

Hsd3b1 Cas9-CKO Strategy

Designer:

JiaYu

Reviewer:

Xiaojing Li

Design Date:

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Project Overview

Project Name

Hsd3b1

Project type

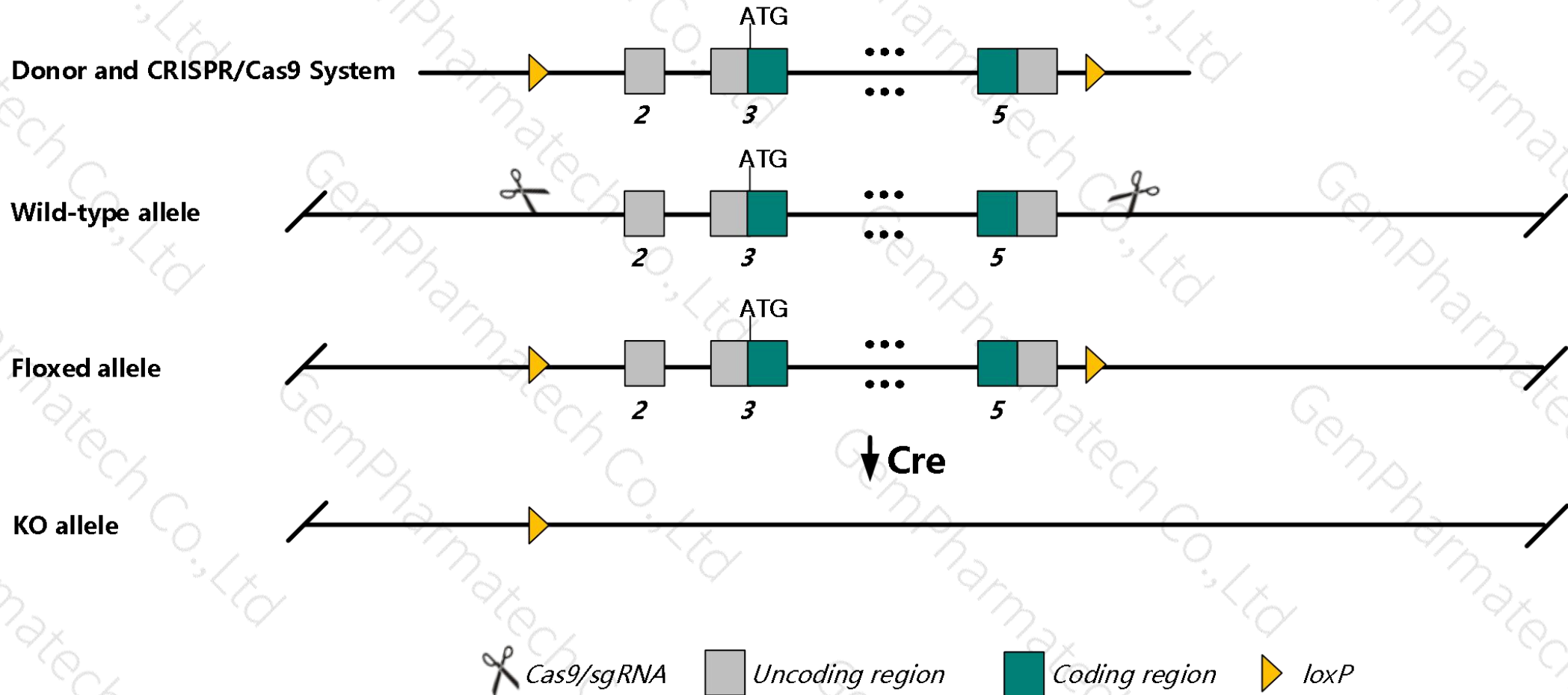
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Hsd3b1* gene. The schematic diagram is as follows:



Technical routes

- The *Hsd3b1* gene has 2 transcripts. According to the structure of *Hsd3b1* gene, exon2-exon5 of *Hsd3b1*-202 (ENSMUST00000107016.9) 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 *Hsd3b1* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Hsd3b1* gene is located on the Chr3. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Hsd3b1 hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta-isomerase 1 [Mus musculus (house mouse)]

Gene ID: 15492, updated on 19-Mar-2019

Summary



Official Symbol Hsd3b1 provided by [MGI](#)

Official Full Name hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta-isomerase 1 provided by [MGI](#)

Primary source [MGI:MGI:96233](#)

See related [Ensembl:ENSMUSG00000027871](#)

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 3-beta-HSD I, D3Ert383e

Expression Biased expression in adrenal adult (RPKM 1254.1), ovary adult (RPKM 570.9) and 1 other tissue [See more](#)

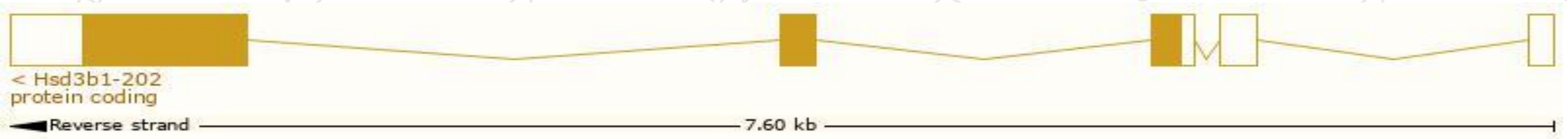
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

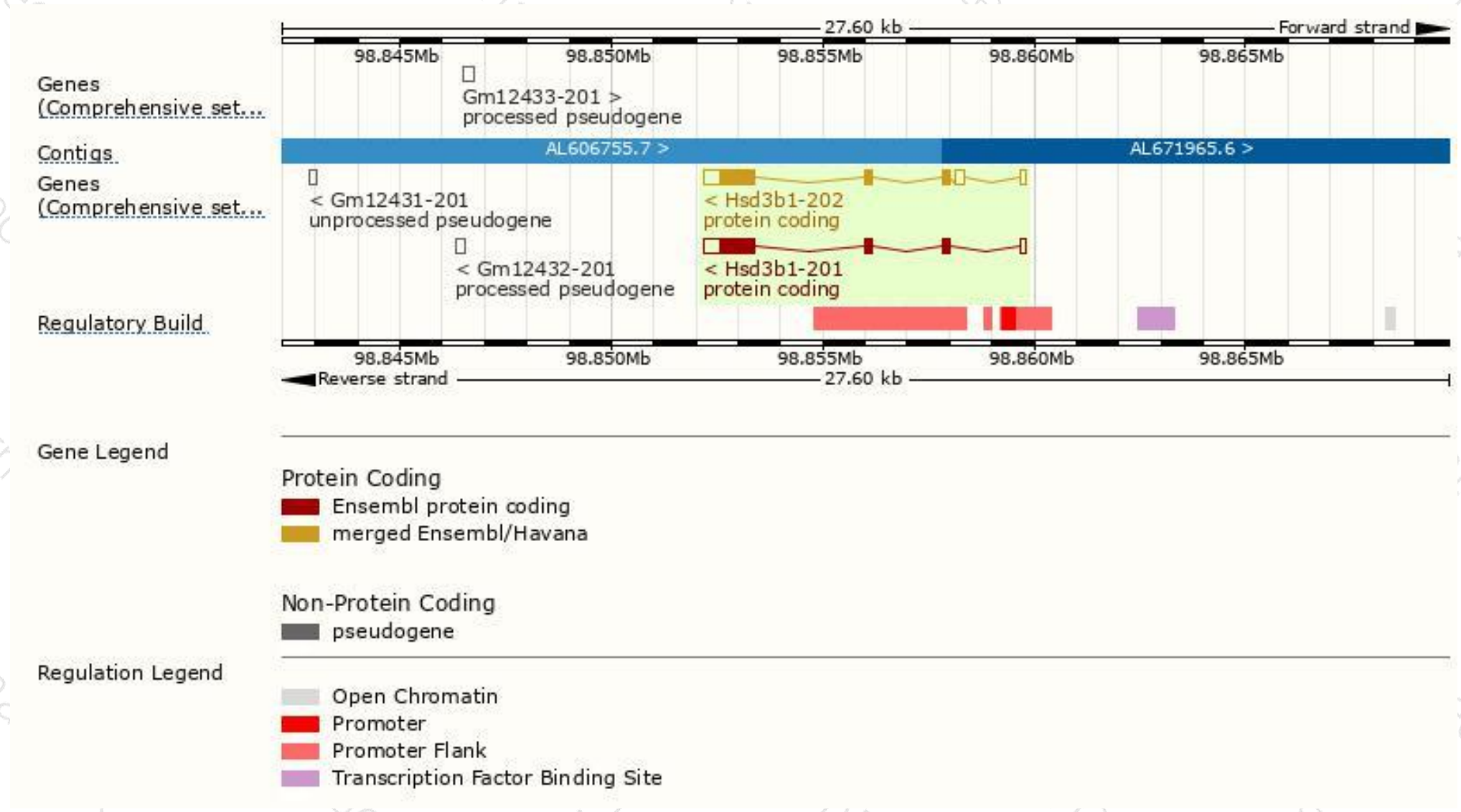
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Hsd3b1-202	ENSMUST00000107016.9	1855	373aa	Protein coding	CCDS17670	P24815 Q3UI20	TSL:1 GENCODE basic APPRIS P1
Hsd3b1-201	ENSMUST00000029465.9	1663	373aa	Protein coding	CCDS17670	P24815 Q3UI20	TSL:2 GENCODE basic APPRIS P1

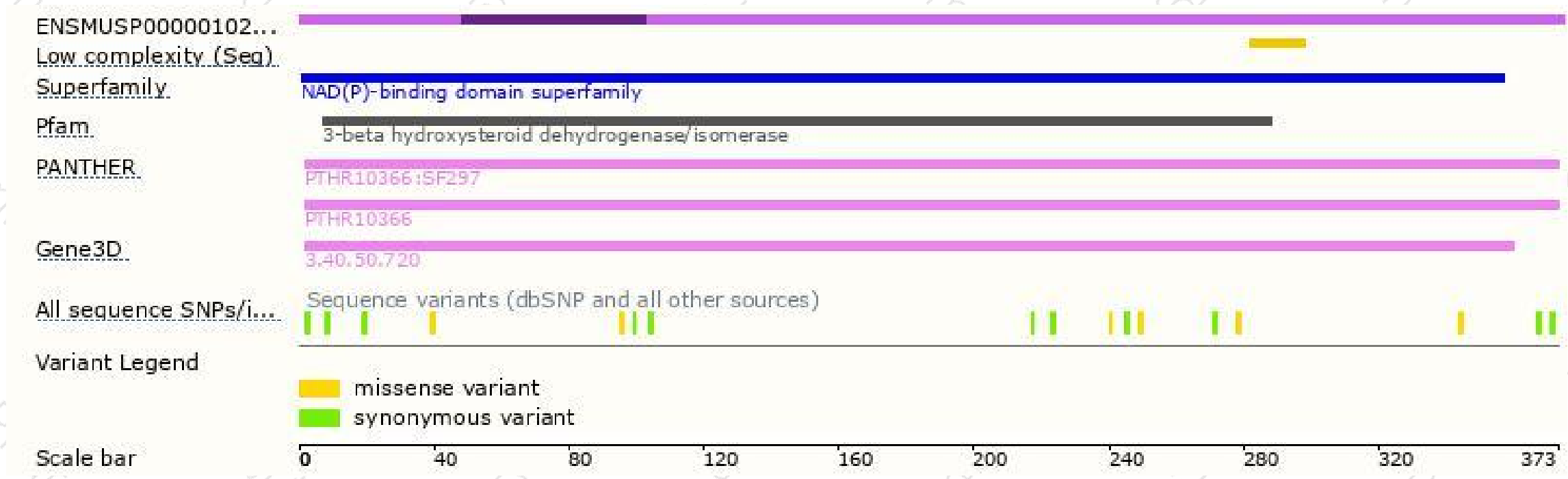
The strategy is based on the design of *Hsd3b1-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

