

Ncs1 Cas9-KO Strategy

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Design Date:

2020-2-17

Project Overview

Project Name

Ncs1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ncs1* gene. The schematic diagram is as follows:



- The *Ncs1* gene has 2 transcripts. According to the structure of *Ncs1* gene, exon2 of *Ncs1-201* (ENSMUST00000000199.7) transcript is recommended as the knockout region. The region contains 25bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ncs1* gene. The brief process is as follows: CRISPR/Cas9 system v

- The *Ncs1* gene is located on the Chr2. 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)

Ncs1 neuronal calcium sensor 1 [Mus musculus (house mouse)]

Gene ID: 14299, updated on 31-Jan-2019

Summary



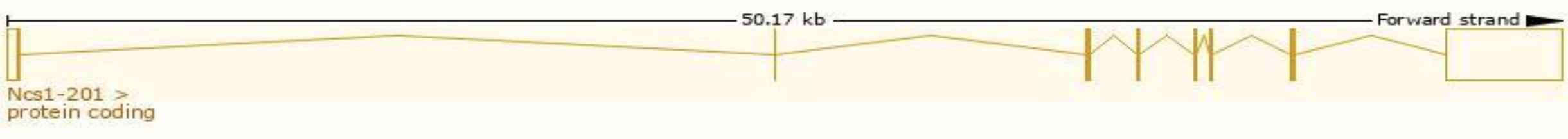
Official Symbol	Ncs1 provided by MGI
Official Full Name	neuronal calcium sensor 1 provided by MGI
Primary source	MGI:MGI:109166
See related	Ensembl:ENSMUSG00000062661
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9430075O15Rik, A730032G13Rik, AI836659, Freq, Mfreq, NCS-1
Expression	Biased expression in cortex adult (RPKM 41.2), frontal lobe adult (RPKM 39.3) and 11 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
Ncs1-201	ENSMUST00000000199.7	4653	190aa	Protein coding	CCDS15896	Q8BNY6	TSL:1 Gencode basic APPRIS P1
Ncs1-202	ENSMUST00000150670.1	498	82aa	Nonsense mediated decay	-	A0A0A6YY43	TSL:5

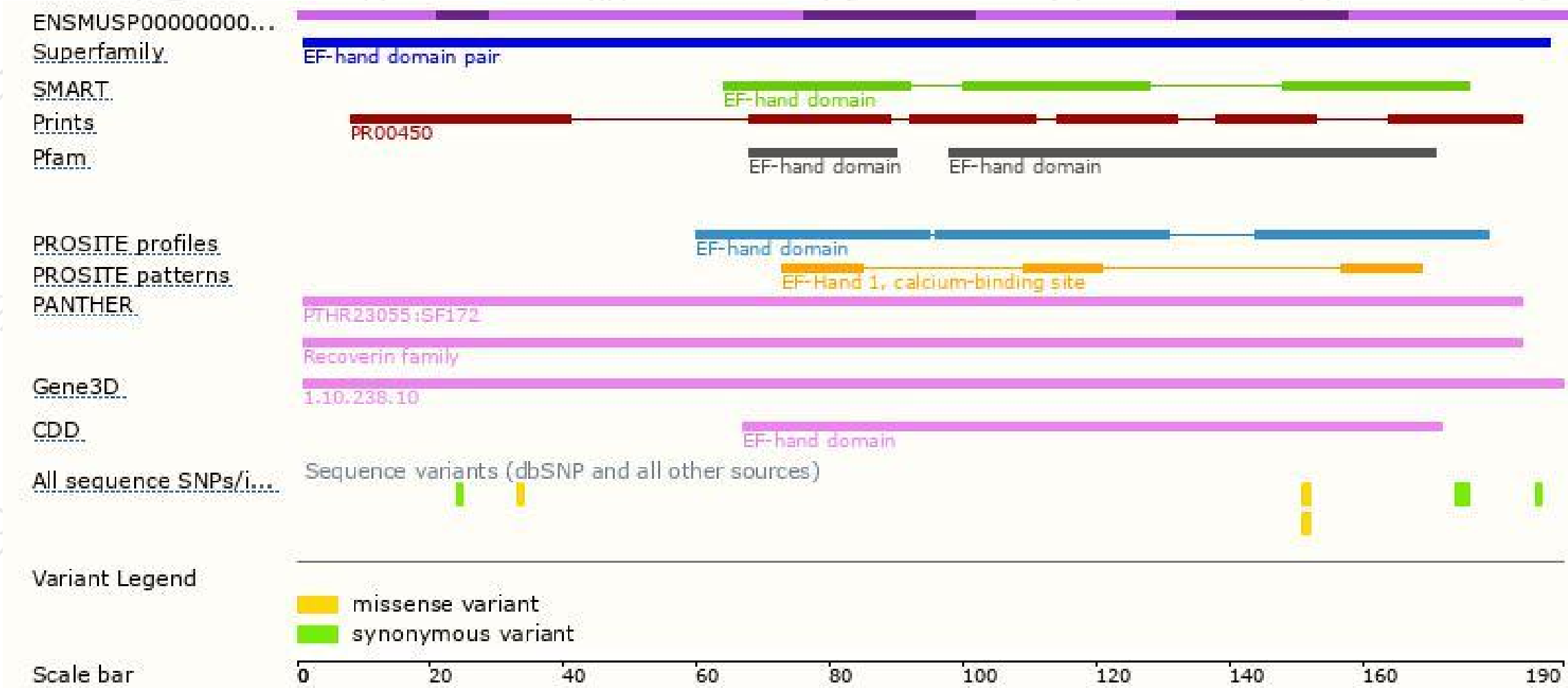
The strategy is based on the design of *Ncs1-201* transcript,The transcription is shown below



Genomic location distribution

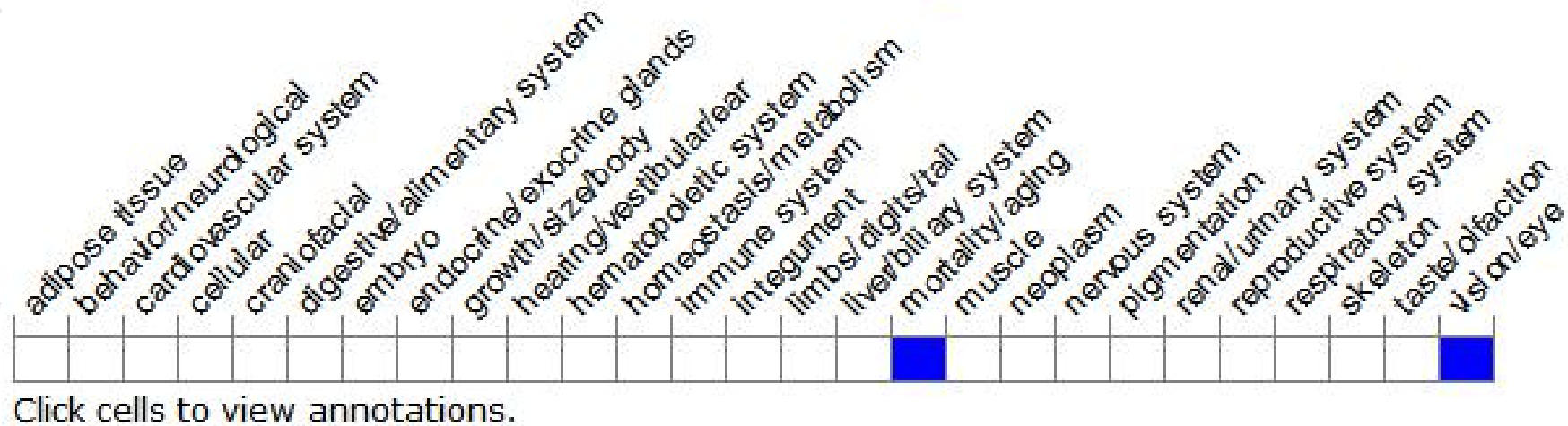


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview ?



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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