

Rnf130 Cas9-CKO Strategy

Designer:

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2019-7-24

Project Overview

Project Name

Rnf130

Project type

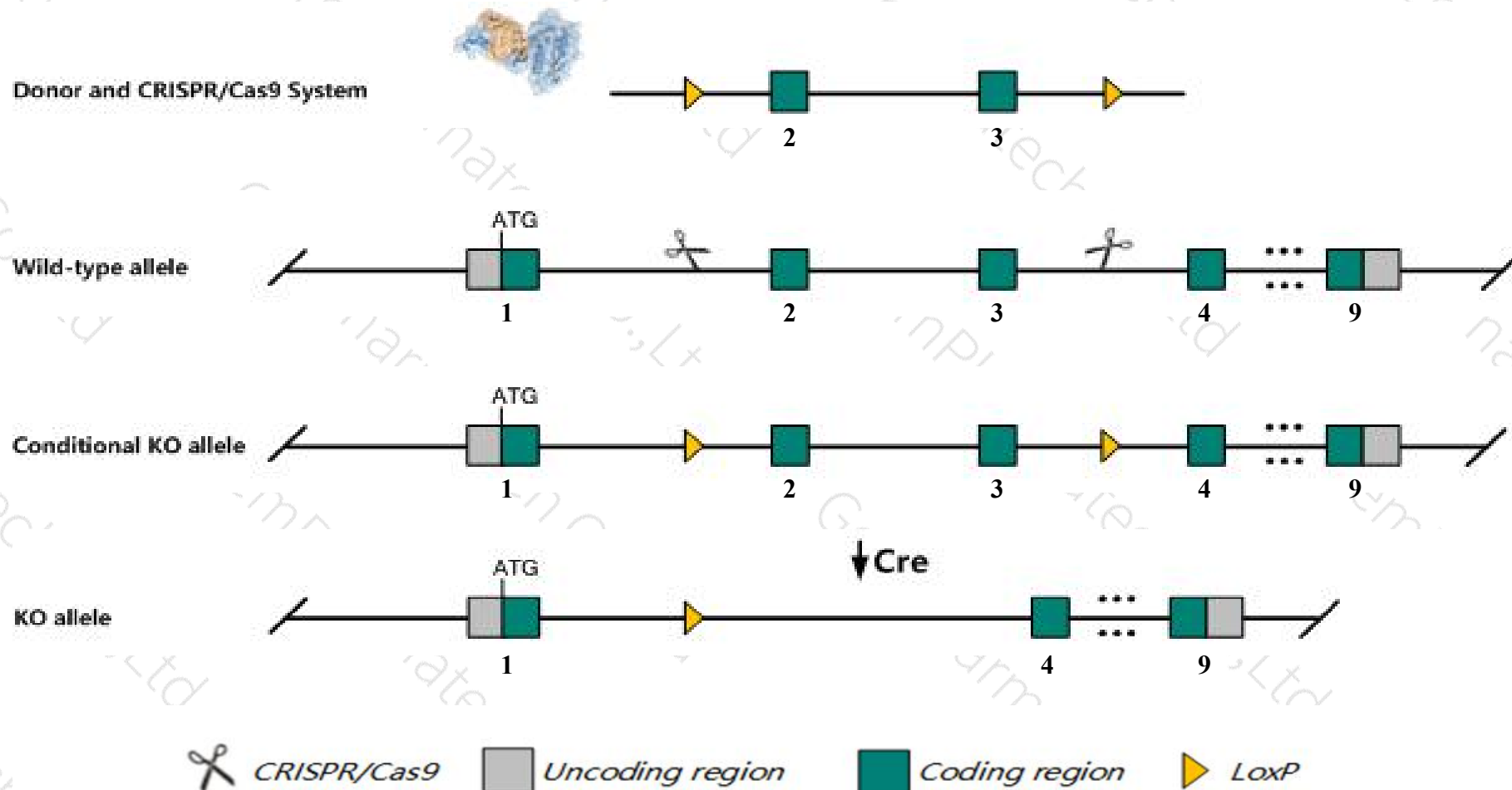
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rnfl30* gene. The schematic diagram is as follows:



Technical routes

- The *Rnf130* gene has 4 transcripts. According to the structure of *Rnf130* gene, exon2-exon3 of *Rnf130-201* (ENSMUST00000054684.13) transcript is recommended as the knockout region. The region contains 446bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rnf130* 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 *Rnfl30* gene is located on the Chr11. 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.
- The Strategy may affect the function of microRNA 340.

Gene information (NCBI)

Rnf130 ring finger protein 130 [Mus musculus (house mouse)]

Gene ID: 59044, updated on 31-Jan-2019

Summary



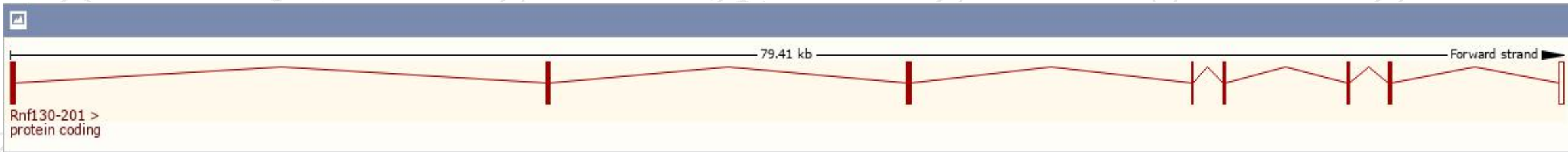
Official Symbol	Rnf130 provided by MGI
Official Full Name	ring finger protein 130 provided by MGI
Primary source	MGI:MGI:1891717
See related	Ensembl:ENSMUSG00000020376
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2510042A13Rik, G1RZFP, G1rp, GOLIATH, GP
Expression	Ubiquitous expression in CNS E18 (RPKM 19.6), whole brain E14.5 (RPKM 16.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

The gene has 4 transcripts,all transcripts are shown below:

Show/hide columns (1 hidden)							Filter	
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags	
Rnf130-202	ENSMUST00000102776.4	1502	419aa	Protein coding	CCDS24626	Q8VEM1	TSL:1	GENCODE basic APPRIS P3
Rnf130-201	ENSMUST00000054684.13	1415	384aa	Protein coding	CCDS78937	Q5SVR5	TSL:1	GENCODE basic APPRIS ALT2
Rnf130-204	ENSMUST00000238748.1	7879	419aa	Protein coding	-	-	GENCODE basic	APPRIS ALT2
Rnf130-203	ENSMUST00000143607.1	561	No protein	lncRNA	-	-	TSL:2	

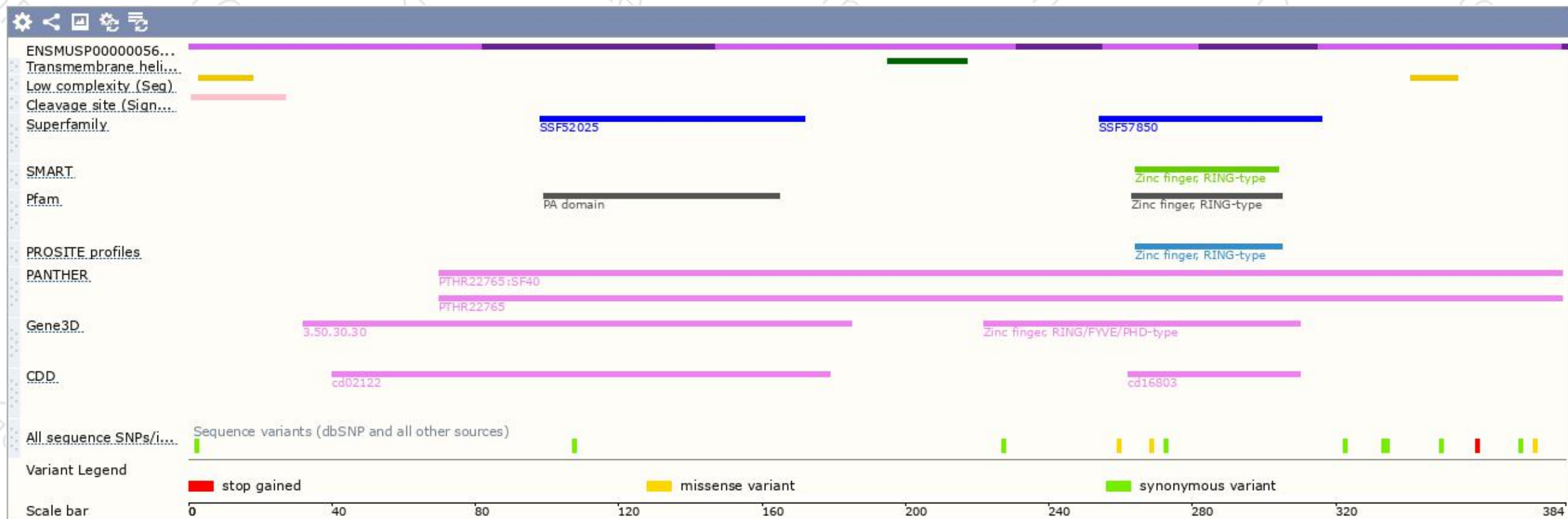
The strategy is based on the design of *Rnf130-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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