

Nnmt Cas9-CKO Strategy

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Reviewer:

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Design Date:

2019-10-30

Project Overview

Project Name

Nnmt

Project type

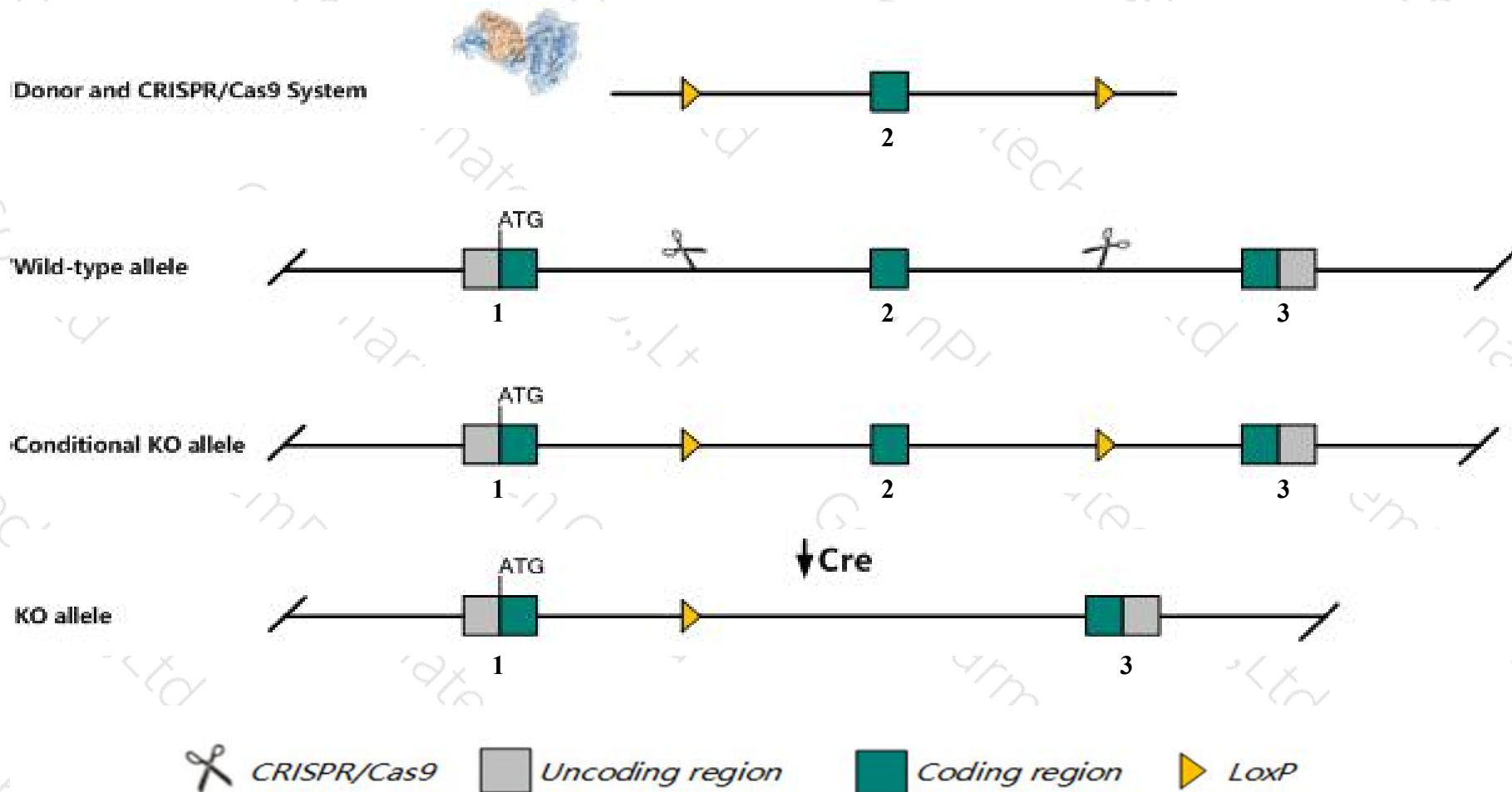
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



Technical routes

- The *Nnmt* gene has 5 transcripts. According to the structure of *Nnmt* gene, exon2 of *Nnmt-201* (ENSMUST00000034808.11) transcript is recommended as the knockout region. The region contains 208bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Nnmt* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Nnmt* gene is located on the Chr9. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Nnmt nicotinamide N-methyltransferase [Mus musculus (house mouse)]

Gene ID: 18113, updated on 31-Jan-2019

Summary



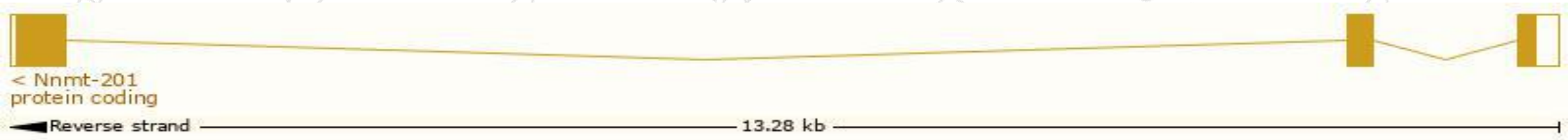
Official Symbol	Nnmt provided by MGI
Official Full Name	nicotinamide N-methyltransferase provided by MGI
Primary source	MGI:MGI:1099443
See related	Ensembl:ENSMUSG00000032271
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Biased expression in liver adult (RPKM 9.1), subcutaneous fat pad adult (RPKM 7.8) and 7 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

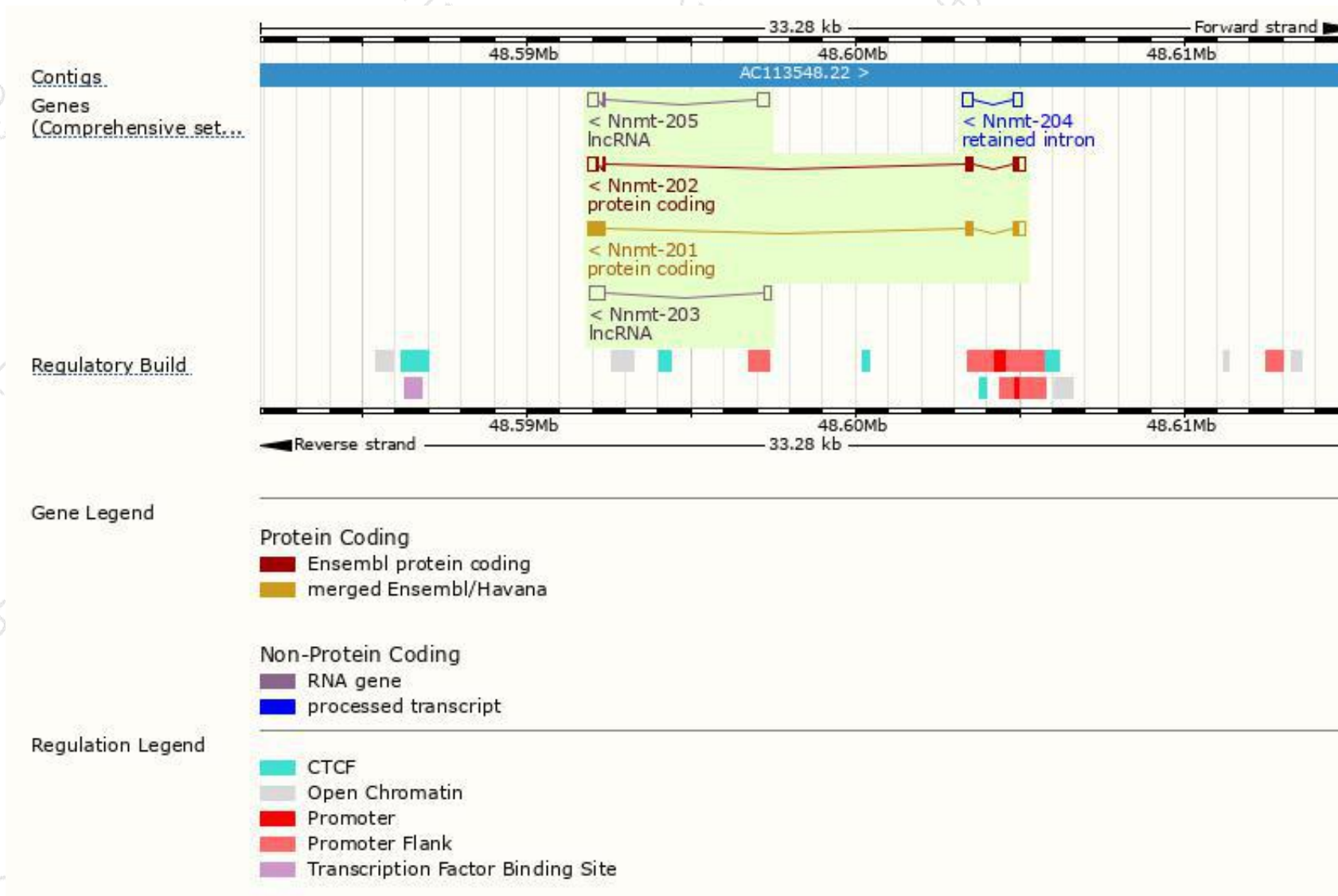
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nnmt-201	ENSMUST00000034808.11	1043	264aa	Protein coding	CCDS23157	O55239	TSL:1 GENCODE basic APPRIS P1
Nnmt-202	ENSMUST00000119426.1	912	157aa	Protein coding	CCDS80991	D3YX59	TSL:1 GENCODE basic
Nnmt-204	ENSMUST00000128076.1	558	No protein	Retained intron	-	-	TSL:2
Nnmt-205	ENSMUST00000136813.1	737	No protein	lncRNA	-	-	TSL:3
Nnmt-203	ENSMUST00000126109.1	699	No protein	lncRNA	-	-	TSL:1

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



Genomic location distribution



Protein domain



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

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