

Ncan Cas9-KO Strategy

Designer: Xueting Zhang

Design Date: 2019-7-29

Project Overview

Project Name

Ncan

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Ncan* gene has 1 transcript. According to the structure of *Ncan* gene, exon3-exon12 of *Ncan-201* (ENSMUST00000002412.8) transcript is recommended as the knockout region. The region contains 3275bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ncan* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Mice homozygous for targeted null mutations are viable and fertile and exhibit normal behavior and brain anatomy; however, mild defects in long term potentiation were noted.
- Because of *Mir7066* gene is located in *Ncan* gene, *Mir7066* gene will be deleted together in this strategy.
- The *Ncan* gene is located on the Chr8. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Ncan neurocan [Mus musculus (house mouse)]

Gene ID: 13004, updated on 31-Jan-2019

Summary



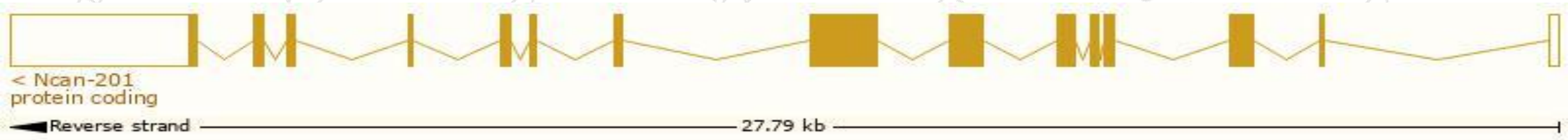
Official Symbol	Ncan provided by MGI
Official Full Name	neurocan provided by MGI
Primary source	MGI:MGI:104694
See related	Ensembl:ENSMUSG00000002341
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C230035B04, Cspg3, Cspg3-rs, Tgfbt
Expression	Biased expression in whole brain E14.5 (RPKM 31.9), CNS E18 (RPKM 28.5) and 6 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

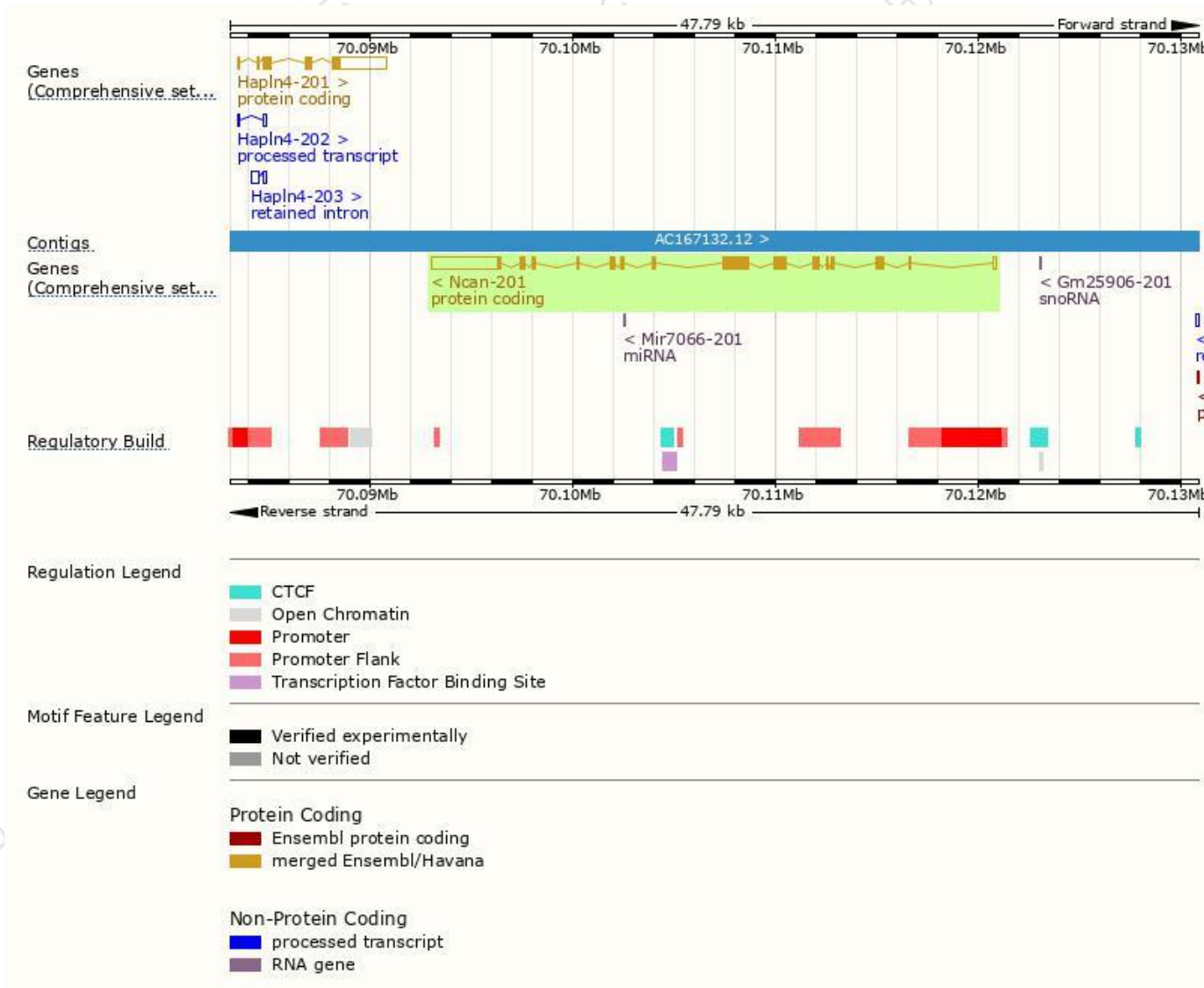
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ncan-201	ENSMUST00000002412.8	7195	1268aa	Protein coding	CCDS22358	A0A0R4IZX5	TSL:1 GENCODE basic APPRIS P1

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



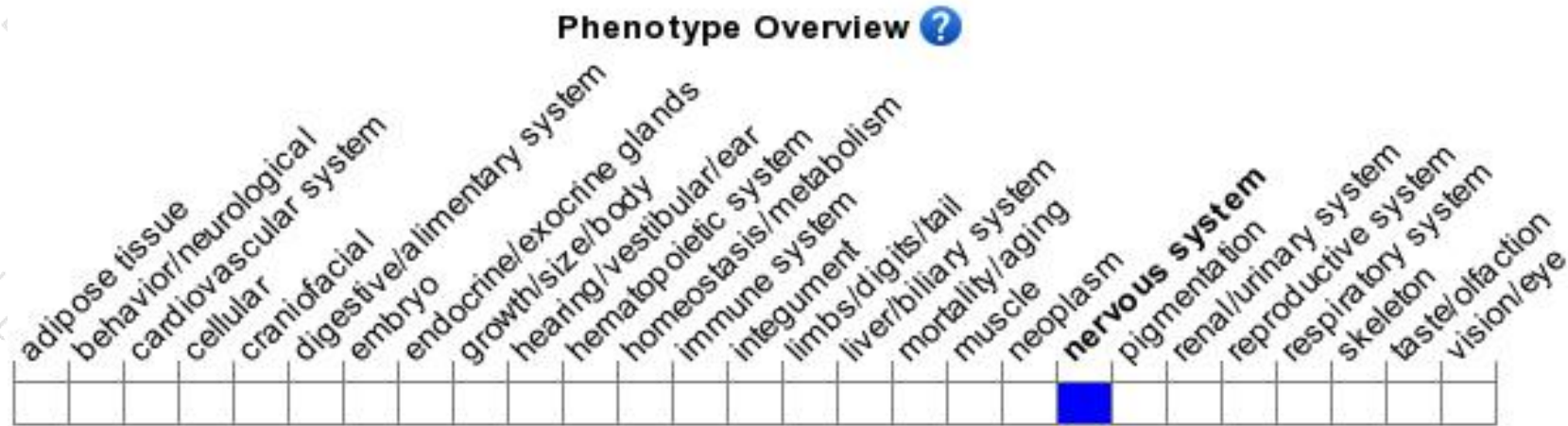
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for targeted null mutations are viable and fertile and exhibit normal behavior and brain anatomy; however, mild defects in long term potentiation were noted.

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

Tel: 400-9660890

