Rnf130 Cas9-KO Strategy

Designer: Yupeng Yang

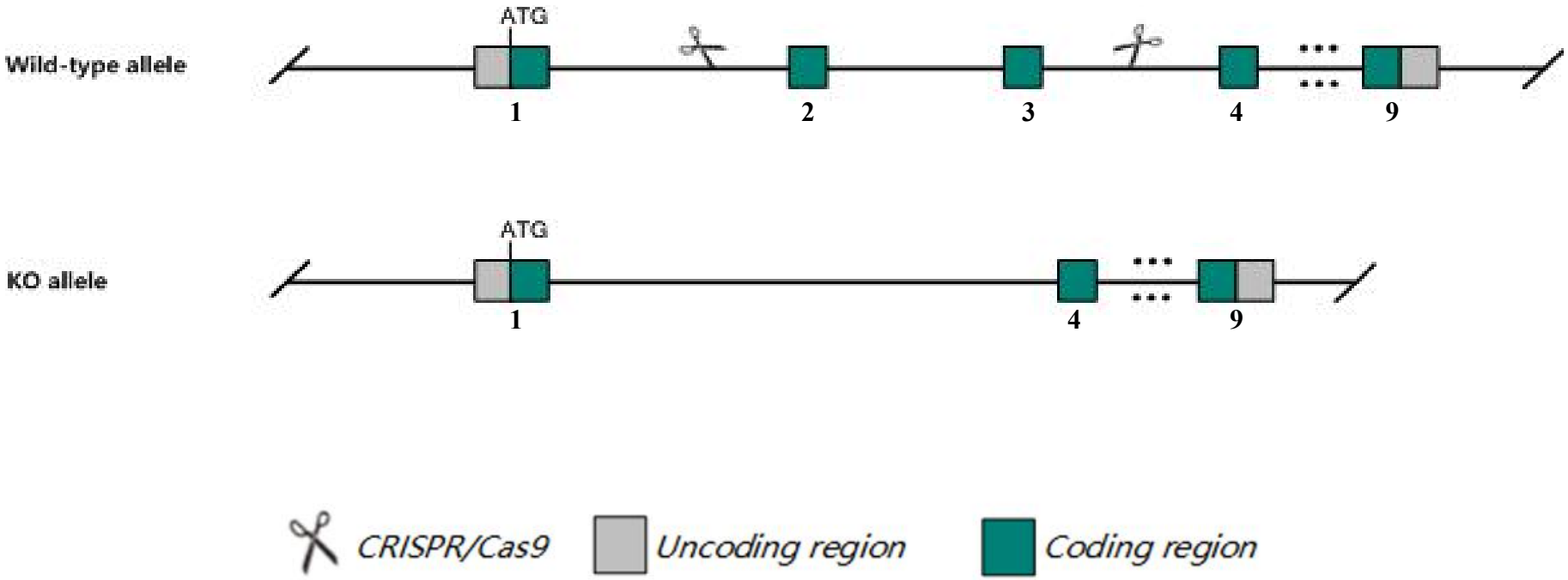
Design Date: 2019-7-24

Project Overview

Project Name	***Rnf130***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rnf130* gene. The schematic diagram is as follows:



Technical routes

The *Rnf130* gene has 3 transcripts. According to the structure of *Rnf130* gene, exon2-exon3 of *Rnf130-202* (ENSMUST00000102776.4) 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 systen

Notice

The *Rnf130* 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

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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:

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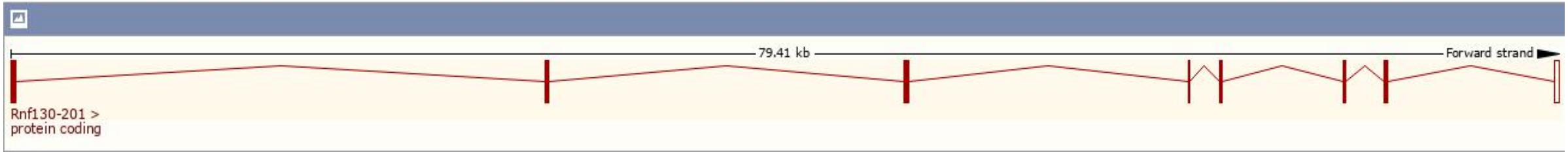
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rnf130-202	ENSMUST00000102776.4	1502	419aa	Protein coding	CCDS24626	Q8VEM1	TSL:1 GENCODE basic APPRIS P3
Rnf130-201	ENSMUST00000054684.13	1415	384aa	Protein coding	CCDS78937	Q5SVR5	TSL:1 GENCODE basic APPRIS ALT2
Rnf130-204	ENSMUST00000238748.1	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

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