Chrdl2 Cas9-KO Strategy

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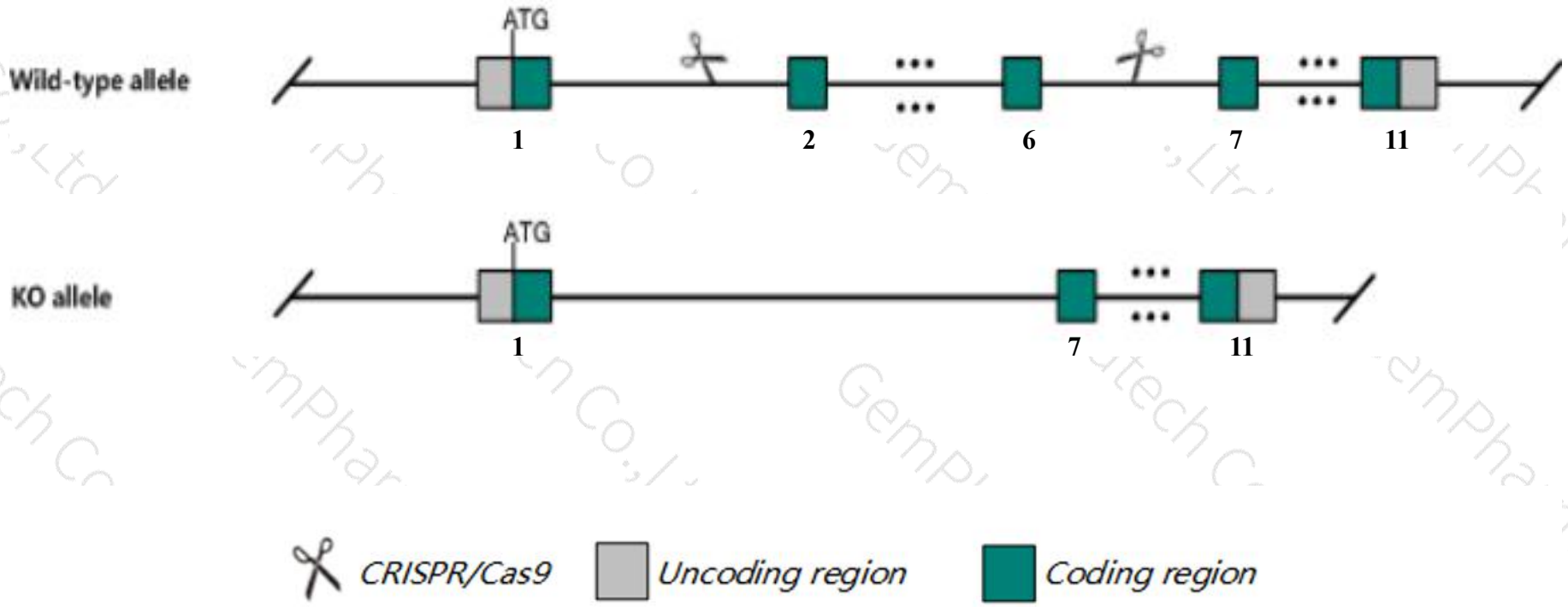
Project Overview

Project Name	***Chrdl2***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Chrdl2* gene. The schematic diagram is as follows:



Technical routes

➢ The *Chrdl2* gene has 4 transcripts. According to the structure of *Chrdl2* gene, exon2-exon6 of *Chrdl2-202*(ENSMUST00000107084.7) transcript is recommended as the knockout region.The region contains 500bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Chrdl2* gene. The brief process is as follows: CRISPR/Cas9 system 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.

Notice

➢ The *Chrdl2* 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.

➢ Transcript *Chrdl2*-204 may not be affected.

➢ The effect on transcript *Chrdl2*-203 is unknown.

➢ 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）

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Chrdl2 chordin-like 2 [Mus musculus (house mouse)]

Gene ID: 69121, updated on 13-Mar-2020

Summary

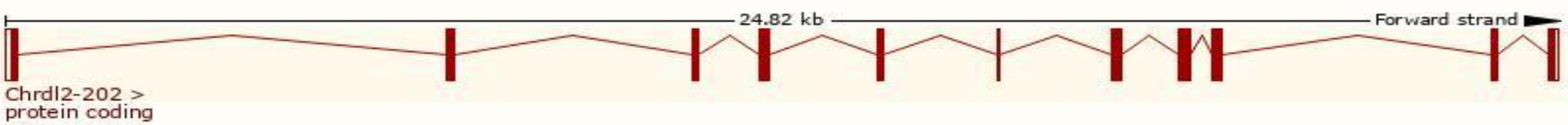
Official Symbol	Chrdl2 provided by MGI
Official Full Name	chordin-like 2 provided byMGI
Primary source	MGI:MGI:1916371
See related	Ensembl:ENSMUSG00000030732
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1810022C01Rik, Chl2
Expression	Biased expression in subcutaneous fat pad adult (RPKM 4.3), placenta adult (RPKM 2.7) and 5 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

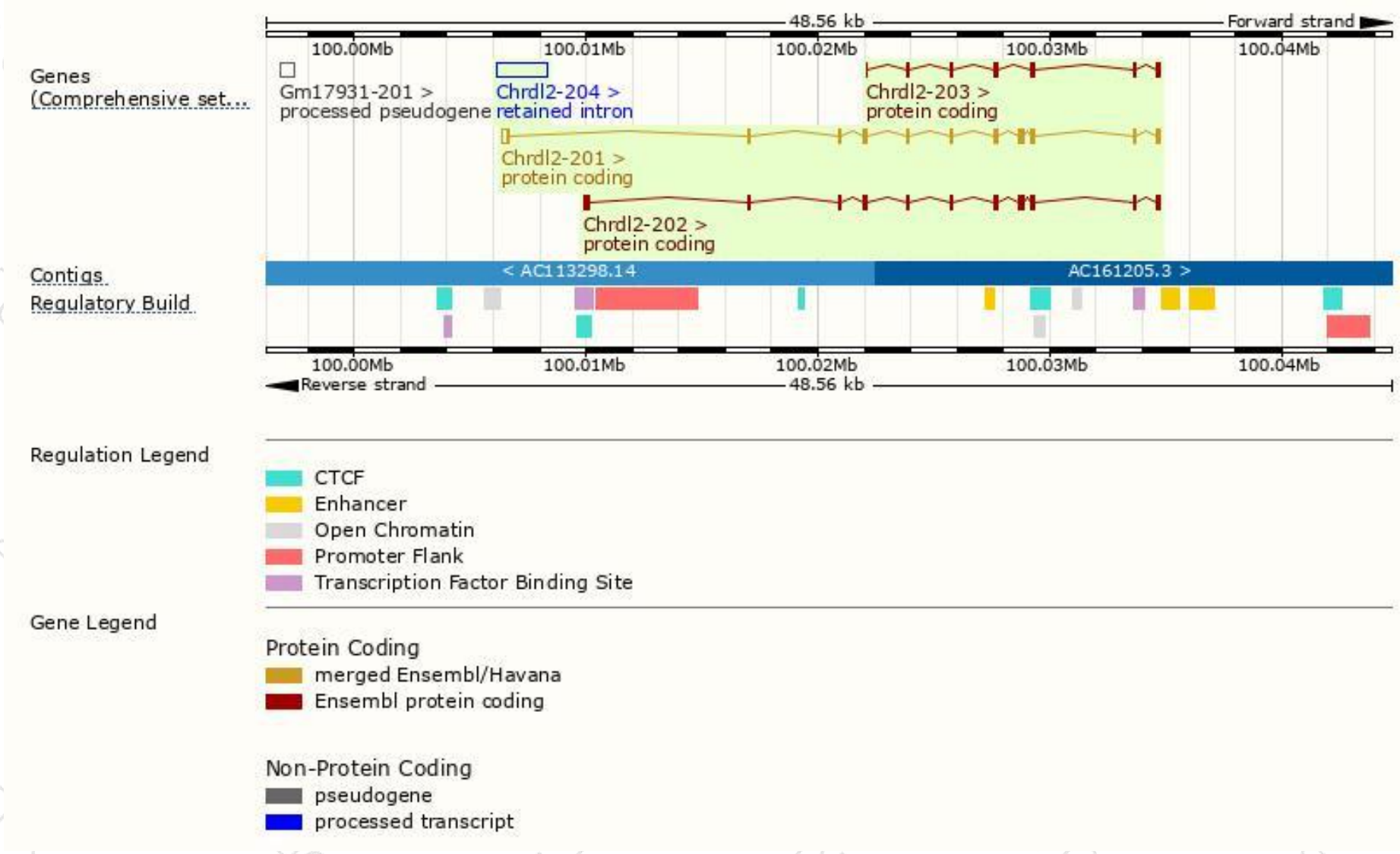
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Chrdl2-201	ENSMUST00000032977.10	1520	426aa	Protein coding	CCDS21492	A0A0B4J1E8	TSL:1 GENCODE basic APPRIS P3
Chrdl2-202	ENSMUST00000107084.7	1484	433aa	Protein coding	CCDS80755	D3YV59	TSL:1 GENCODE basic APPRIS ALT2
Chrdl2-203	ENSMUST00000144808.1	741	221aa	Protein coding	-	F6WCT1	CDS 5' incomplete TSL:5
Chrdl2-204	ENSMUST00000207641.1	2176	No protein	Retained intron	-	-	TSL:NA

The strategy is based on the design of *Chrdl2-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain

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