

Nosip Cas9-CKO Strategy

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Project Overview

Project Name

Nosip

Project type

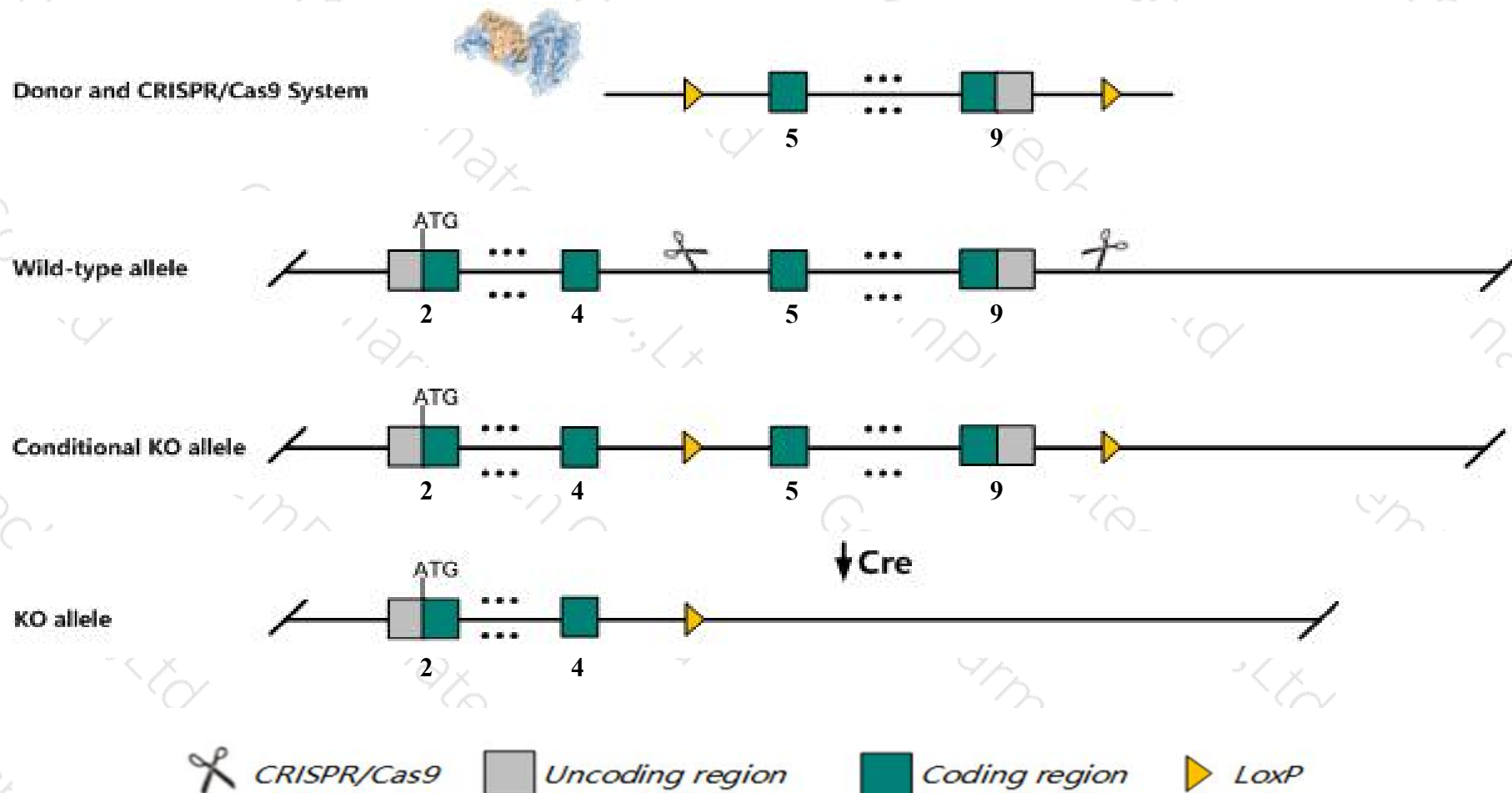
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



- The *Nosip* gene has 10 transcripts. According to the structure of *Nosip* gene, exon5-exon9 of *Nosip-201* (ENSMUST00000003513.10) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Nosip* 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 *Nosip* gene is located on the Chr7. 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)

Nosip nitric oxide synthase interacting protein [Mus musculus (house mouse)]

Gene ID: 66394, updated on 31-Jan-2019

Summary



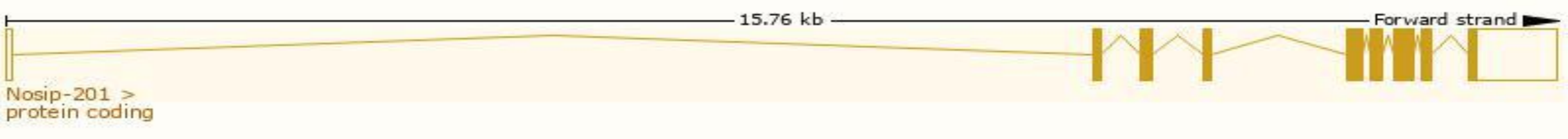
Official Symbol	Nosip provided by MGI
Official Full Name	nitric oxide synthase interacting protein provided by MGI
Primary source	MGI:MGI:1913644
See related	Ensembl:ENSMUSG00000003421
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310061K06Rik, CGI-25
Expression	Ubiquitous expression in ovary adult (RPKM 33.0), thymus adult (RPKM 26.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

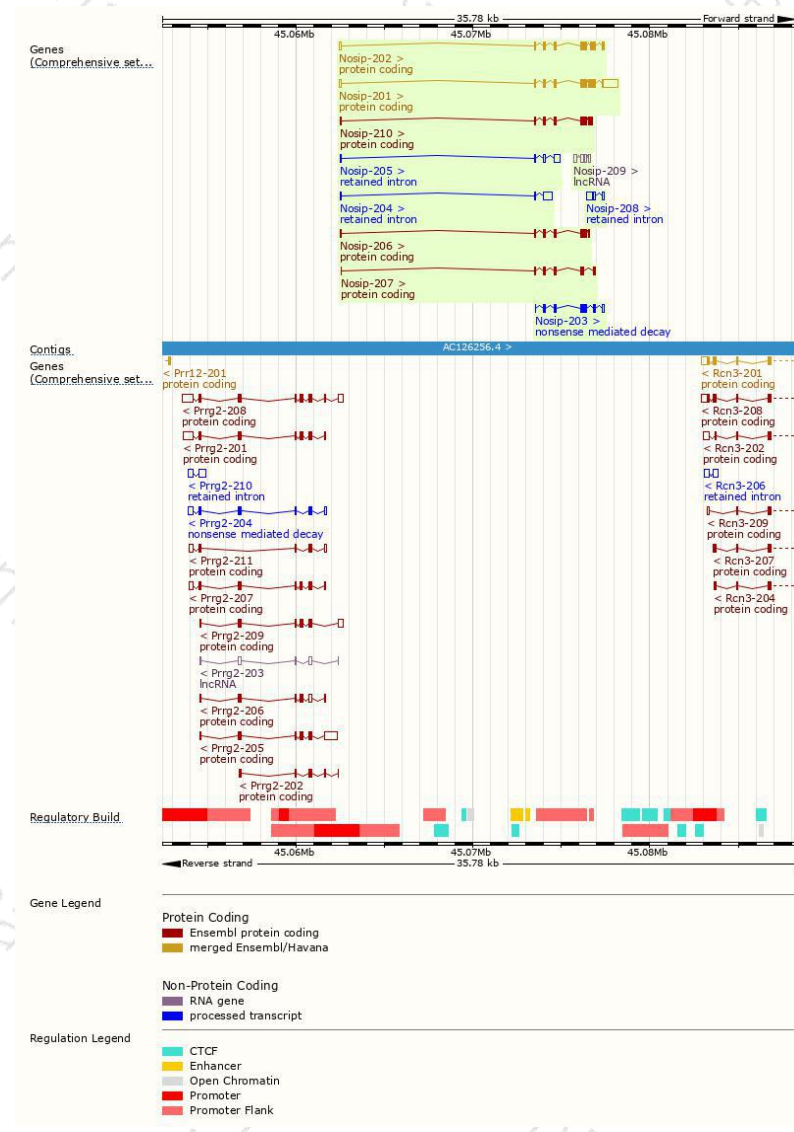
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nosip-201	ENSMUST00000003513.10	1814	301aa	Protein coding	CCDS21228	Q9D6T0	TSL:1 GENCODE basic APPRIS P3
Nosip-202	ENSMUST00000107829.8	972	276aa	Protein coding	CCDS52242	Q9D6T0	TSL:1 GENCODE basic APPRIS ALT2
Nosip-210	ENSMUST00000211465.1	777	237aa	Protein coding	-	A0A1B0GT07	CDS 3' incomplete TSL:2
Nosip-206	ENSMUST00000210088.1	696	221aa	Protein coding	-	A0A1B0GSR8	CDS 3' incomplete TSL:3
Nosip-207	ENSMUST00000210520.1	534	151aa	Protein coding	-	A0A1B0GS52	TSL:5 GENCODE basic APPRIS ALT2
Nosip-203	ENSMUST00000209243.1	679	167aa	Nonsense mediated decay	-	A0A1B0GS48	CDS 5' incomplete TSL:5
Nosip-204	ENSMUST00000209308.1	598	No protein	Retained intron	-	-	TSL:2
Nosip-205	ENSMUST00000209901.1	549	No protein	Retained intron	-	-	TSL:2
Nosip-208	ENSMUST00000210668.1	542	No protein	Retained intron	-	-	TSL:2
Nosip-209	ENSMUST00000210998.1	488	No protein	lncRNA	-	-	TSL:5

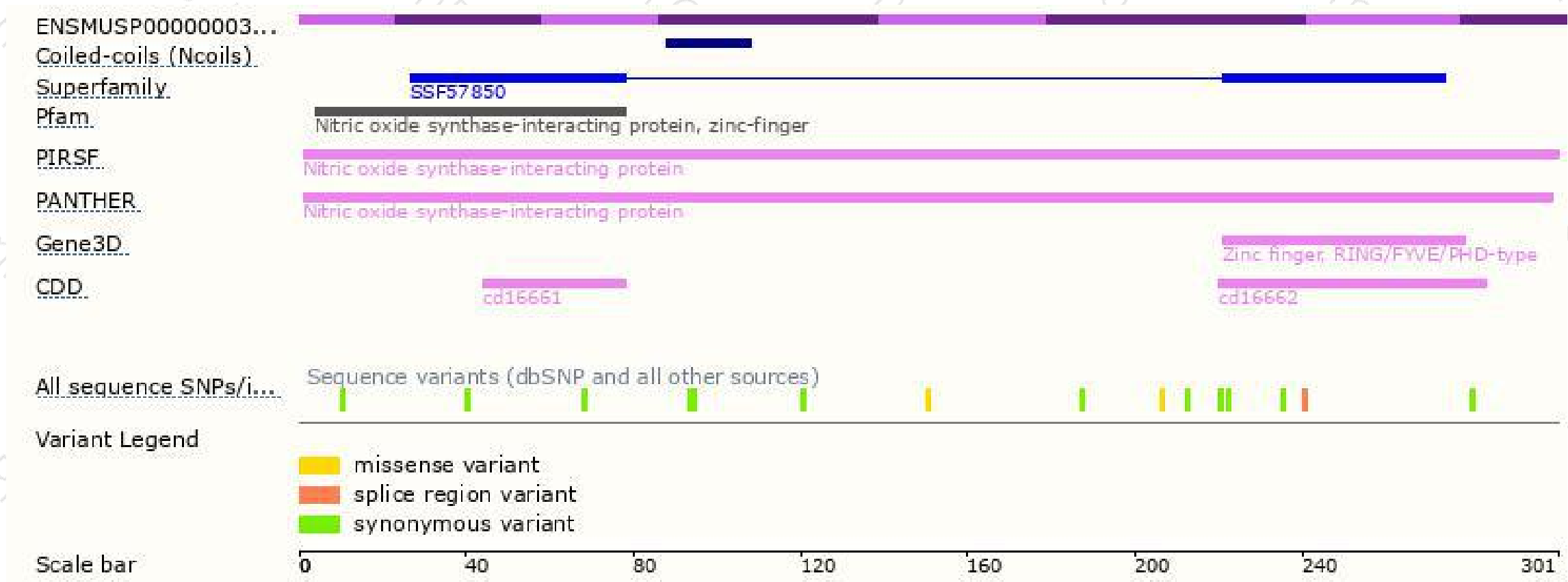
The strategy is based on the design of *Nosip-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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