

Nt5c3 Cas9-CKO Strategy

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Project Overview

Project Name

Nt5c3

Project type

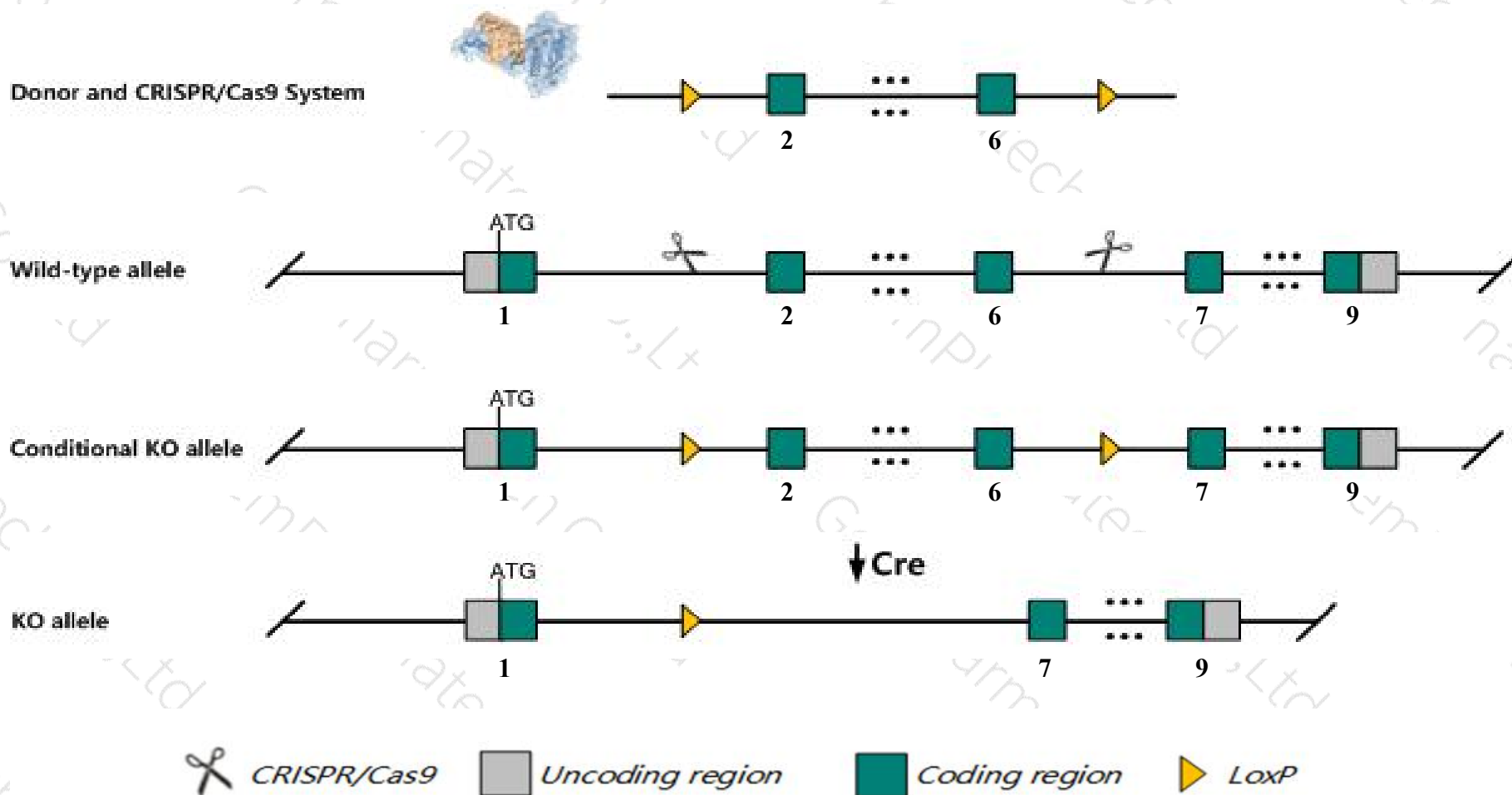
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Nt5c3* gene. The schematic diagram is as follows:



Technical routes

- The *Nt5c3* gene has 9 transcripts. According to the structure of *Nt5c3* gene, exon2-exon6 of *Nt5c3-201* (ENSMUST00000031793.7) transcript is recommended as the knockout region. The region contains 392bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Nt5c3* 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 *Nt5c3* gene is located on the Chr6. 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)

Nt5c3 5'-nucleotidase, cytosolic III [Mus musculus (house mouse)]

Gene ID: 107569, updated on 31-Jan-2019

Summary



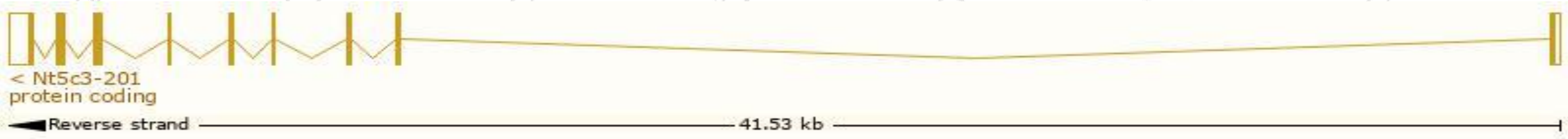
Official Symbol	Nt5c3 provided by MGI
Official Full Name	5'-nucleotidase, cytosolic III provided by MGI
Primary source	MGI:MGI:1927186
See related	Ensembl:ENSMUSG00000029780
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1600024P05Rik, 2610206B05Rik, 3110004A18Rik, A1842776, Nt5c3a, Nt5y, P5'N-1, P5N-1, PN-1, PN-I, PSN1, UMPH, Umph-1, Umph1, cN-III, lupin, p36
Expression	Broad expression in liver E14 (RPKM 44.0), liver E14.5 (RPKM 35.0) and 18 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

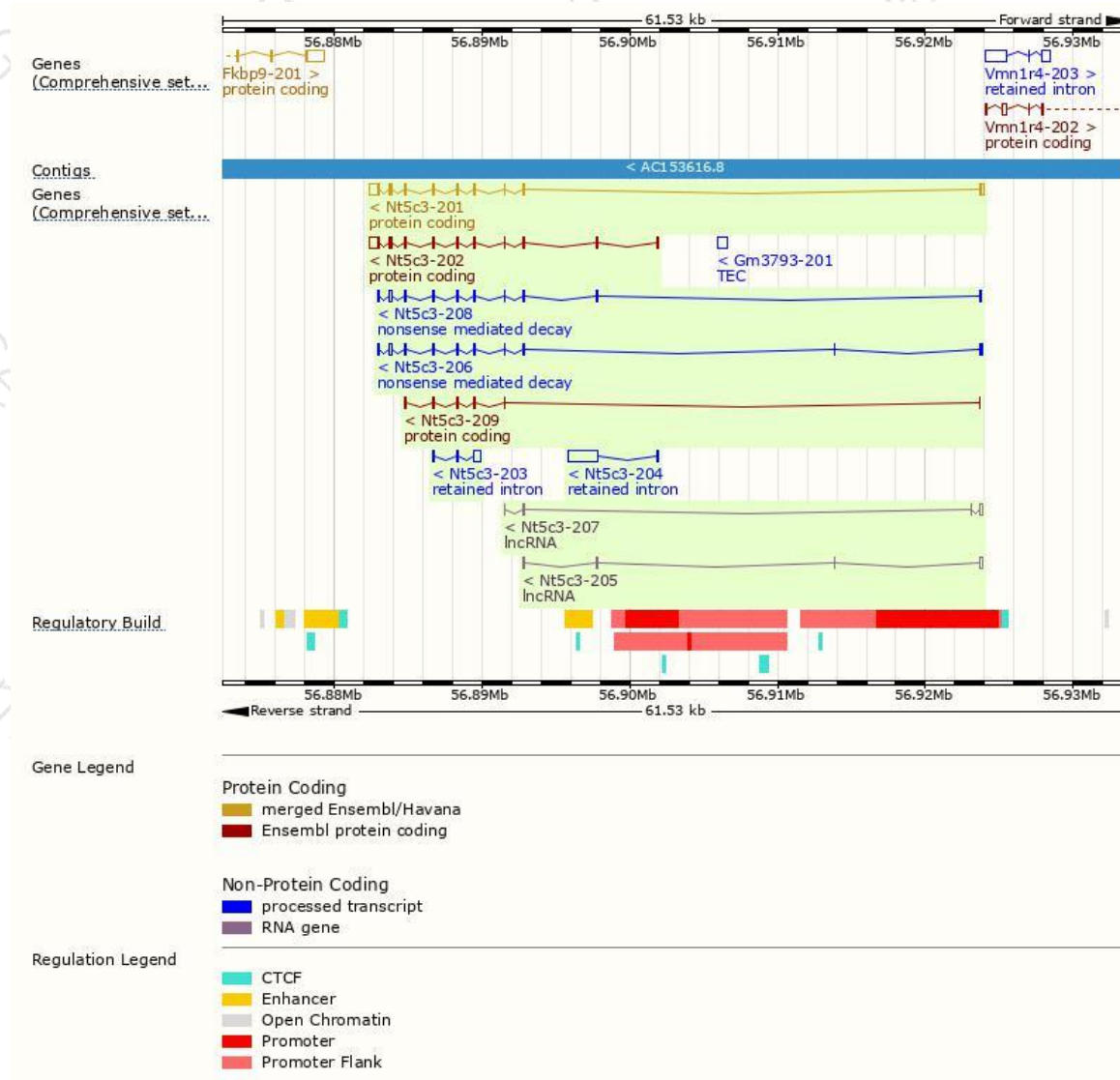
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nt5c3-201	ENSMUST00000031793.7	1676	331aa	Protein coding	CCDS20171	Q9D020	TSL:1 GENCODE basic APPRIS P3
Nt5c3-202	ENSMUST00000101367.8	1519	297aa	Protein coding	CCDS57424	Q9D020	TSL:1 GENCODE basic APPRIS ALT 1
Nt5c3-209	ENSMUST00000205087.1	427	142aa	Protein coding	-	A0A0N4SW80	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:3
Nt5c3-206	ENSMUST00000135558.7	1125	56aa	Nonsense mediated decay	-	A0A0N4SVS9	TSL:5
Nt5c3-208	ENSMUST00000152447.8	1067	49aa	Nonsense mediated decay	-	S4R2D9	TSL:5
Nt5c3-204	ENSMUST00000127725.1	2082	No protein	Retained intron	-	-	TSL:1
Nt5c3-203	ENSMUST00000126137.1	576	No protein	Retained intron	-	-	TSL:1
Nt5c3-205	ENSMUST00000134577.1	418	No protein	lncRNA	-	-	TSL:2
Nt5c3-207	ENSMUST00000138647.1	387	No protein	lncRNA	-	-	TSL:5

The strategy is based on the design of *Nt5c3-201* 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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