

Sdr42e1 Cas9-KO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Sdr42e1

Project type

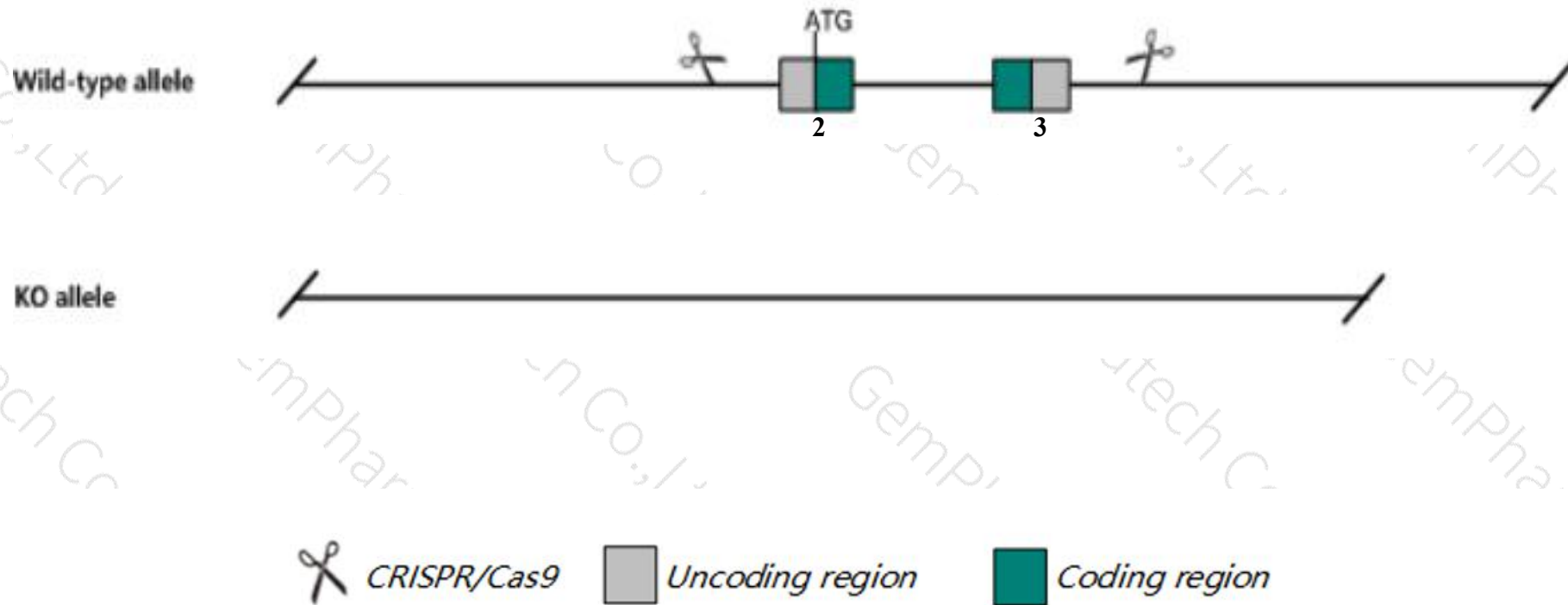
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Sdr42e1* gene. The schematic diagram is as follows:



- The *Sdr42e1* gene has 3 transcripts. According to the structure of *Sdr42e1* gene, exon2-exon3 of *Sdr42e1-201* (ENSMUST00000037955.13) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Sdr42e1* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Sdr42e1* gene is located on the Chr8.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)

Sdr42e1 short chain dehydrogenase/reductase family 42E, member 1 [*Mus musculus* (house mouse)]

Gene ID: 74032, updated on 13-Mar-2020

Summary

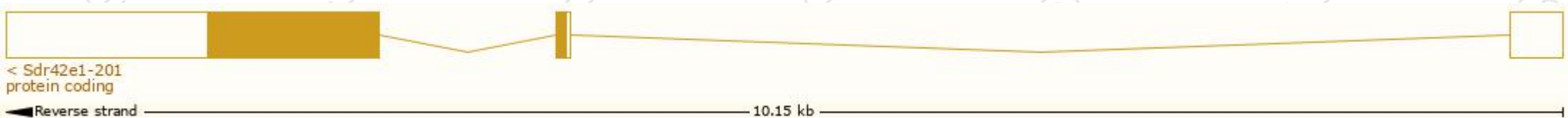
Official Symbol	Sdr42e1 provided by MGI
Official Full Name	short chain dehydrogenase/reductase family 42E, member 1 provided by MGI
Primary source	MGI:MGI:1921282
See related	Ensembl:ENSMUSG00000034308
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI117603; 4632417N05Rik
Expression	Biased expression in liver adult (RPKM 39.3), bladder adult (RPKM 18.5) and 12 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

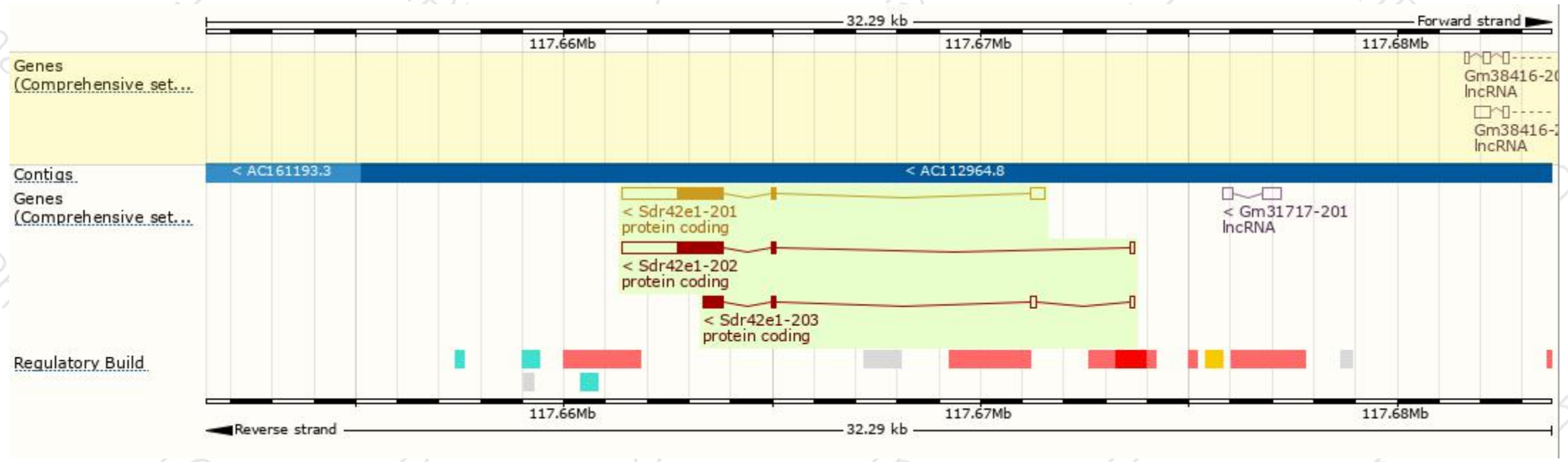
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Sdr42e1-201	ENSMUST000000037955.13	2867	394aa	Protein coding	CCDS222701	Q9D665	TSL:1 GENCODE basic APPRIS P1
Sdr42e1-202	ENSMUST00000173522.7	2615	394aa	Protein coding	CCDS222701	Q9D665	TSL:1 GENCODE basic APPRIS P1
Sdr42e1-203	ENSMUST00000174450.1	819	189aa	Protein coding	-	G3UXV3	CDS 3' incomplete TSL:2

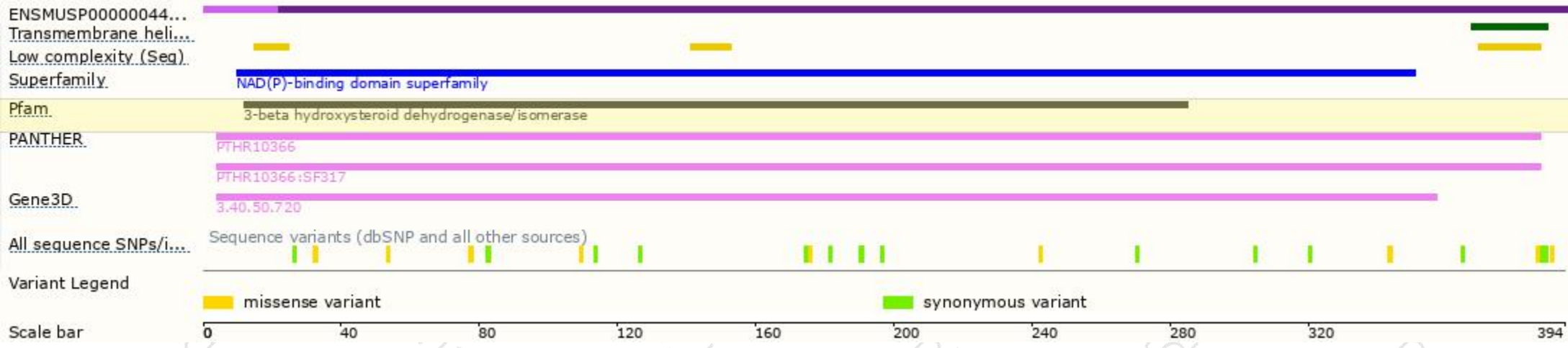
The strategy is based on the design of *Sdr42e1-201* transcript,The transcription is shown below



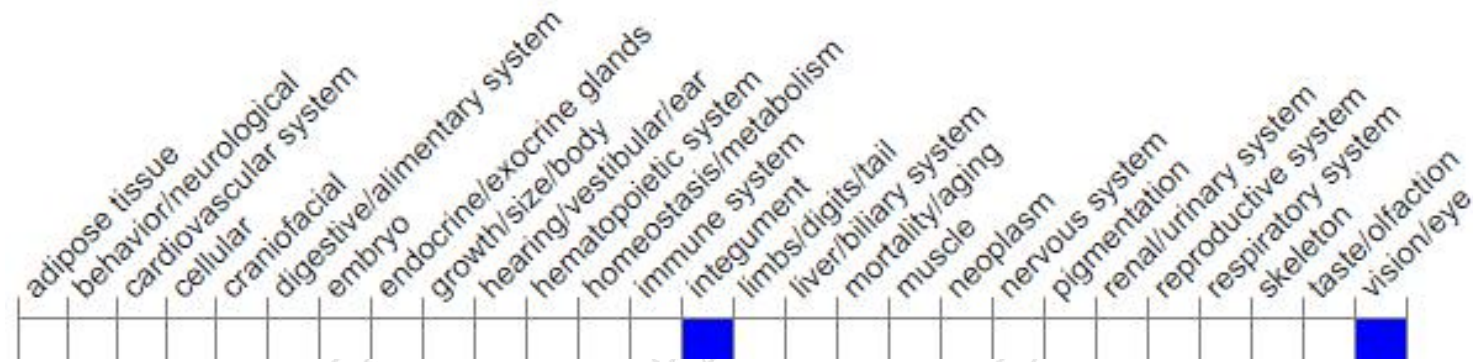
Genomic location distribution



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/>).

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

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