Aldh3b1 Cas9-KO Strategy

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Project Overview

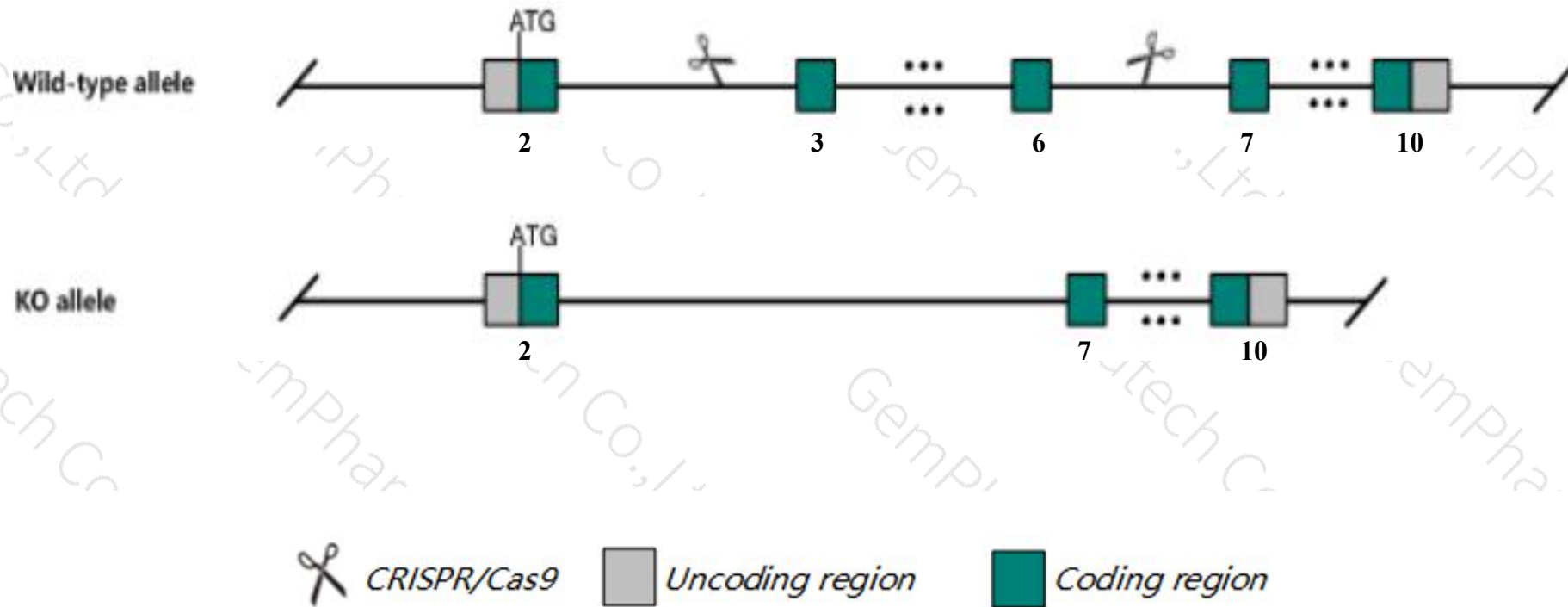|	
Project Name	***Aldh3b1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Aldh3b1* gene. The schematic diagram is as follows:

➢ The *Aldh3b1* gene has 2 transcripts. According to the structure of *Aldh3b1* gene, exon3-exon6 of *Aldh3b1-201* (ENSMUST00000051803.7) transcript is recommended as the knockout region.The region contains 400bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Aldh3b1* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Aldh3b1* gene is located on the Chr19. 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）

Aldh3b1 aldehyde dehydrogenase 3 family, member B1 [Mus musculus (house mouse)]

Gene ID: 67689, updated on 13-Mar-2020

Summary

|	
Official Symbol	Aldh3b1 provided by MGI
Official Full Name	aldehyde dehydrogenase 3 family, member B1 provided by MGI
Primary source	MGI:MGI:1914939
See related	Ensembl:ENSMUSG00000024885
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	1700001N19Rik, ALDH4, ALDH7
Expression	Biased expression in adrenal adult (RPKM 64.8), lung adult (RPKM 33.1) and 13 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

The gene has 2 transcripts,all transcripts are shown below:

| Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Aldh3b1-201	ENSMUST00000051803.7	1924	468aa	Protein coding	CCDS29403	Q3TX25 Q80VQ0	TSL:1 GENCODE basic APPRIS P1
Aldh3b1-202	ENSMUST00000237391.1	717	No protein	Processed transcript	-	-	-

The strategy is based on the design of *Aldh3b1-201* transcript,the transcription is shown below

< Aldh3b1-201
protein coding

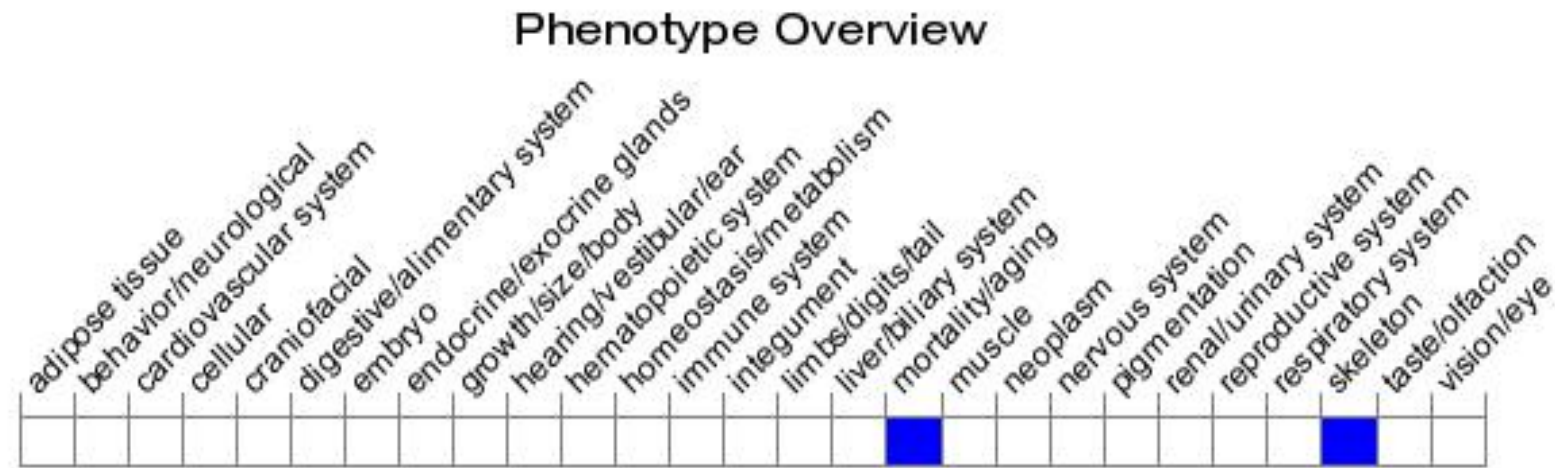Reverse strand   16.32 kb
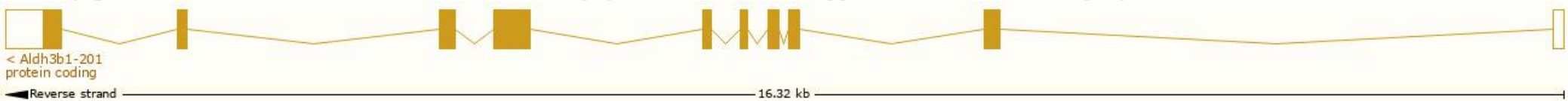
Genomic location distribution
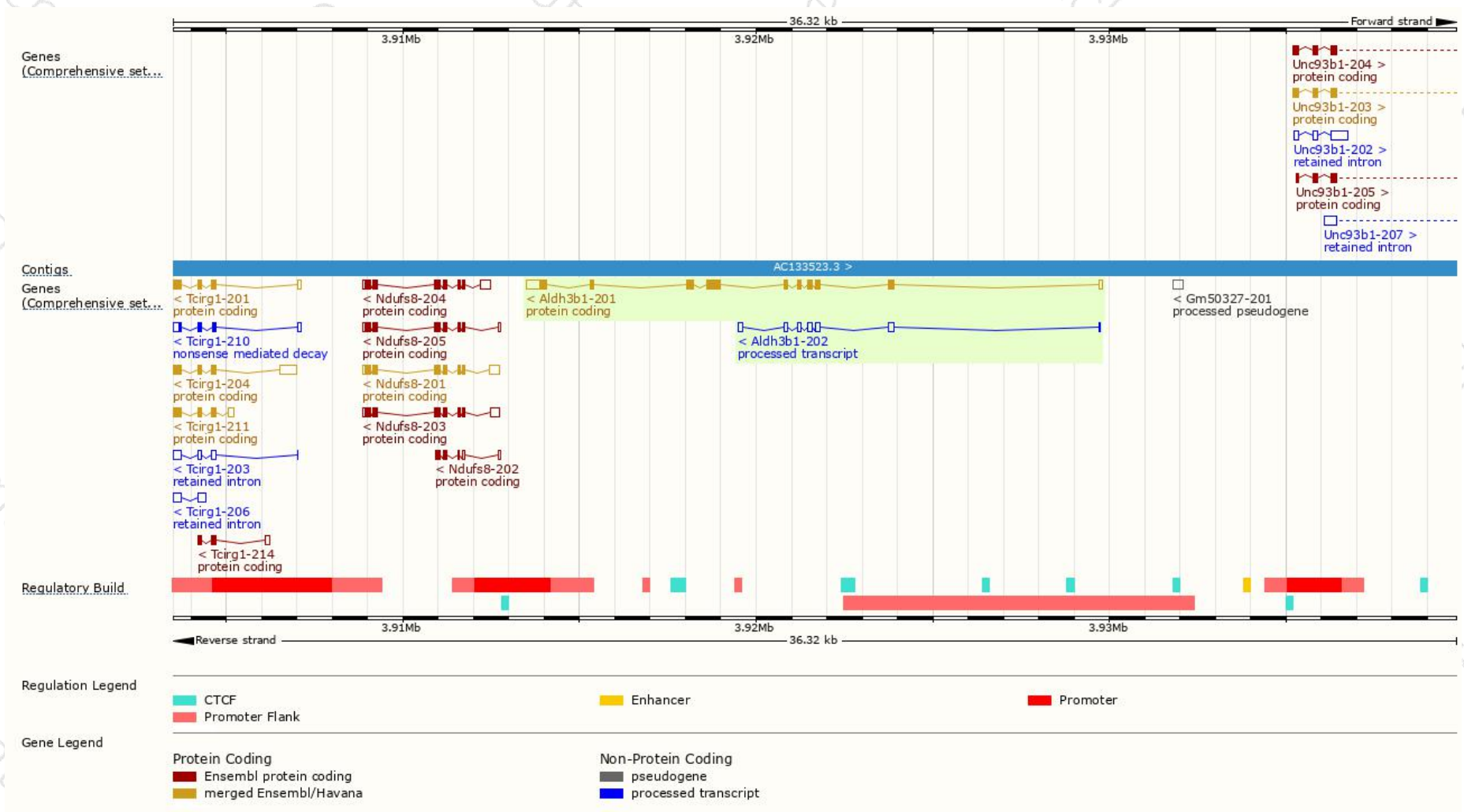
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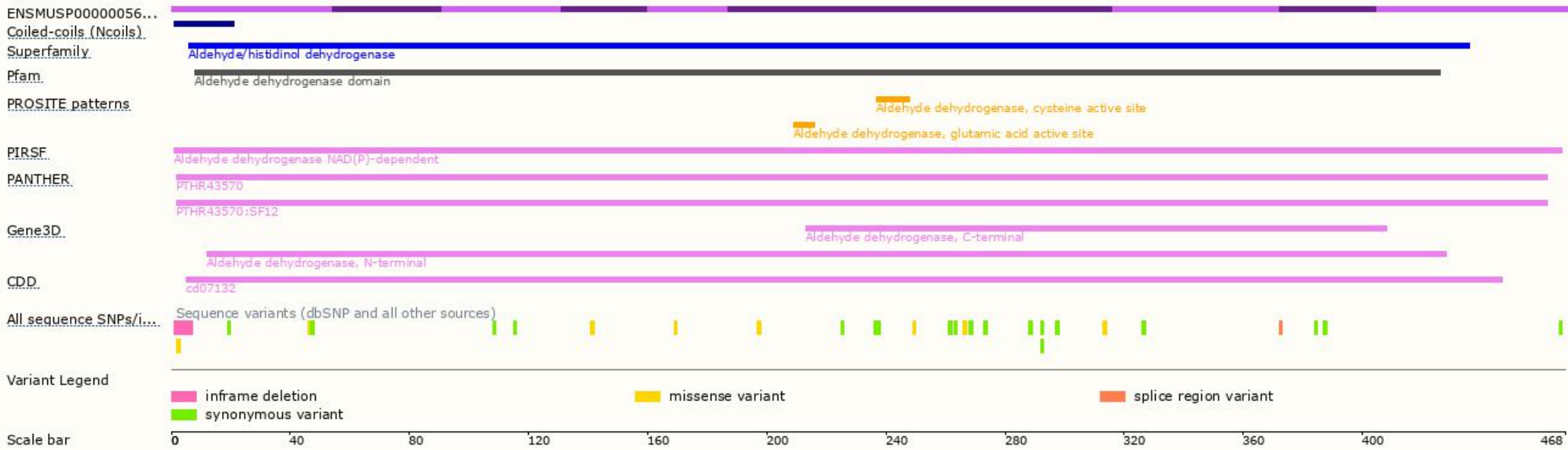
Mouse phenotype description(MGI)

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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