

Naa50 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Naa50

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Naa50* gene. The schematic diagram is as follows:



- The *Naa50* gene has 4 transcripts. According to the structure of *Naa50* gene, exon2-exon3 of *Naa50-204* (ENSMUST00000161326.7) transcript is recommended as the knockout region. The region contains 257bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Naa50* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Naa50* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Naa50 N(alpha)-acetyltransferase 50, NatE catalytic subunit [*Mus musculus* (house mouse)]

Gene ID: 72117, updated on 15-Aug-2019

Summary

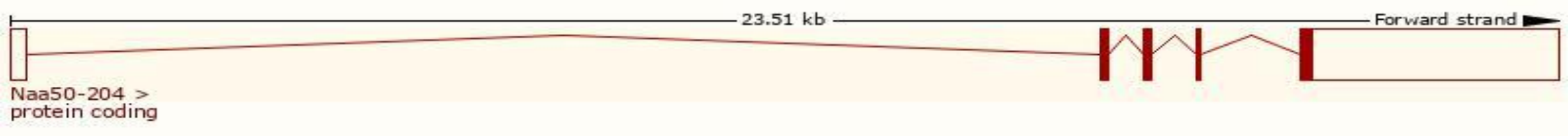
Official Symbol	Naa50 provided by MGI
Official Full Name	N(alpha)-acetyltransferase 50, NatE catalytic subunit provided by MGI
Primary source	MGI:MGI:1919367
See related	Ensembl:ENSMUSG000000022698
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	San; Mak3; Nat5; Mak3p; Nat13; AW112078; 2600005K24Rik; 2810441M03Rik
Expression	Ubiquitous expression in CNS E11.5 (RPKM 17.1), liver E14 (RPKM 15.4) and 28 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
Naa50-204	ENSMUST00000161326.7	4487	169aa	Protein coding	CCDS84236	Q6PGB6	TSL:1 GENCODE basic APPRIS ALT 1
Naa50-201	ENSMUST00000063520.14	3557	168aa	Protein coding	CCDS28183	Q6PGB6	TSL:1 GENCODE basic APPRIS P3
Naa50-203	ENSMUST00000159514.7	3756	175aa	Protein coding	-	Q6PGB6	TSL:1 GENCODE basic
Naa50-202	ENSMUST00000063542.7	2136	129aa	Protein coding	-	Q6PGB6	TSL:1 GENCODE basic

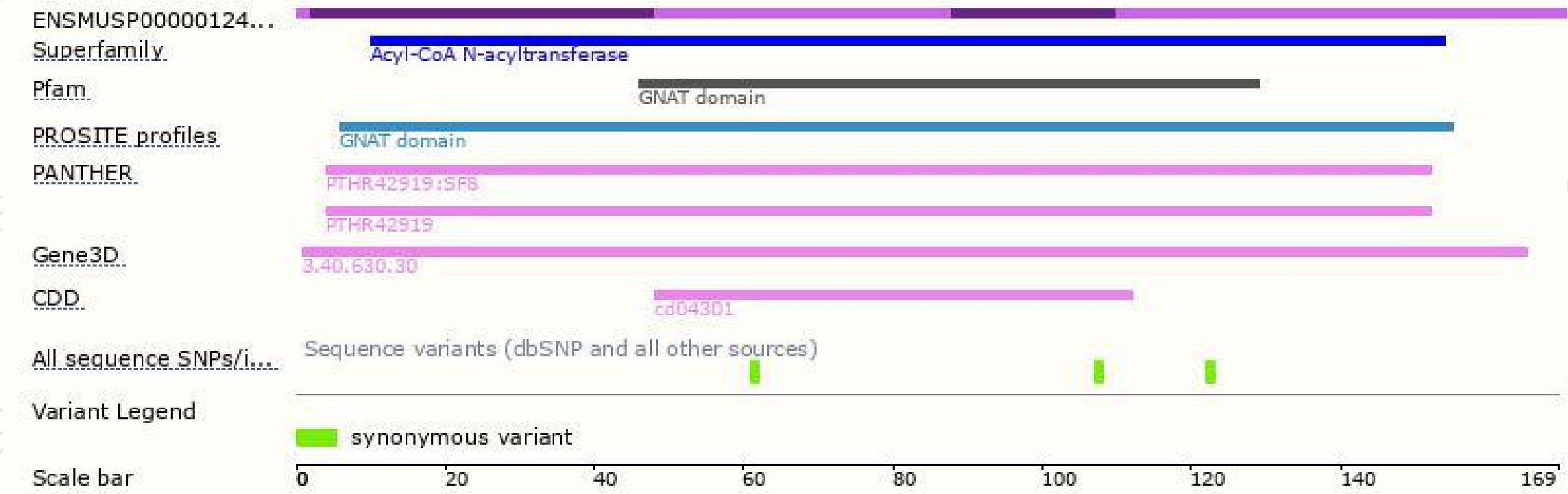
The strategy is based on the design of *Naa50-204* transcript,The transcription is shown below



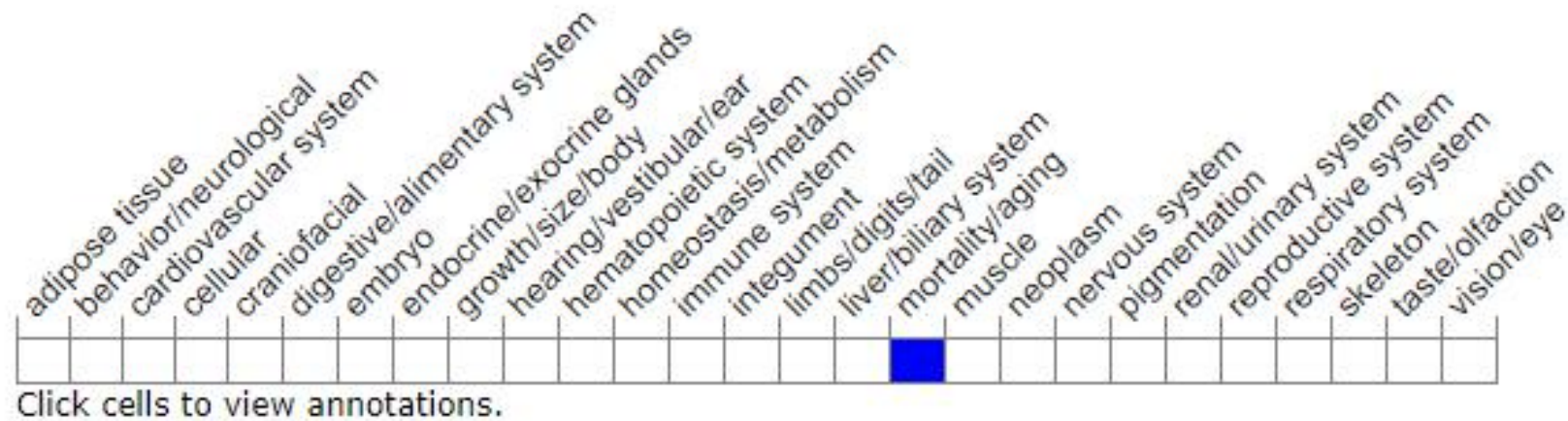
Genomic location distribution



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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