

Ncbp2 Cas9-CKO Strategy

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Project Overview

Project Name

Ncbp2

Project type

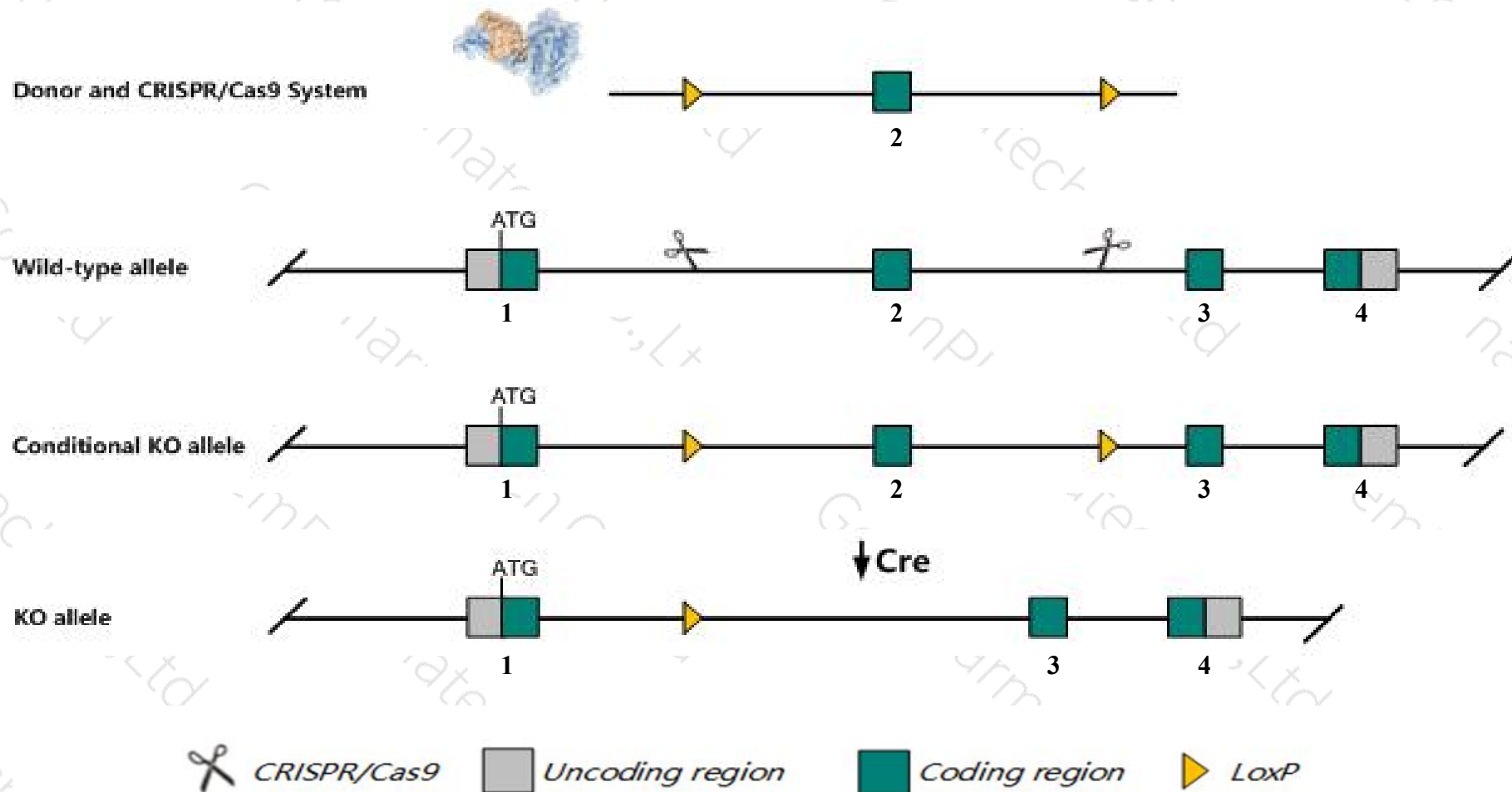
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ncbp2* gene. The schematic diagram is as follows:



Technical routes

- The *Ncbp2* gene has 4 transcripts. According to the structure of *Ncbp2* gene, exon2 of *Ncbp2-201* (ENSMUST00000023460.6) transcript is recommended as the knockout region. The region contains 182bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ncbp2* 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 *Ncbp2* gene is located on the Chr16. 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)

Ncbp2 nuclear cap binding protein subunit 2 [Mus musculus (house mouse)]

Gene ID: 68092, updated on 31-Jan-2019

Summary



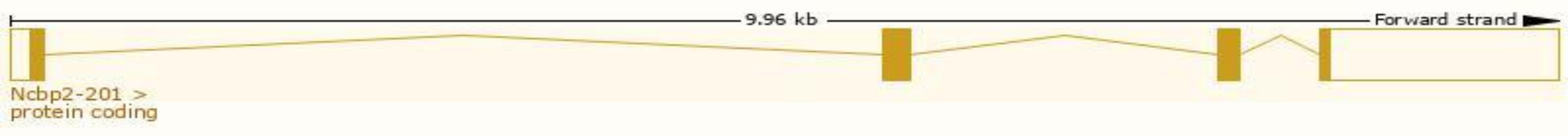
Official Symbol	Ncbp2 provided by MGI
Official Full Name	nuclear cap binding protein subunit 2 provided by MGI
Primary source	MGI:MGI:1915342
See related	Ensembl:ENSMUSG00000022774
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	20kDa, 5930413E18Rik, AA536802, AI843301, C79367
Expression	Broad expression in CNS E11.5 (RPKM 49.7), CNS E14 (RPKM 29.8) and 19 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

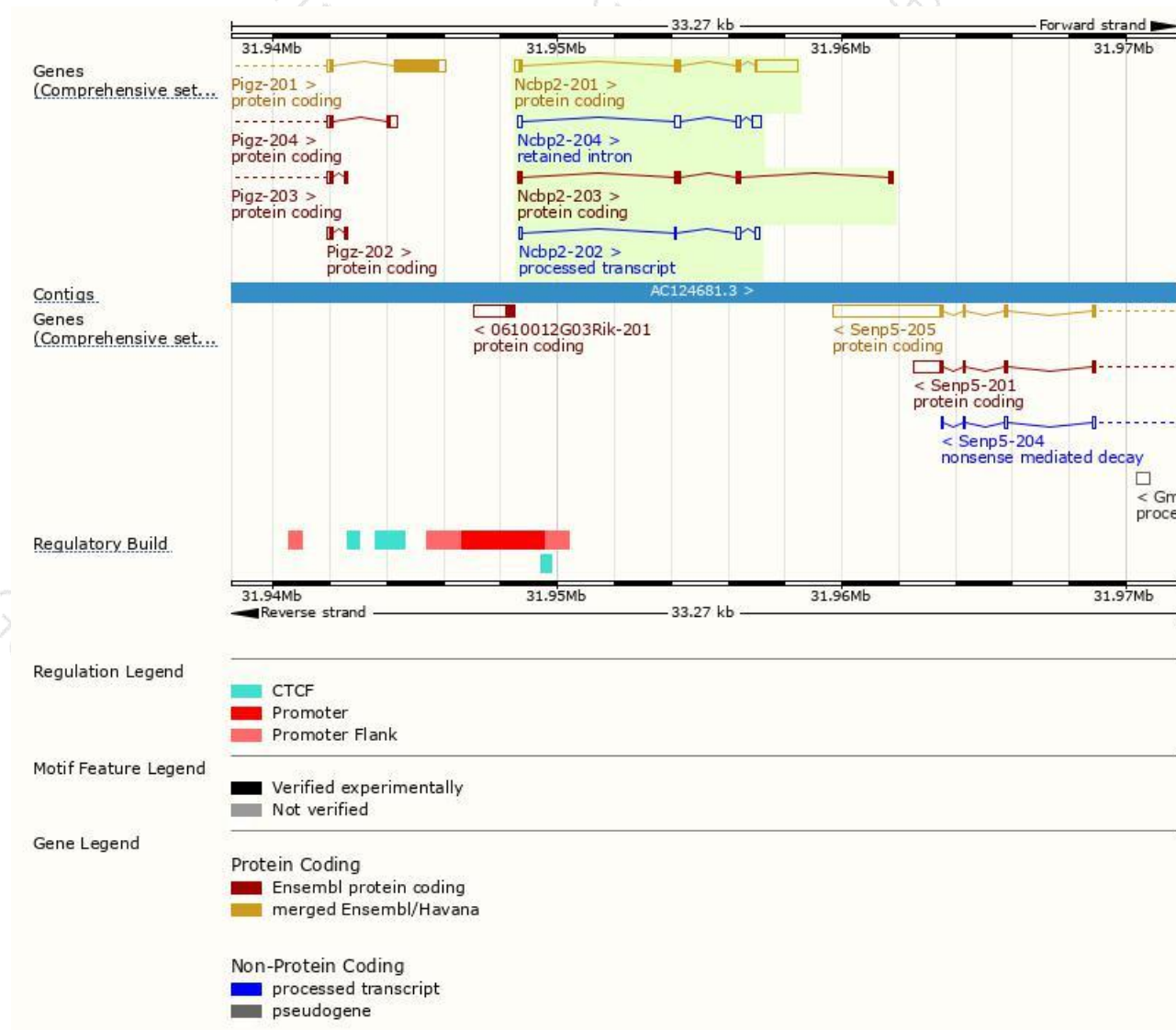
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ncbp2-201	ENSMUST00000023460.6	2070	156aa	Protein coding	CCDS28110	Q9CQ49	TSL:1 GENCODE basic APPRIS P1
Ncbp2-203	ENSMUST00000126215.1	574	165aa	Protein coding	-	A0A338P7L9	TSL:5 GENCODE basic
Ncbp2-202	ENSMUST00000115178.2	391	No protein	Processed transcript	-	-	TSL:5
Ncbp2-204	ENSMUST00000140965.7	762	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Ncbp2-201* transcript,The transcription is shown below



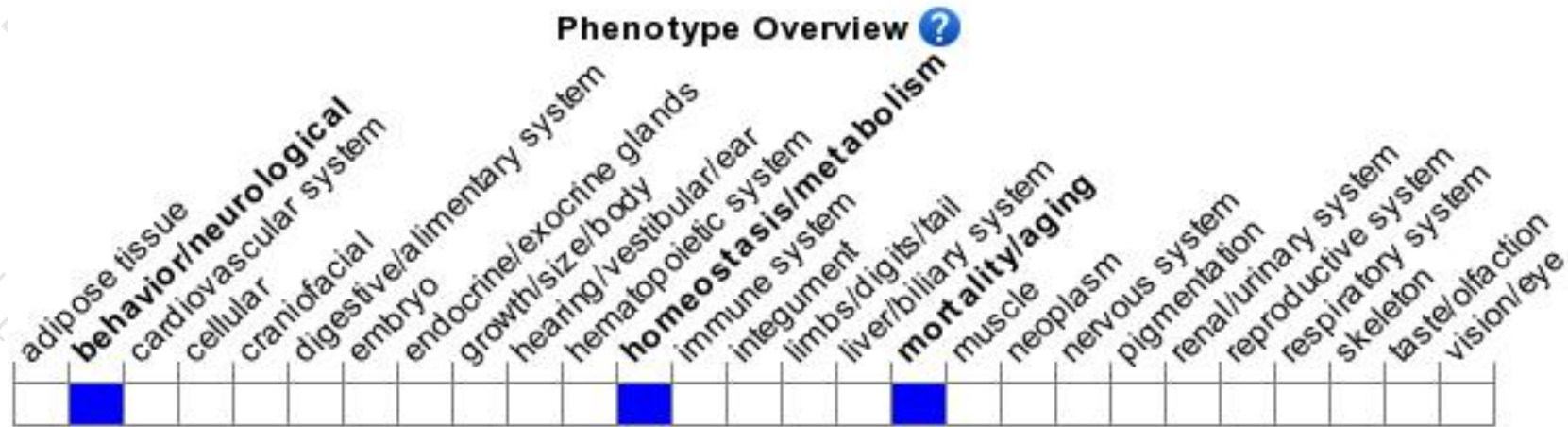
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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