

Nfe2l3 Cas9-KO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Nfe2l3

Project type

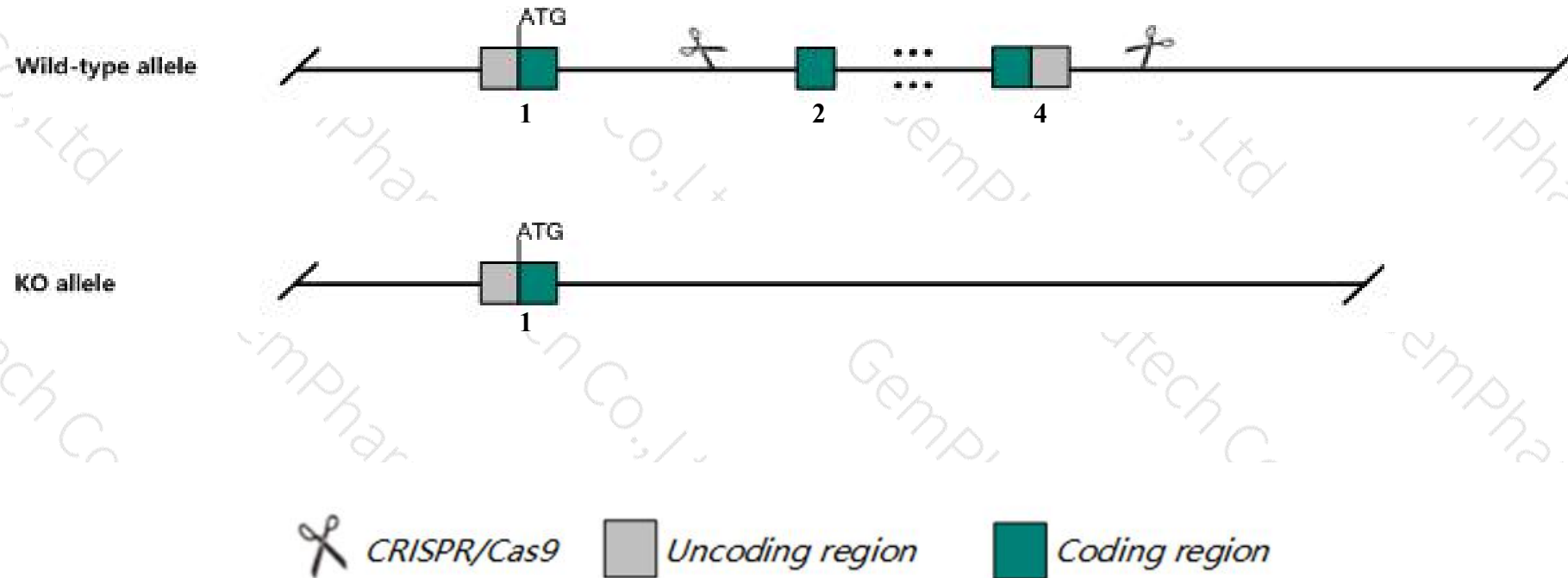
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Nfe2l3* gene. The schematic diagram is as follows:



- The *Nfe2l3* gene has 3 transcripts. According to the structure of *Nfe2l3* gene, exon2-exon4 of *Nfe2l3-201* (ENSMUST00000005103.11) 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 *Nfe2l3* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, mice homozygous for disruptions in this gene display a normal phenotype.
- The *Nfe2l3* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Nfe2l3 nuclear factor, erythroid derived 2, like 3 [*Mus musculus* (house mouse)]

Gene ID: 18025, updated on 17-Sep-2019

Summary

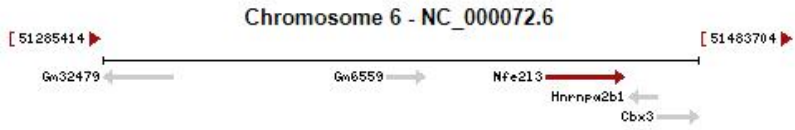
Official Symbol Nfe2l3 provided by [MGI](#)
Official Full Name nuclear factor, erythroid derived 2, like 3 provided by [MGI](#)
Primary source [MGI:MGI:1339958](#)
See related [Ensembl:ENSMUSG00000029832](#)
Gene type protein coding
RefSeq status VALIDATED
Organism [Mus musculus](#)
Lineage Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as Nrf3
Expression Biased expression in bladder adult (RPKM 16.5), CNS E18 (RPKM 5.1) and 13 other tissues [See more](#)
Orthologs [human](#) [all](#)

Genomic context

Location: 6 B3; 6 24.84 cM [See Nfe2l3 in Genome Data Viewer](#)

Exon count: 4

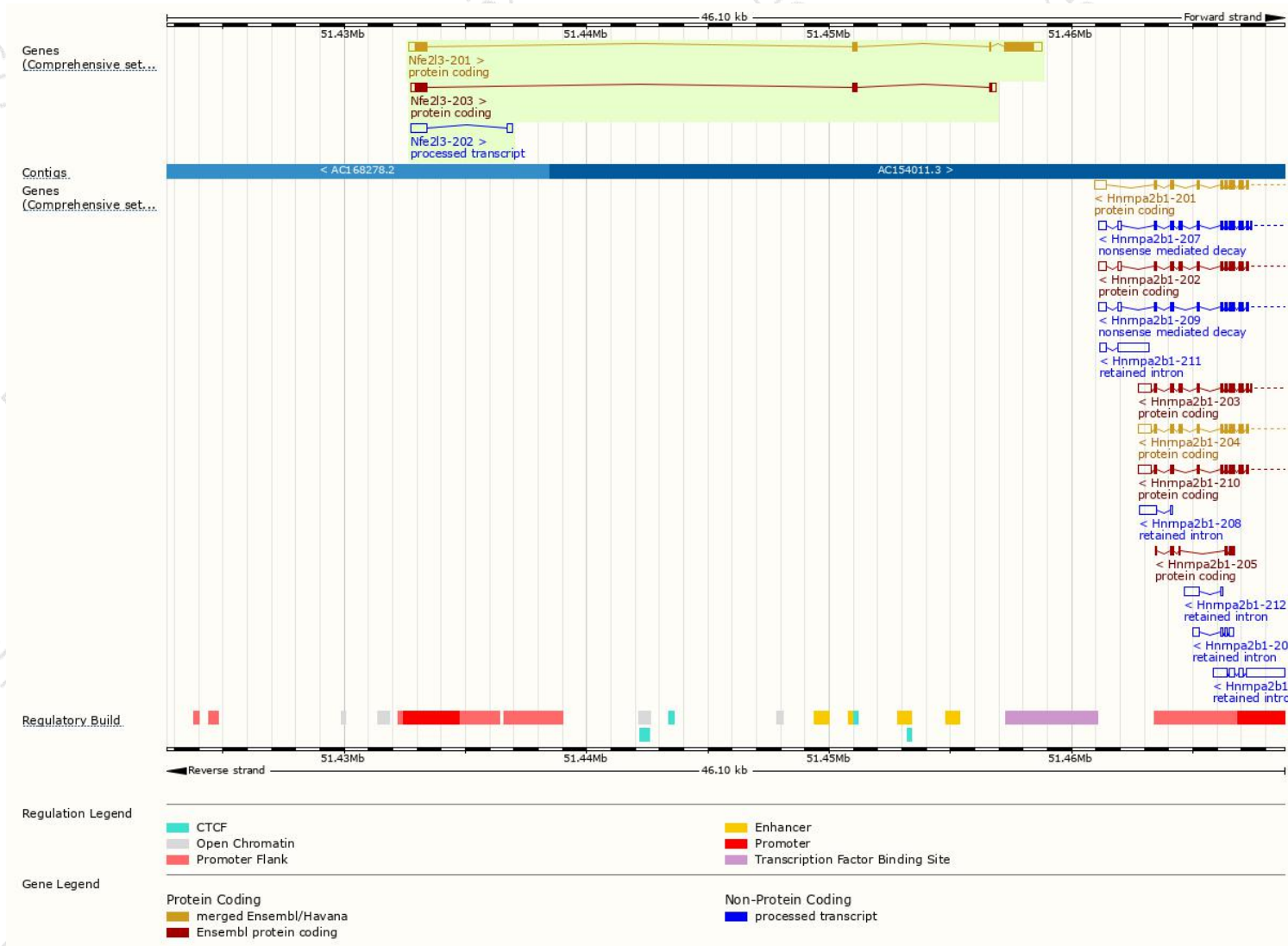
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	6	NC_000072.6 (51432669..51458772)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	6	NC_000072.5 (51382669..51408767)



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GemPharmatech

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nfe2l3-201	ENSMUST00000005103.11	2544	660aa	Protein coding	CCDS20134	Q3UZC1 Q9WTM4	TSL:1 GENCODE basic APPRIS P1
Nfe2l3-203	ENSMUST000000160133.1	1125	264aa	Protein coding	-	E9PWE6	TSL:1 GENCODE basic
Nfe2l3-202	ENSMUST000000061507.8	895	No protein	Processed transcript	-	-	TSL:1

Genomic location distribution



Protein domain



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

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