	Protein coding	-	A0A1D5RMF0	TSL:5 GENCODE basic

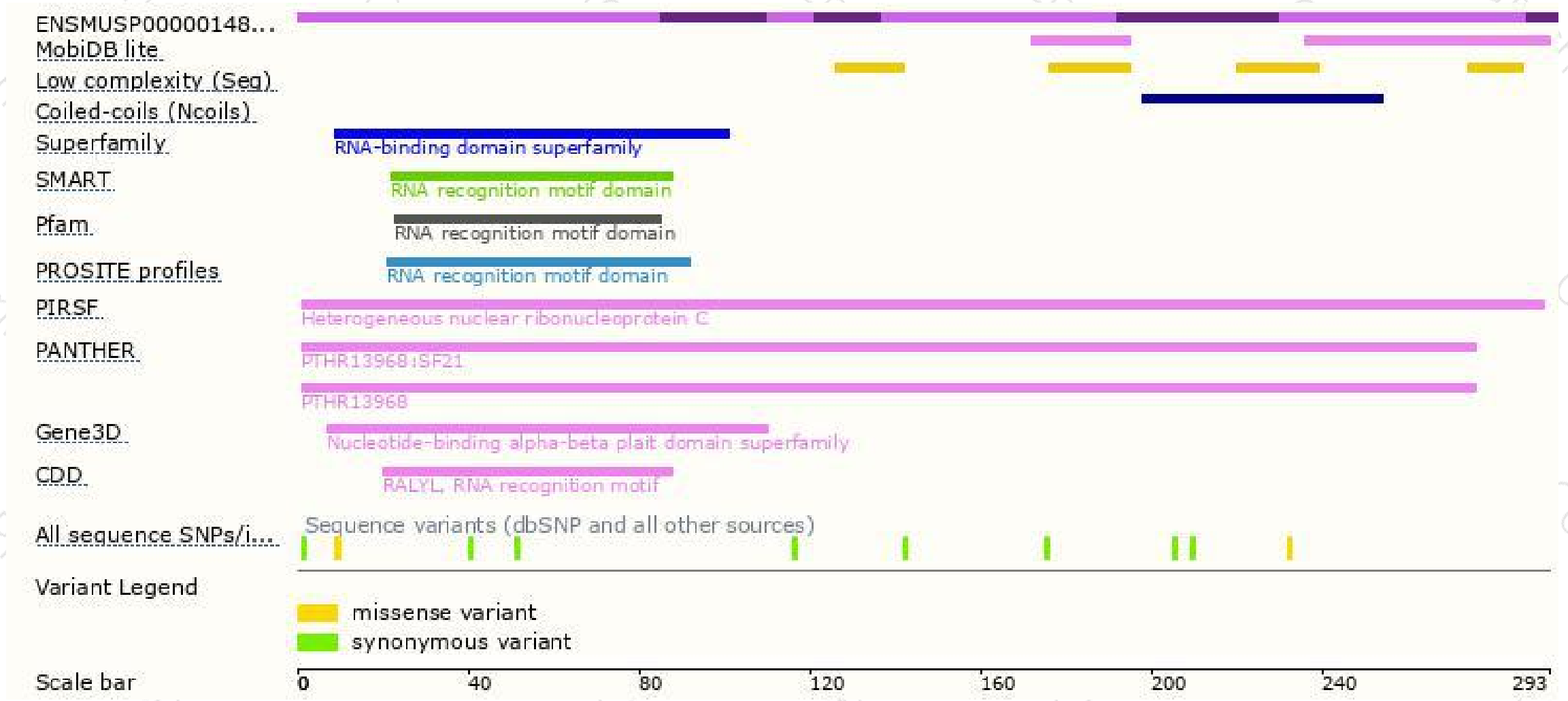
The strategy is based on the design of *Ralyl-206* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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