

Npc1l1 Cas9-KO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Npc1l1

Project type

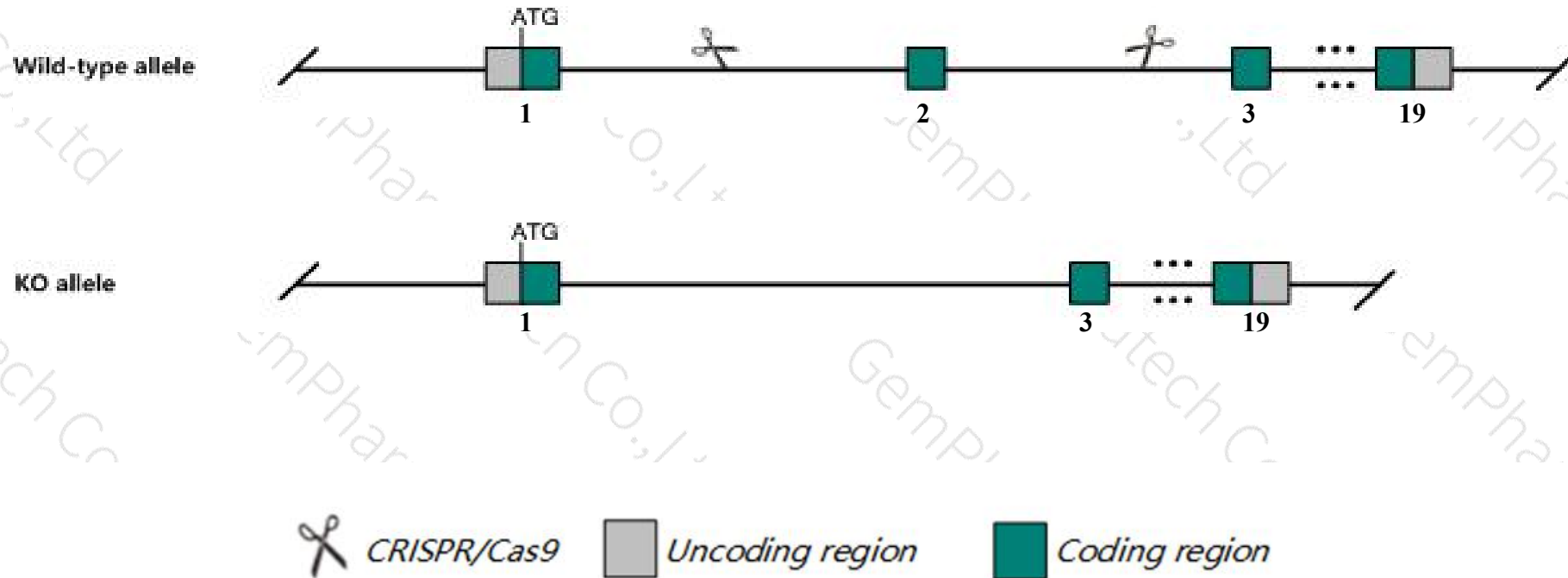
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Npc1l1* gene. The schematic diagram is as follows:



- The *Npc1l1* gene has 1 transcript. According to the structure of *Npc1l1* gene, exon2 of *Npc1l1-201* (ENSMUST00000004505.2) transcript is recommended as the knockout region. The region contains 1529bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Npc1l1* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Mice homozygous for a targeted null mutation exhibit normal intestinal development, fertility and plasma cholesterol and triglyceride levels; however, intestinal cholesterol absorption was substantially reduced.
- The *Npc1l1* gene is located on the Chr11. 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.

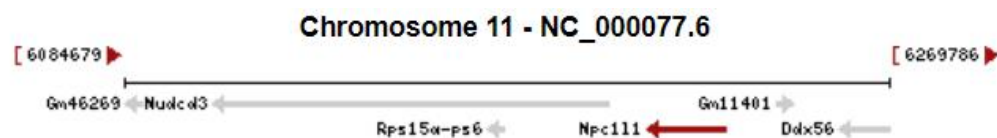
Gene information (NCBI)

Npc1l1 NPC1 like intracellular cholesterol transporter 1 [*Mus musculus* (house mouse)]

Gene ID: 237636, updated on 28-Oct-2019

Summary

Official Symbol	Npc1l1 provided by MGI
Official Full Name	NPC1 like intracellular cholesterol transporter 1 provided by MGI
Primary source	MGI:MGI:2685089
See related	Ensembl:ENSMUSG00000020447
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	Gm243; 9130221N23Rik
Expression	Biased expression in small intestine adult (RPKM 209.5), duodenum adult (RPKM 153.8) and 1 other tissue See more
Orthologs	human all

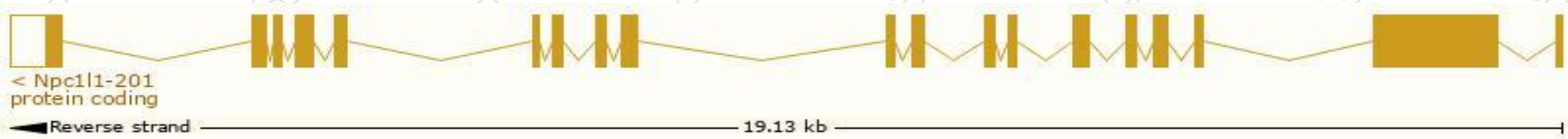


Transcript information (Ensembl)

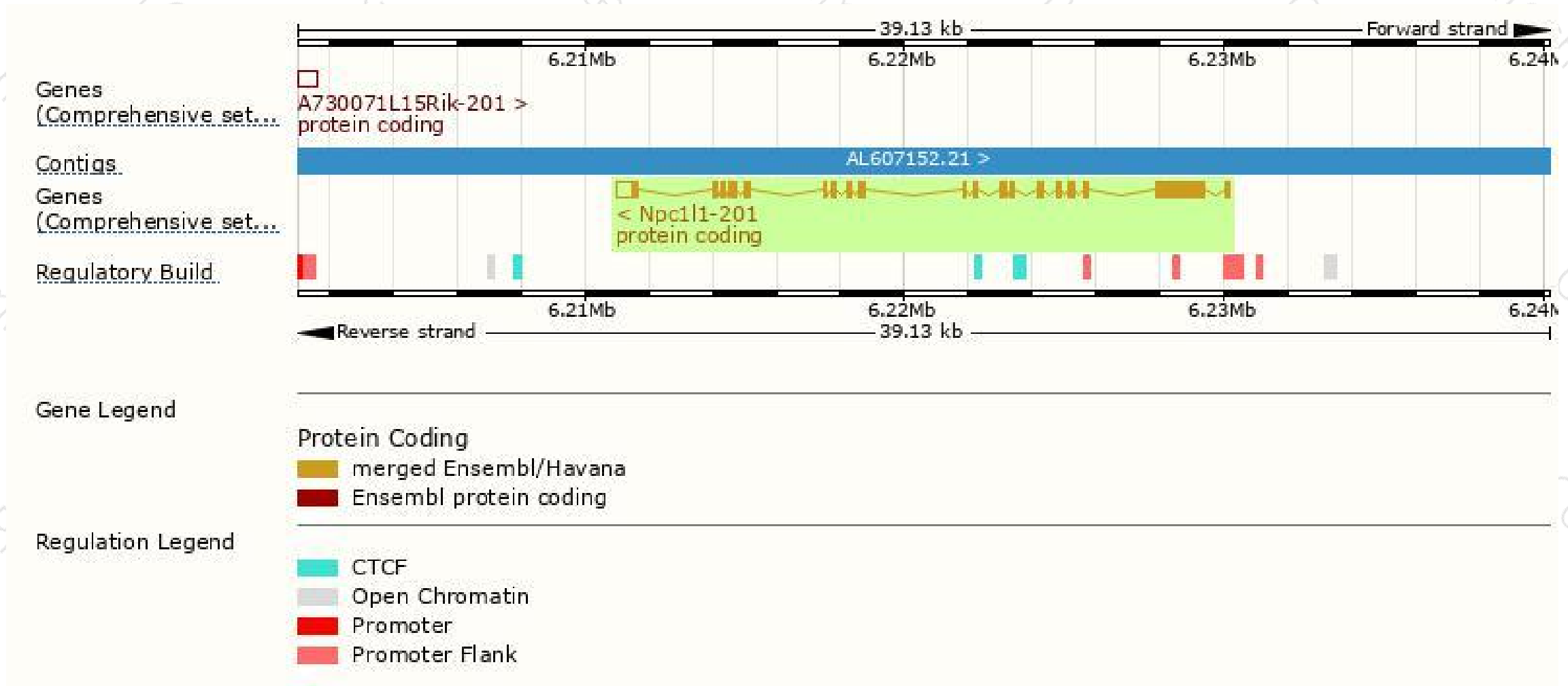
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Npc1l1-201	ENSMUST00000004505.2	4467	1333aa	Protein coding	CCDS24413	Z4YJC9	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *Npc1l1-201* transcript, The transcription is shown below



Genomic location distribution

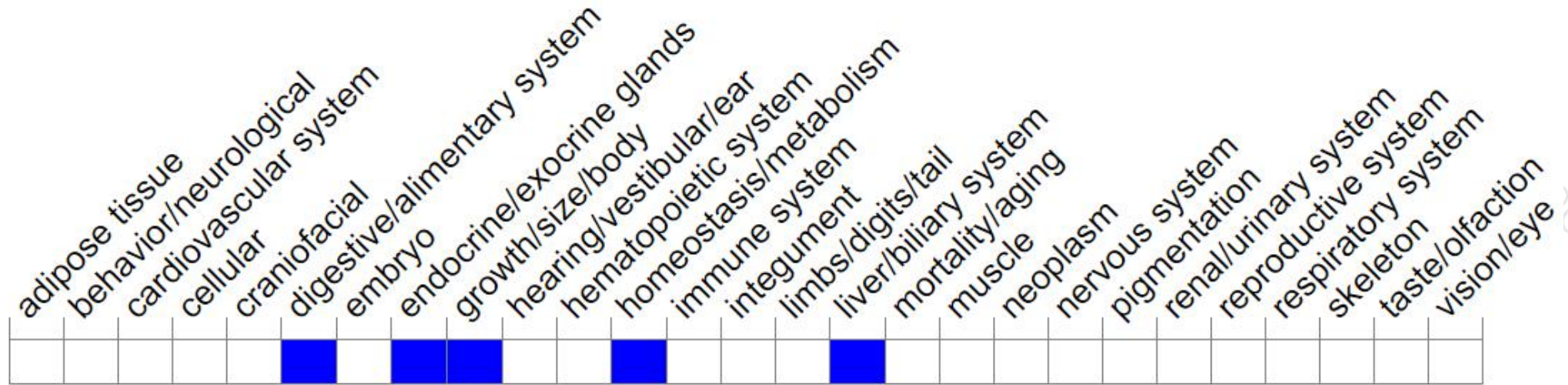


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview ?



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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