

Nus1 Cas9-KO Strategy

Designer:

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Design Date:

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Project Overview

Project Name

Nus1

Project type

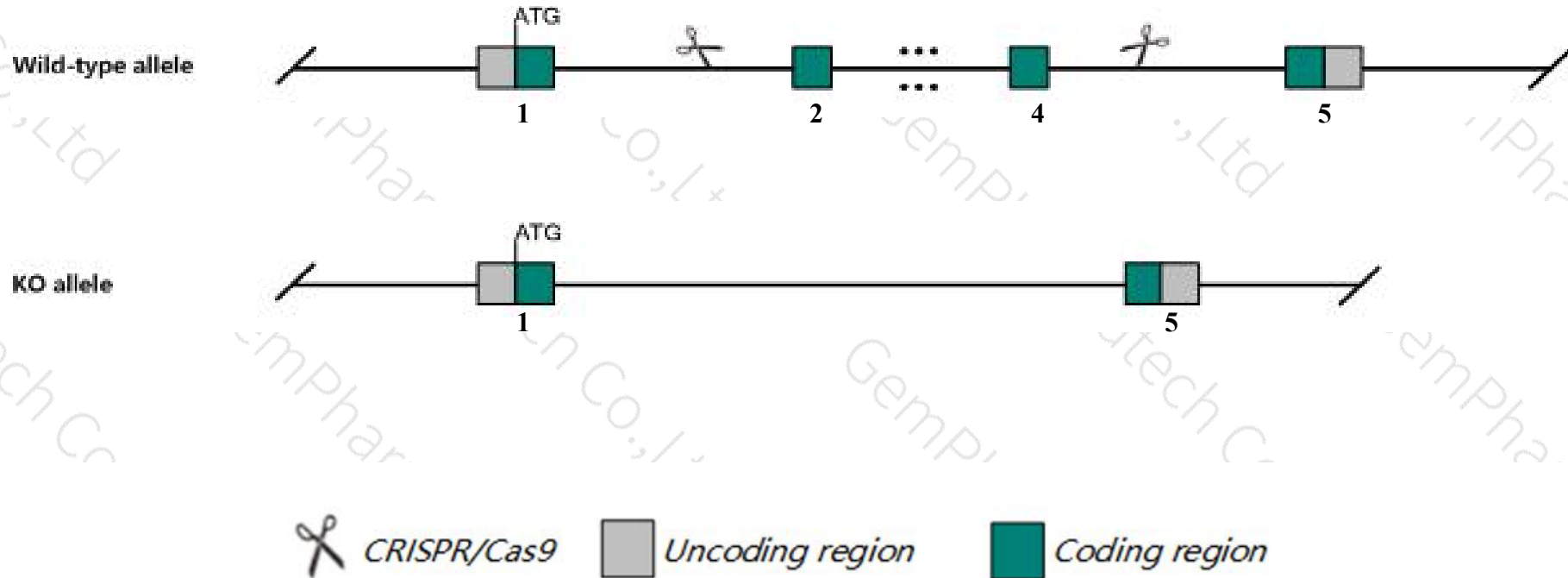
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Nus1* gene. The schematic diagram is as follows:



- The *Nus1* gene has 2 transcripts. According to the structure of *Nus1* gene, exon2-exon4 of *Nus1-201* (ENSMUST00000023830.15) transcript is recommended as the knockout region. The region contains 376bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Nus1* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Mice homozygous for a knock-out allele die prior to E6.5. MEFs homozygous for a conditionally activated knock-out allele exhibit impaired glycosylation.
- The *Nus1* gene is located on the Chr10. 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)

Nus1 NUS1 dehydrololichyl diphosphate synthase subunit [Mus musculus (house mouse)]

Gene ID: 52014, updated on 31-Jan-2019

Summary



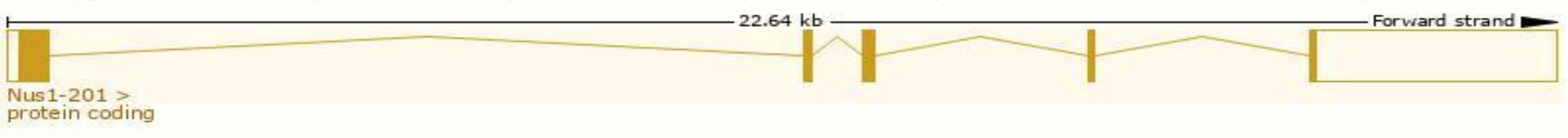
Official Symbol	Nus1 provided by MGI
Official Full Name	NUS1 dehydrololichyl diphosphate synthase subunit provided by MGI
Primary source	MGI:MGI:1196365
See related	Ensembl:ENSMUSG00000023068
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1600027K07Rik, AU019165, AW538011, BC003223, D10Ertd438e
Expression	Ubiquitous expression in kidney adult (RPKM 26.3), adrenal adult (RPKM 18.5) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

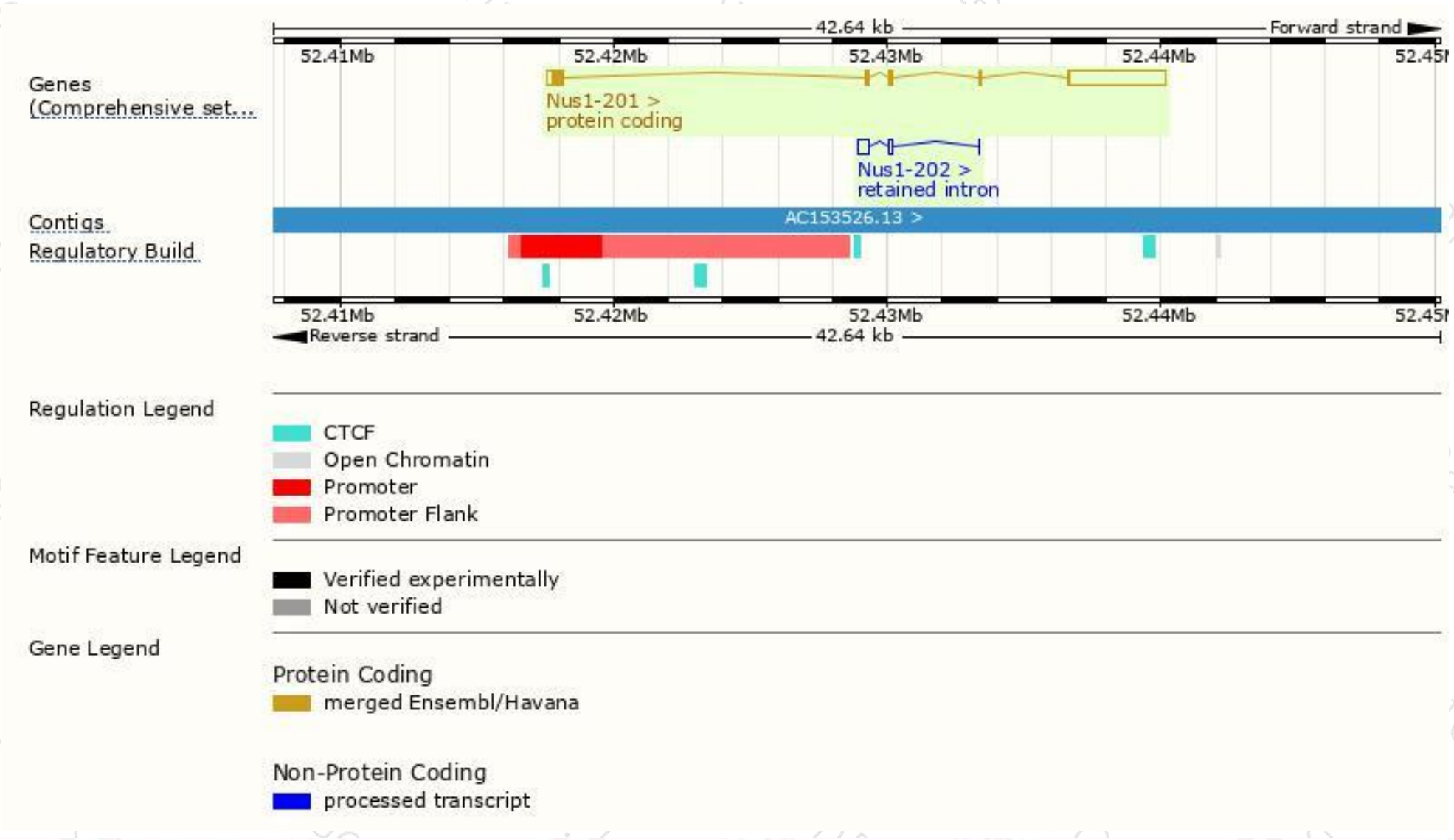
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Nus1-201	ENSMUST00000023830.15	4605	297aa	Protein coding	CCDS23841	Q99LJ8	TSL:1 GENCODE basic APPRIS P1
Nus1-202	ENSMUST00000218983.1	566	No protein	Retained intron	-	-	TSL:2

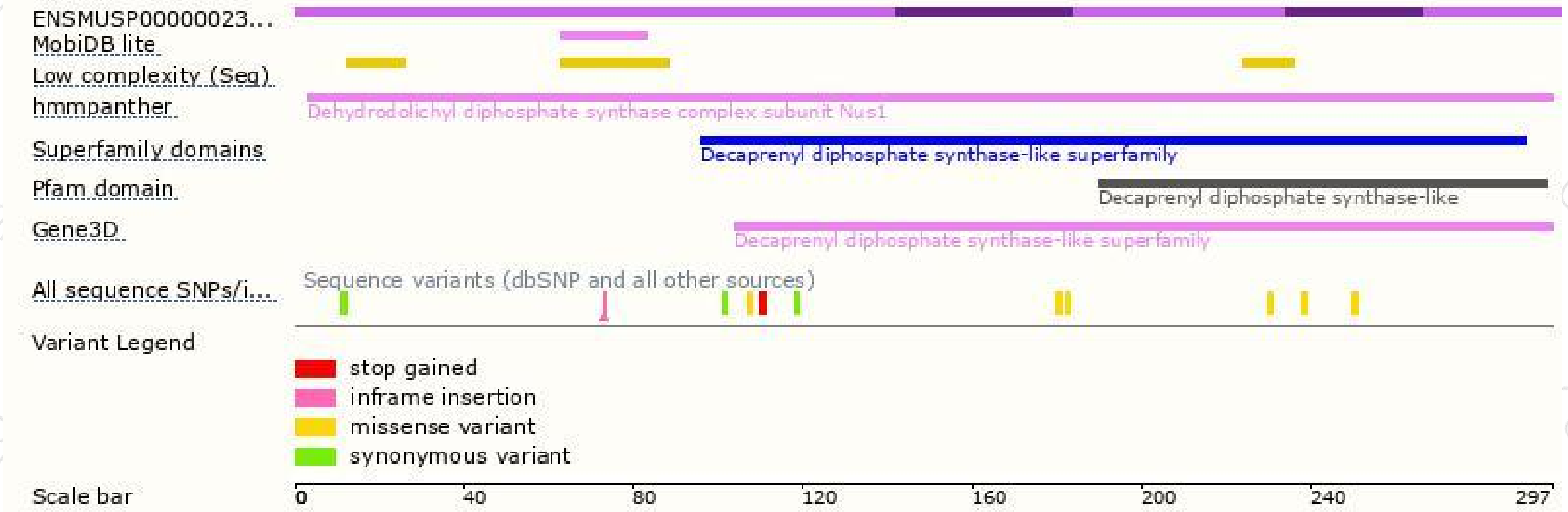
The strategy is based on the design of *Nus1-201* transcript,The transcription is shown below



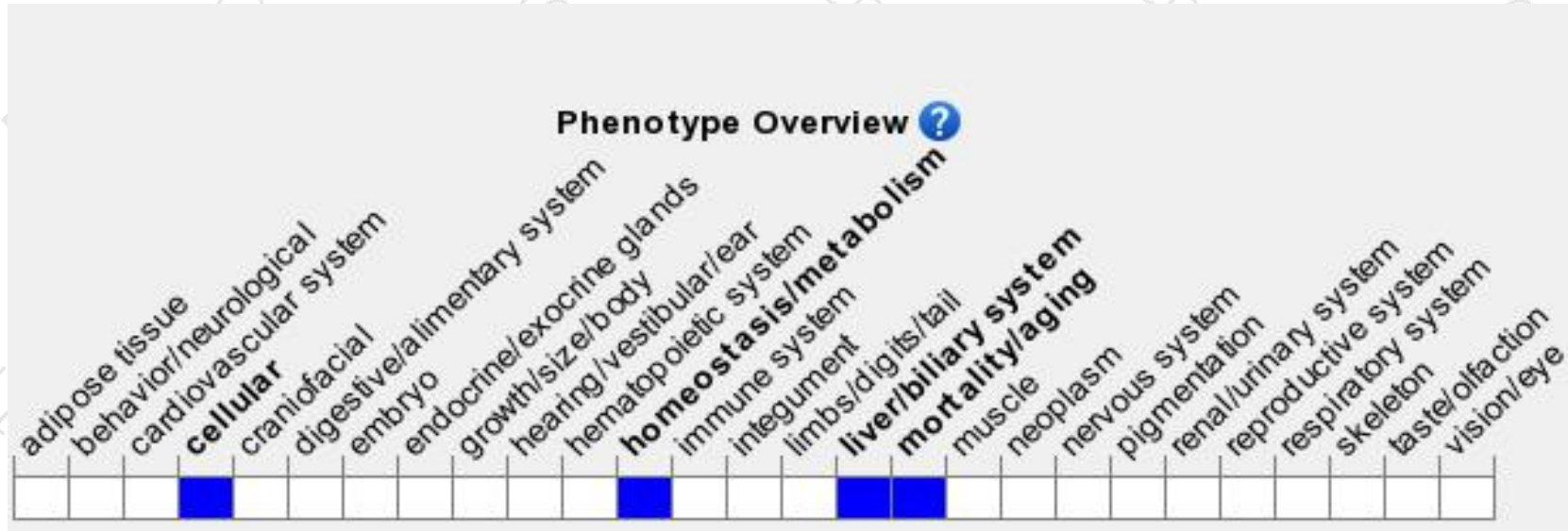
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a knock-out allele die prior to E6.5. MEFs homozygous for a conditionally activated knock-out allele exhibit impaired glycosylation.

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

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