

Nptx1 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Nptx1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Nptx1* gene. The schematic diagram is as follows:



- The *Nptx1* gene has 1 transcript. According to the structure of *Nptx1* gene, exon3-exon5 of *Nptx1-201* (ENSMUST00000026670.4) transcript is recommended as the knockout region. The region contains 647bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Nptx1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null mutation of this gene display a mild alteration in retinal ganglion cell innervation but are fertile with no obvious behavioral abnormalities.
- The *Nptx1* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Nptx1 neuronal pentraxin 1 [Mus musculus (house mouse)]

Gene ID: 18164, updated on 31-Jan-2019

Summary



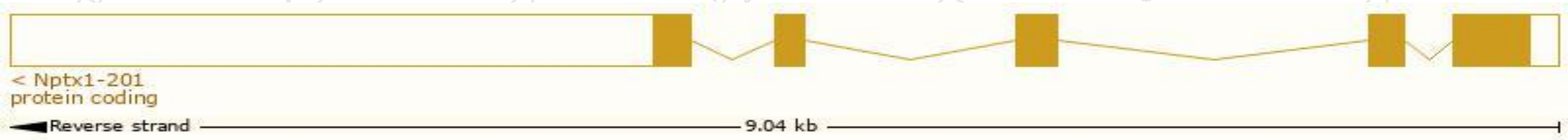
Official Symbol	Nptx1 provided by MGI
Official Full Name	neuronal pentraxin 1 provided by MGI
Primary source	MGI:MGI:107811
See related	Ensembl:ENSMUSG00000025582
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	D11Bwg1004e, Np1
Expression	Biased expression in cerebellum adult (RPKM 59.4), cortex adult (RPKM 31.6) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

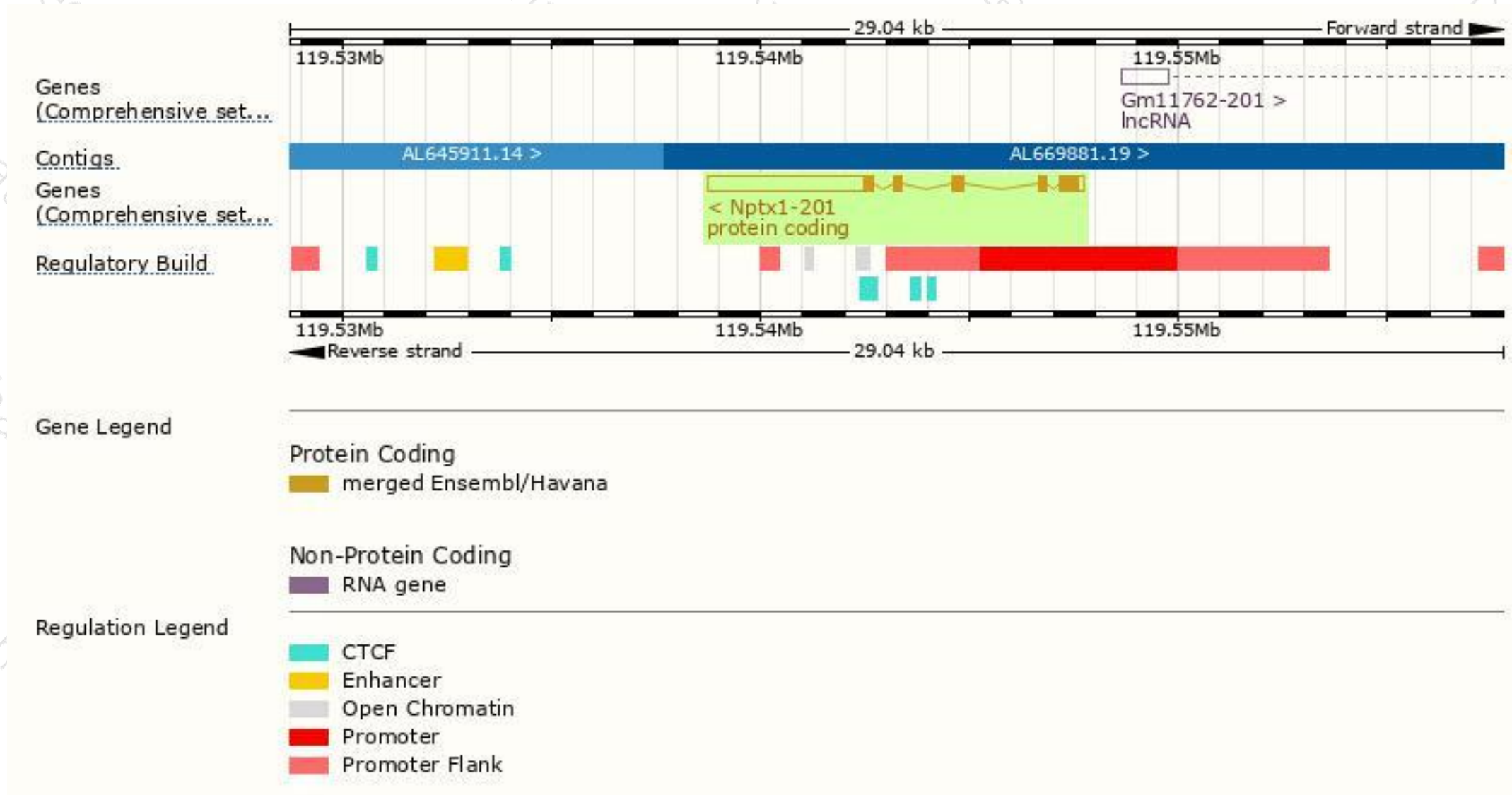
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nptx1-201	ENSMUST00000026670.4	5217	432aa	Protein coding	CCDS25719	A2ACL9_Q62443	TSL:1 GENCODE basic APPRIS P1

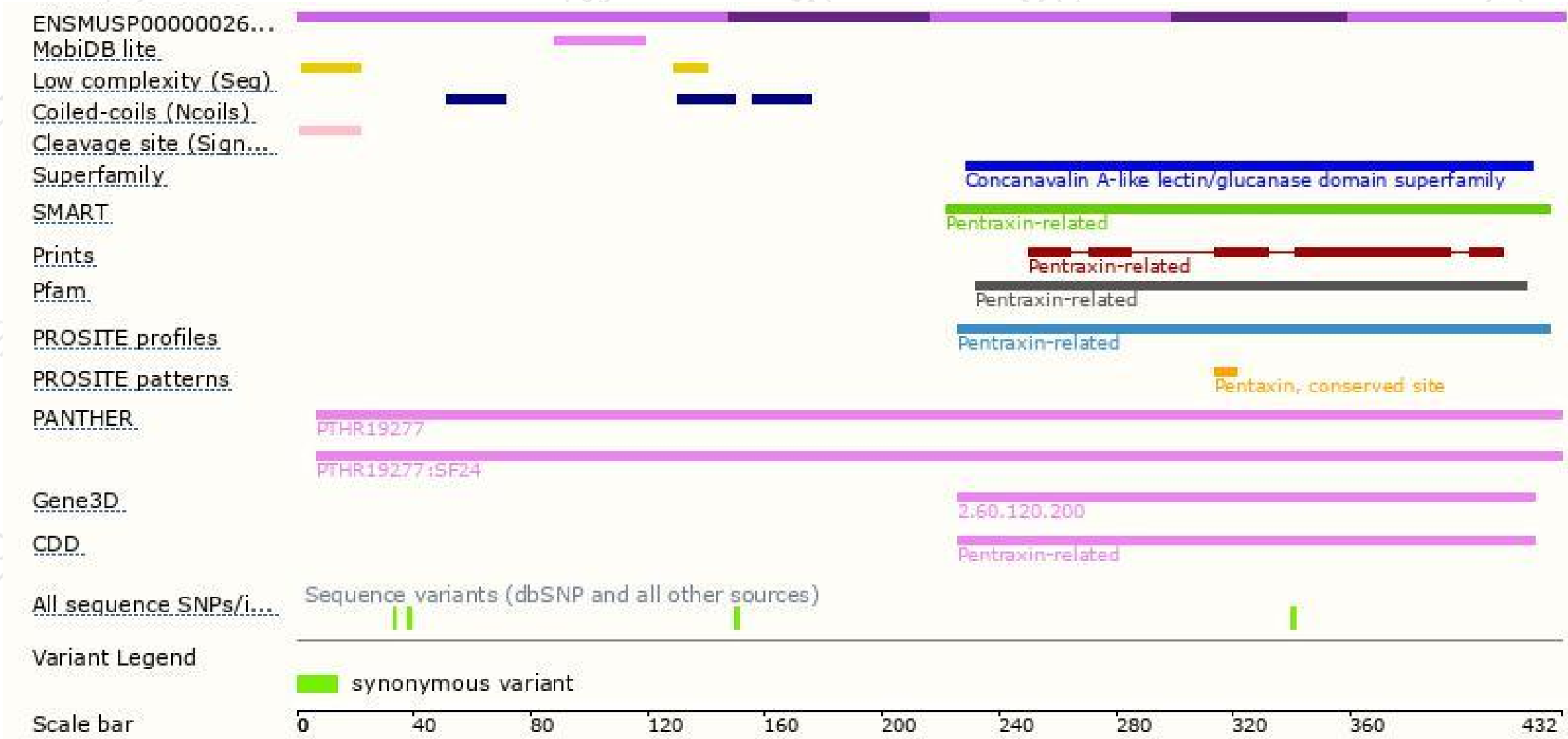
The strategy is based on the design of *Nptx1-201* transcript, The transcription is shown below



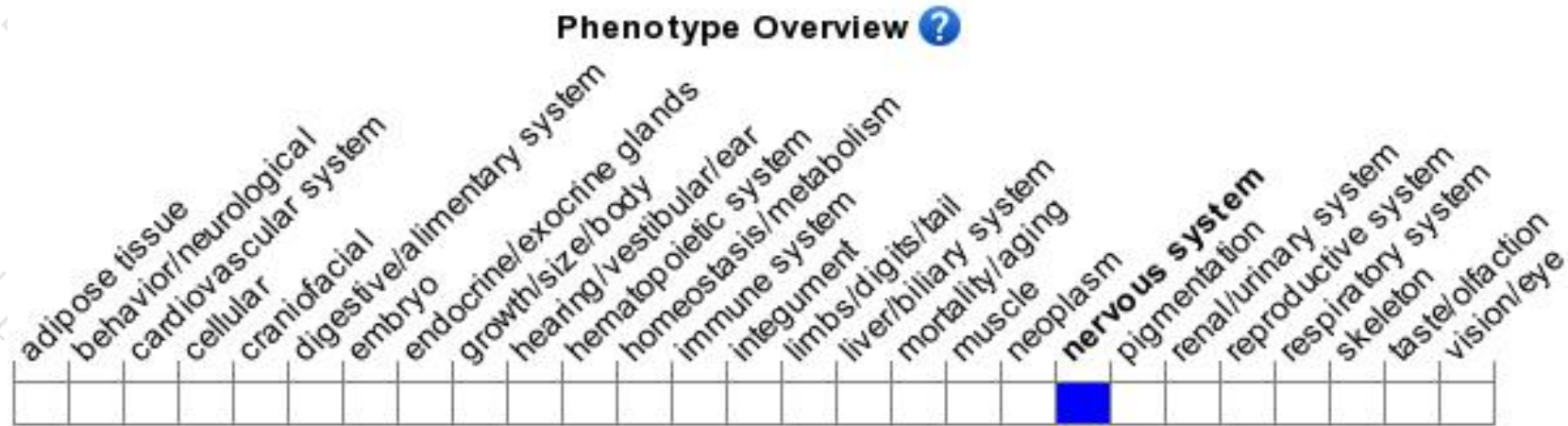
Genomic location distribution



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 a null mutation of this gene display a mild alteration in retinal ganglion cell innervation but are fertile with no obvious behavioral abnormalities.

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

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