

Nts Cas9-KO Strategy

Designer:

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Design Date:

2019-8-5

Project Overview

Project Name

Nts

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Nts* gene has 1 transcript. According to the structure of *Nts* gene, exon2 of *Nts-201* (ENSMUST00000020040.4) transcript is recommended as the knockout region. The region contains 62bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Nts* gene. The brief process is as follows: CRISPR/Cas9 system will

- According to the existing MGI data, Mice homozygous for a targeted null mutation are viable, fertile, and grossly normal, but display altered responses to antipsychotic drugs.
- The *Nts* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Nts neurotensin [Mus musculus (house mouse)]

Gene ID: 67405, updated on 5-Mar-2019

Summary



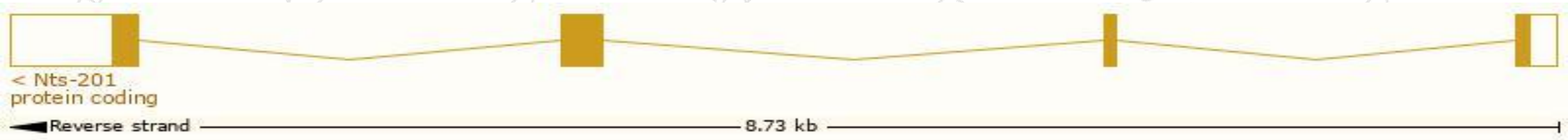
Official Symbol	Nts provided by MGI
Official Full Name	neurotensin provided by MGI
Primary source	MGI:MGI:1328351
See related	Ensembl:ENSMUSG00000019890
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	5033428E16Rik, NMN-125, NN, NT, NT/N, NTS1
Expression	Biased expression in CNS E18 (RPKM 17.8), large intestine adult (RPKM 7.5) and 4 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

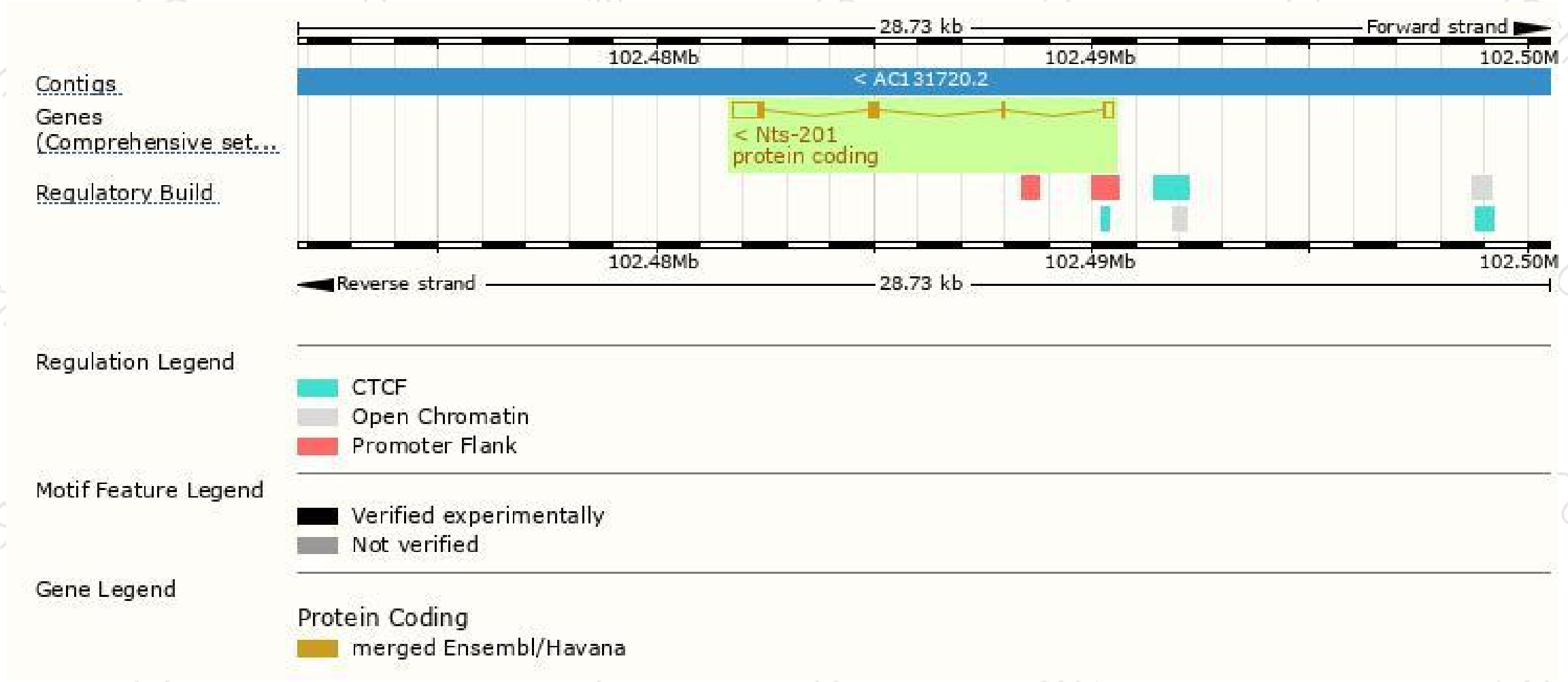
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nts-201	ENSMUST00000020040.4	1248	169aa	Protein coding	CCDS24154	Q9D3P9	TSL:1 GENCODE basic APPRIS P1

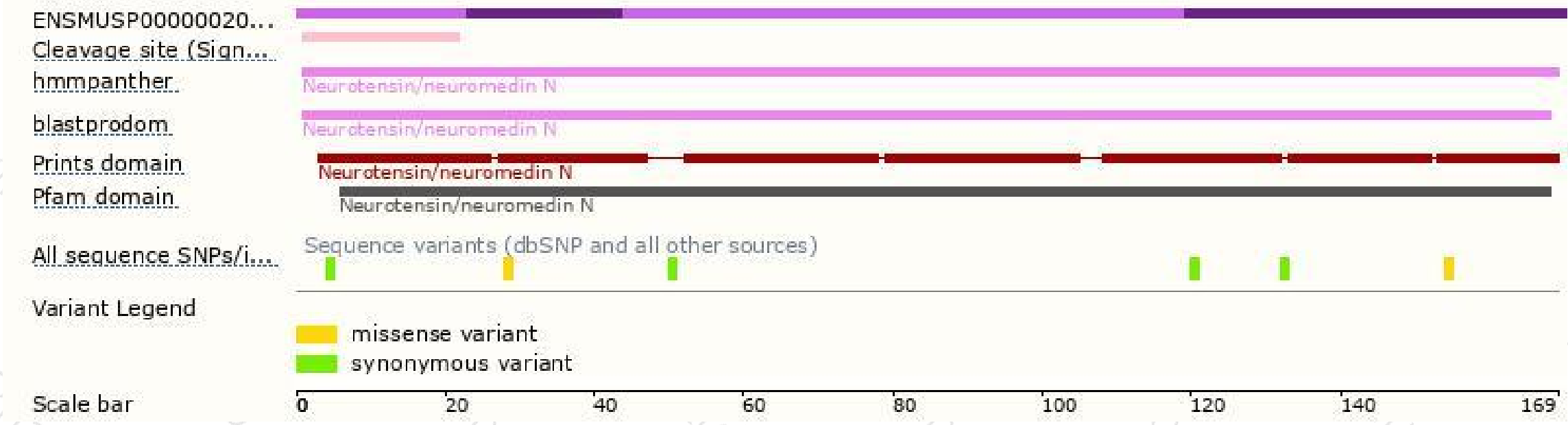
The strategy is based on the design of *Nts-201* transcript, The transcription is shown below



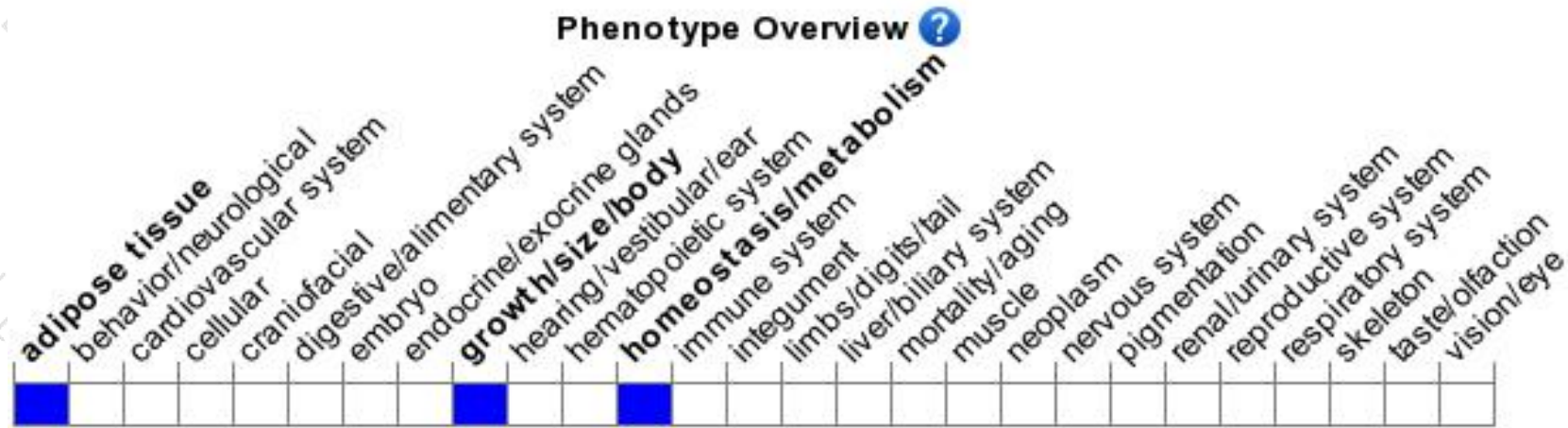
Genomic location distribution



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 targeted null mutation are viable, fertile, and grossly normal, but display altered responses to antipsychotic drugs.

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

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