

Sdr9c7 Cas9-CKO Strategy

Designer:

Project Overview

Project Name

Sdr9c7

Project type

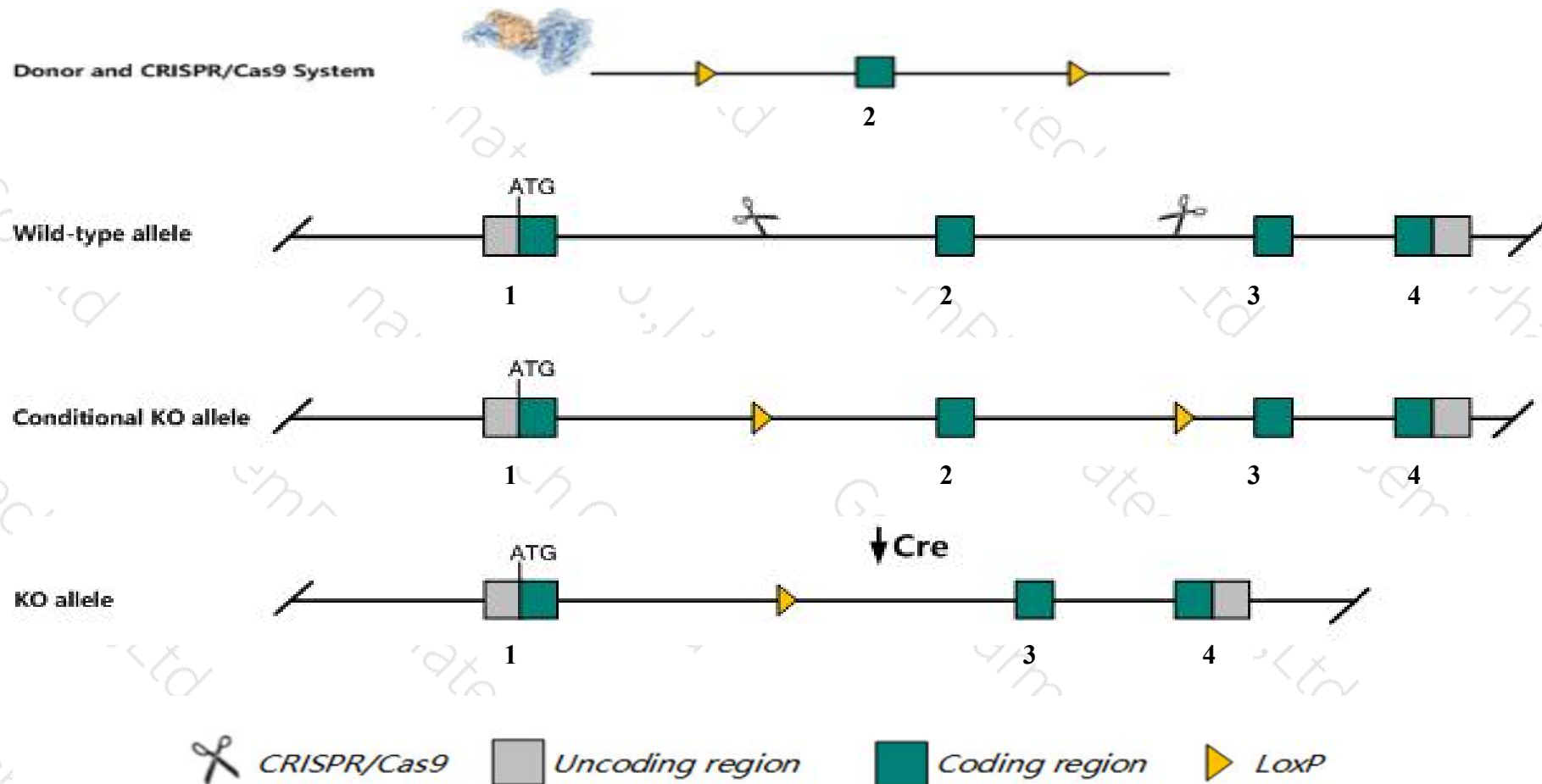
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Sdr9c7* gene. The schematic diagram is as follows:



- The *Sdr9c7* gene has 4 transcripts. According to the structure of *Sdr9c7* gene, exon2 of *Sdr9c7-201* (ENSMUST00000047134.7) transcript is recommended as the knockout region. The region contains 259bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Sdr9c7* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA and Donor 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.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Sdr9c7* 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 gene transcription and translation processes, all risks cannot be predicted under existing information.

Gene information (NCBI)

Sdr9c7 4short chain dehydrogenase/reductase family 9C, member 7 [Mus musculus (house mouse)]

Gene ID: 70061, updated on 9-Feb-2019

Summary



Official Symbol Sdr9c7 provided by [MGI](#)

Official Full Name 4short chain dehydrogenase/reductase family 9C, member 7 provided by [MGI](#)

Primary source [MGI:MGI:1917311](#)

See related [Ensembl:ENSMUSG00000040127](#)

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 1810054F20Rik, Rdh20, Rdhs, SDR-O, Sdro

Expression Biased expression in liver adult (RPKM 5.3), stomach adult (RPKM 2.3) and 2 other tissues [See more](#)

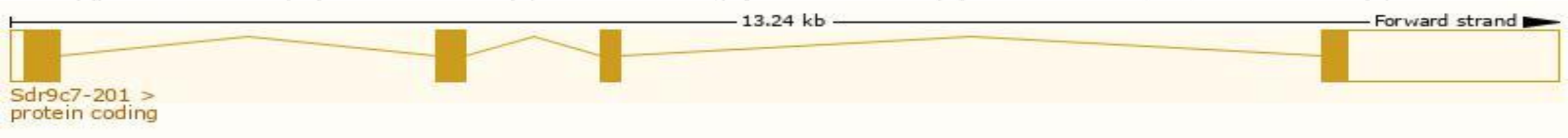
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

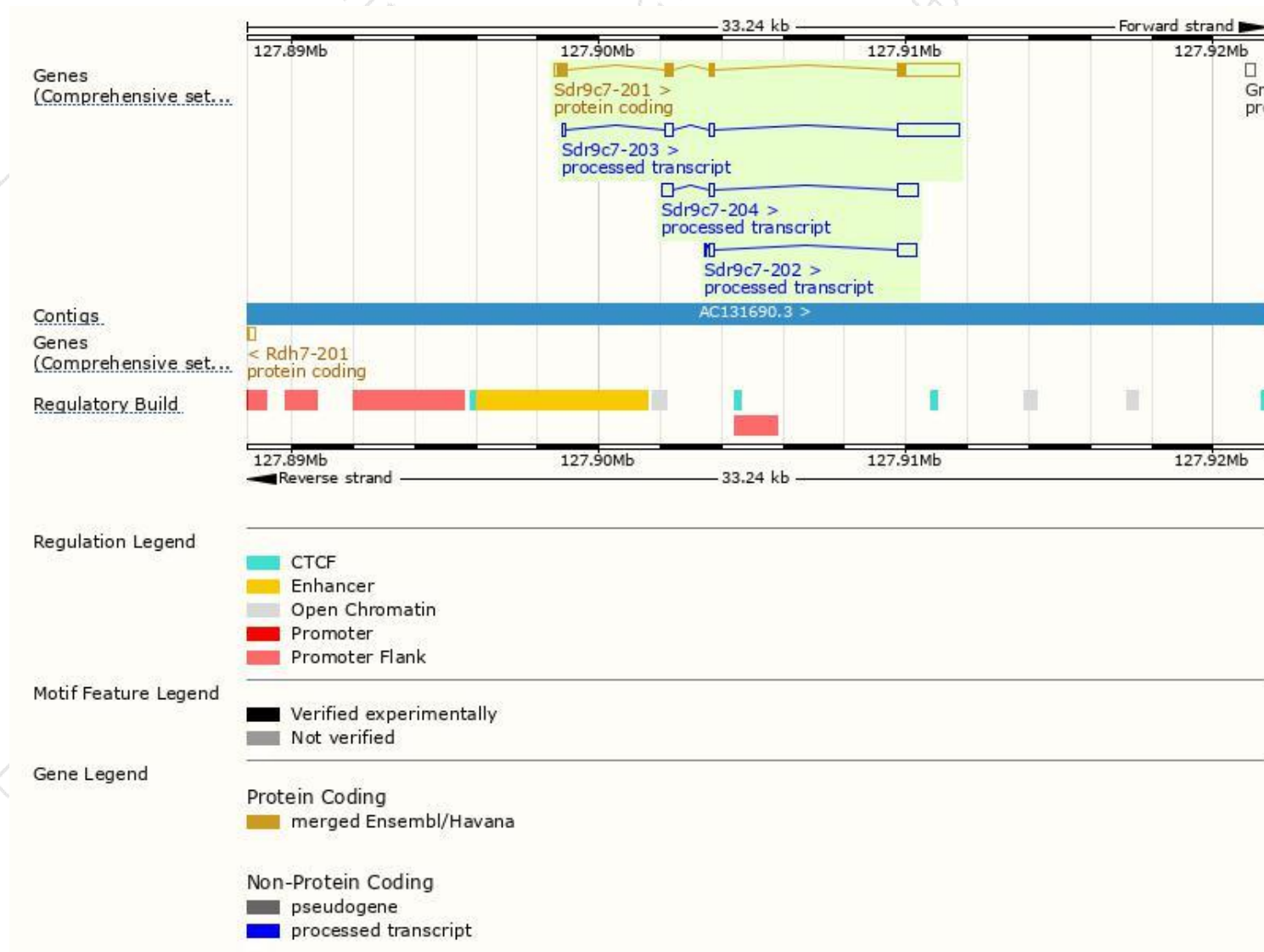
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Sdr9c7-201	ENSMUST00000047134.7	2868	313aa	Protein coding	CCDS24256	Q8K3P0	TSL:1 GENCODE basic APPRIS P1
Sdr9c7-203	ENSMUST00000151614.7	2575	No protein	Processed transcript	-	-	TSL:3
Sdr9c7-204	ENSMUST00000155067.7	1175	No protein	Processed transcript	-	-	TSL:1
Sdr9c7-202	ENSMUST00000149849.1	817	No protein	Processed transcript	-	-	TSL:3

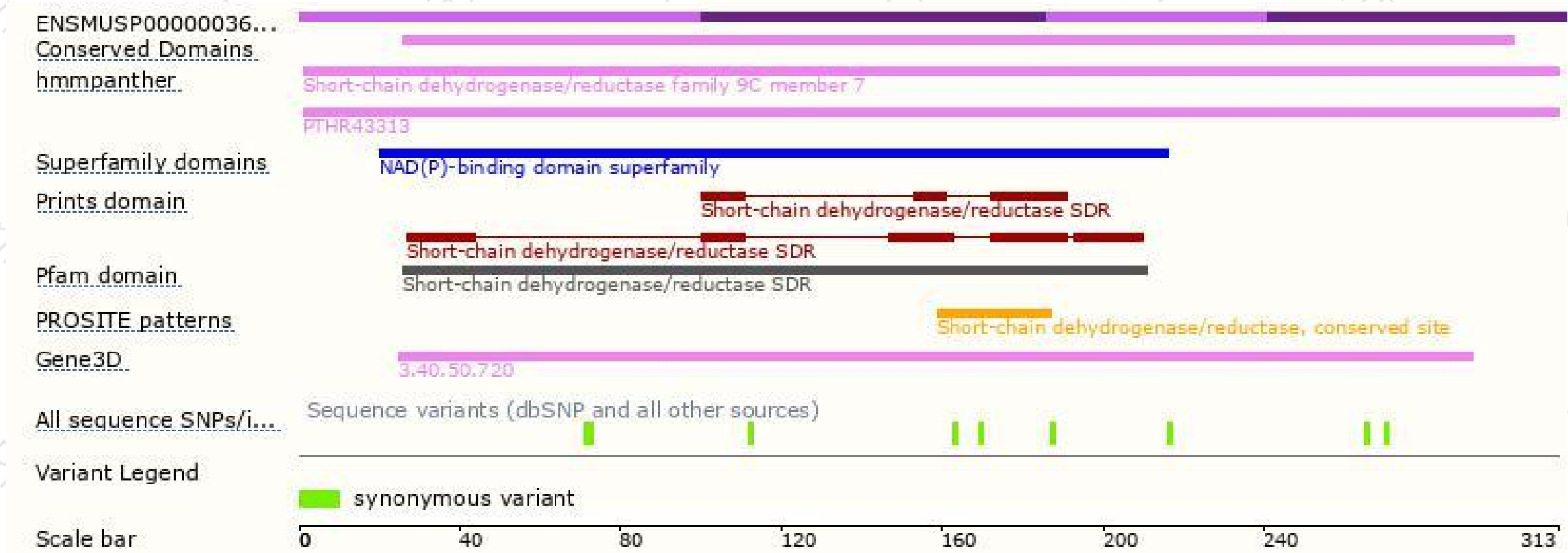
The strategy is based on the design of *Sdr9c7-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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