

Nrbf2 Cas9-CKO Strategy

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Project Overview

Project Name

Nrbf2

Project type

Cas9-CKO

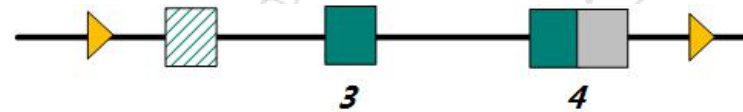
Strain background

C57BL/6JGpt

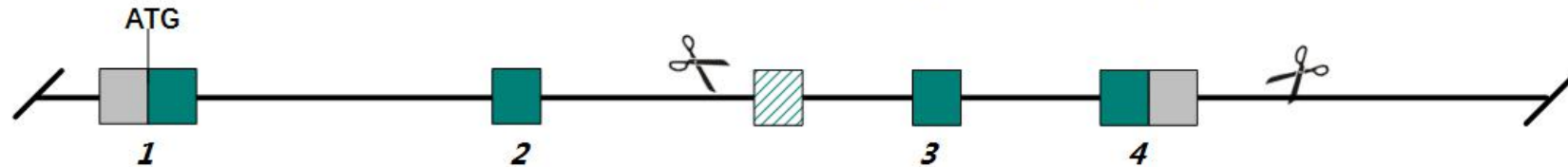
Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Nrbf2* gene. The schematic diagram is as follows:

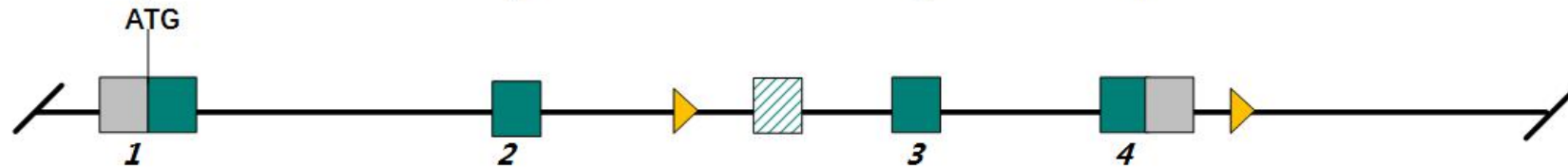
Donor and CRISPR/Cas9 System



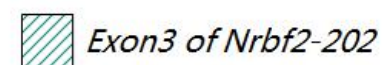
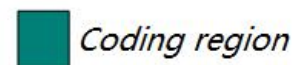
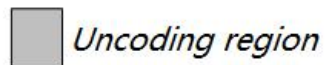
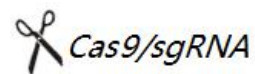
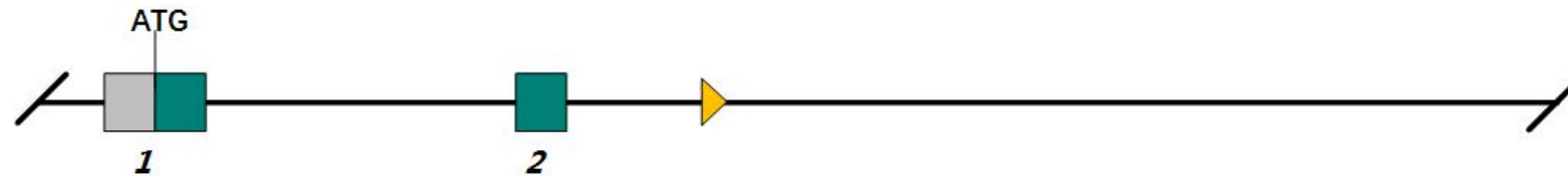
Wild-type allele



Conditional KO allele



KO allele



- The *Nrbf2* gene has 2 transcripts. According to the structure of *Nrbf2* gene, exon3-exon4 of *Nrbf2-201* (ENSMUST00000077839.12) transcript is recommended as the knockout region. The region contains most of coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Nrbf2* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA 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 *Nrbf2* gene is located on the Chr10. 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)

Nrbf2 nuclear receptor binding factor 2 [Mus musculus (house mouse)]

Gene ID: 641340, updated on 31-Jan-2019

Summary



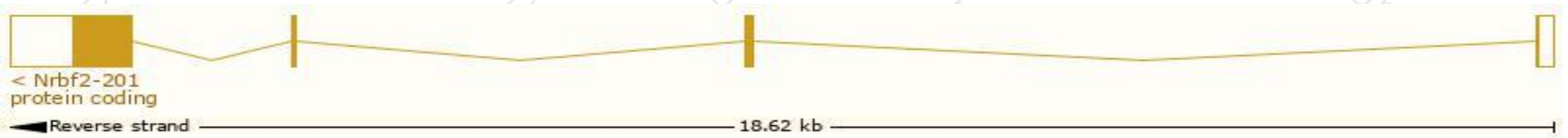
Official Symbol	Nrbf2 provided by MGI
Official Full Name	nuclear receptor binding factor 2 provided by MGI
Primary source	MGI:MGI:1354950
See related	Ensembl:ENSMUSG00000075000
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	NRBF-2
Expression	Ubiquitous expression in adrenal adult (RPKM 8.0), bladder adult (RPKM 6.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

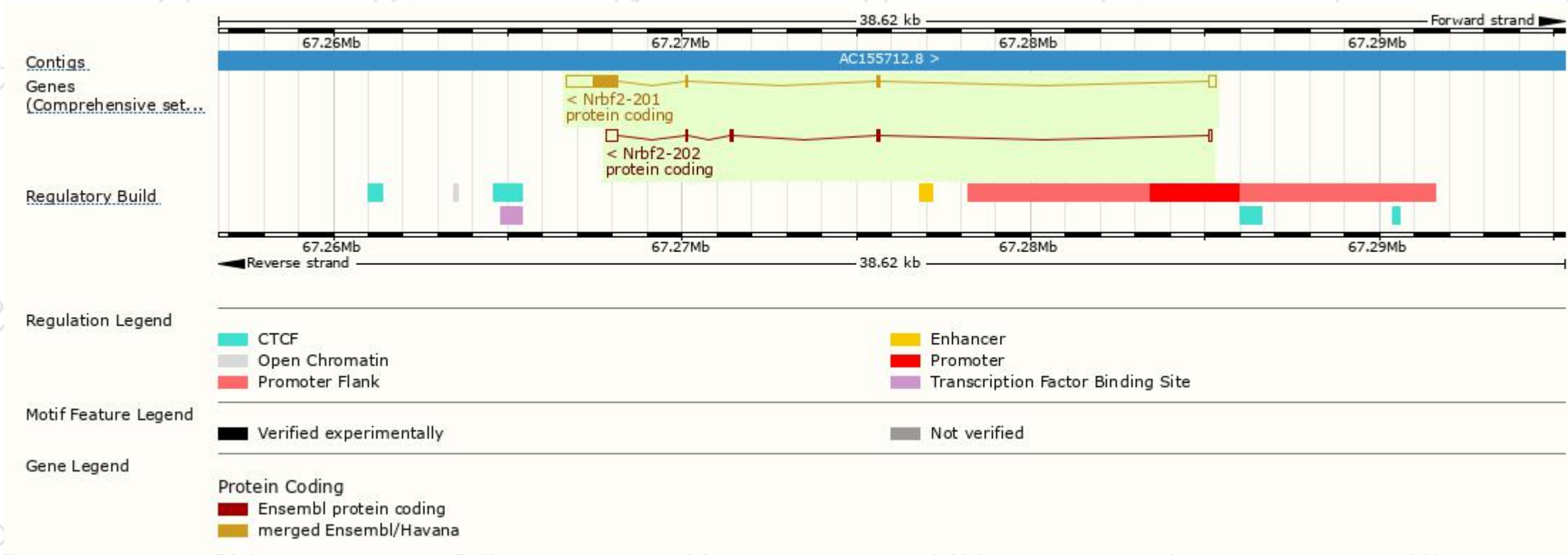
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nrbf2-201	ENSMUST00000077839.12	1813	287aa	Protein coding	CCDS23902	Q8VCQ3	TSL:1 GENCODE basic APPRIS P1
Nrbf2-202	ENSMUST00000159002.1	583	60aa	Protein coding	-	E0CZ57	TSL:3 GENCODE basic

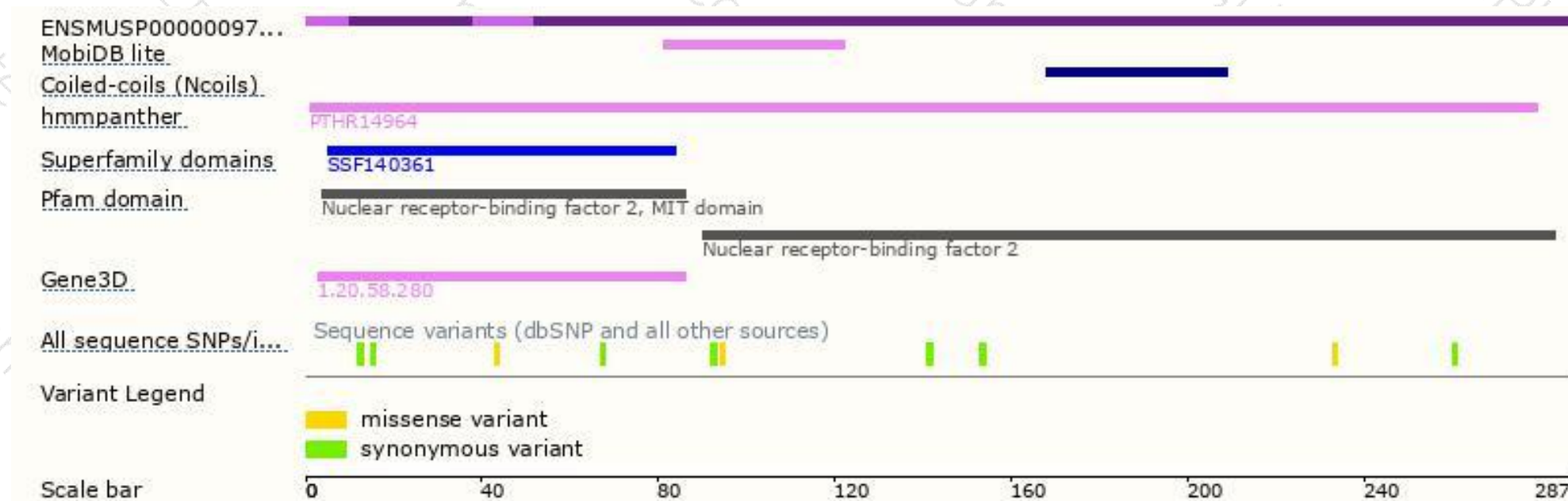
The strategy is based on the design of *Nrbf2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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