

Orc2 Cas9-KO Strategy

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Project Overview

Project Name

Orc2

Project type

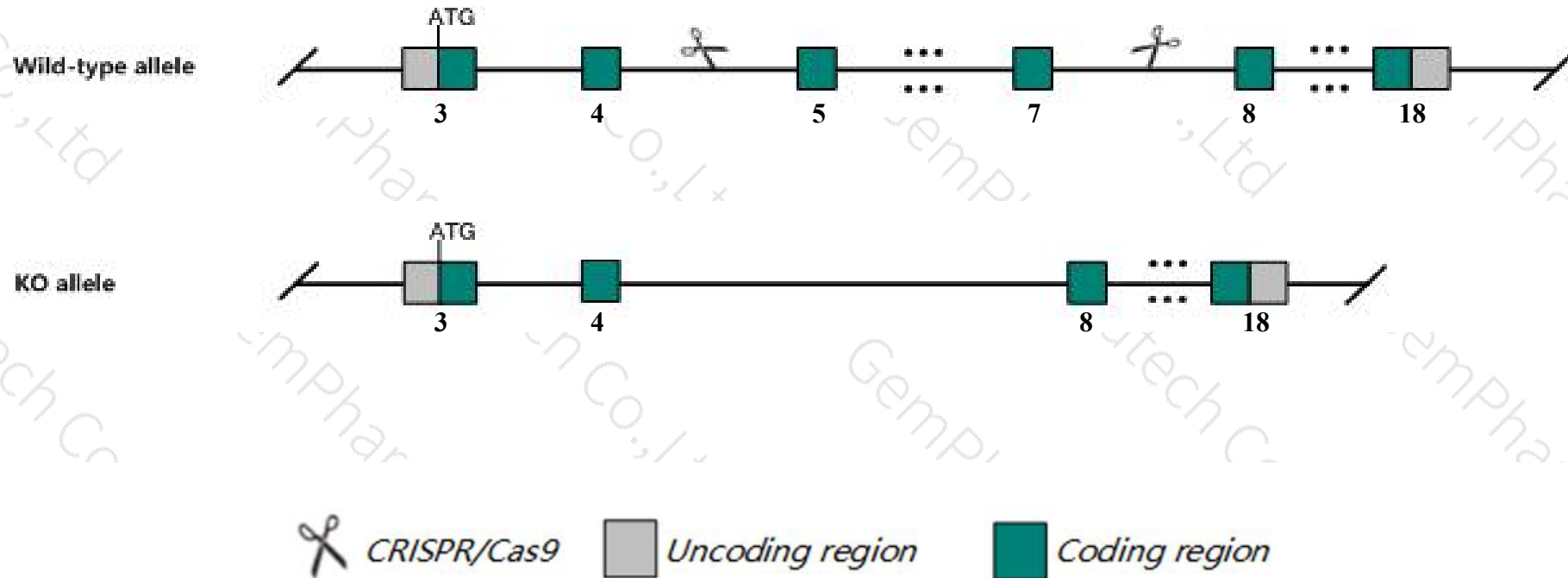
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Orc2* gene. The schematic diagram is as follows:



- The *Orc2* gene has 5 transcripts. According to the structure of *Orc2* gene, exon5-exon7 of *Orc2-201* (ENSMUST00000027198.11) transcript is recommended as the knockout region. The region contains 212bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Orc2* gene. The brief process is as follows: CRISPR/Cas9 system w

- The *Orc2* gene is located on the Chr1. 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.
- Transcript *Orc2-205* may not be affected.
- 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)

Orc2 origin recognition complex, subunit 2 [*Mus musculus* (house mouse)]

Gene ID: 18393, updated on 12-Aug-2019

Summary

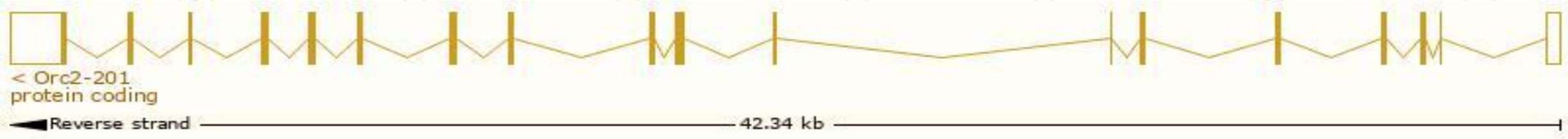
Official Symbol	Orc2 provided by MGI
Official Full Name	origin recognition complex, subunit 2 provided by MGI
Primary source	MGI:MGI:1328306
See related	Ensembl:ENSMUSG000000026037
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Orc2l; AU041563
Expression	Ubiquitous expression in liver E14 (RPKM 14.2), liver E14.5 (RPKM 11.5) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

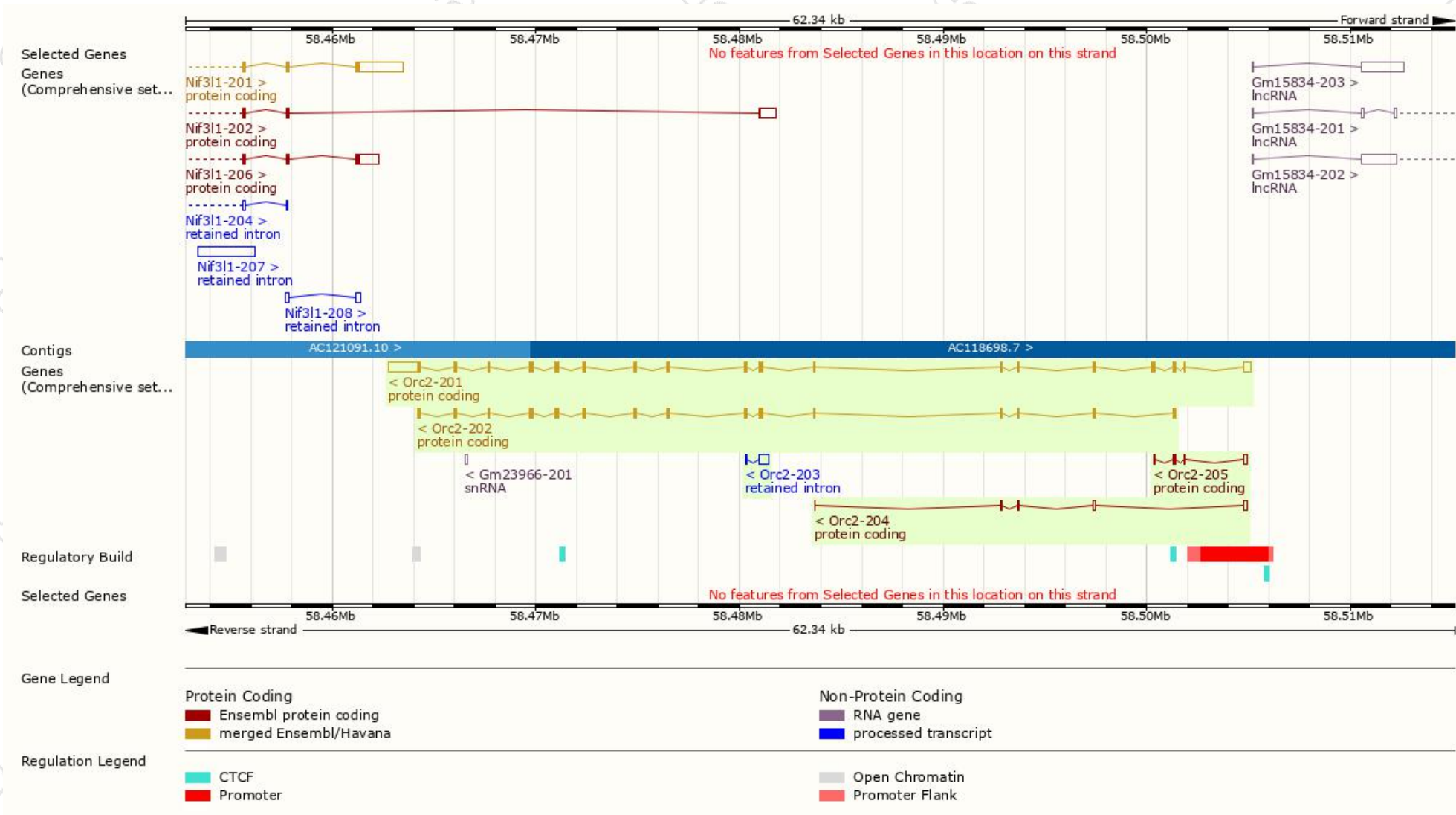
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Orc2-202	ENSMUST00000114325.7	1587	528aa	Protein coding	CCDS14974	Q59IX1	TSL:1 GENCODE basic APPRIS ALT2
Orc2-201	ENSMUST00000027198.11	3561	576aa	Protein coding	CCDS14975	Q543F8 Q60862	TSL:1 GENCODE basic APPRIS P4
Orc2-205	ENSMUST00000191206.1	370	44aa	Protein coding	-	A0A087WSP9	CDS 3' incomplete TSL:1
Orc2-204	ENSMUST00000190695.1	372	47aa	Protein coding	-	A0A087WPP9	CDS 3' incomplete TSL:5
Orc2-203	ENSMUST00000151723.1	529	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Orc2-201* 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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