

Hspa12b Cas9-CKO Strategy

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Project Overview

Project Name

Hspa12b

Project type

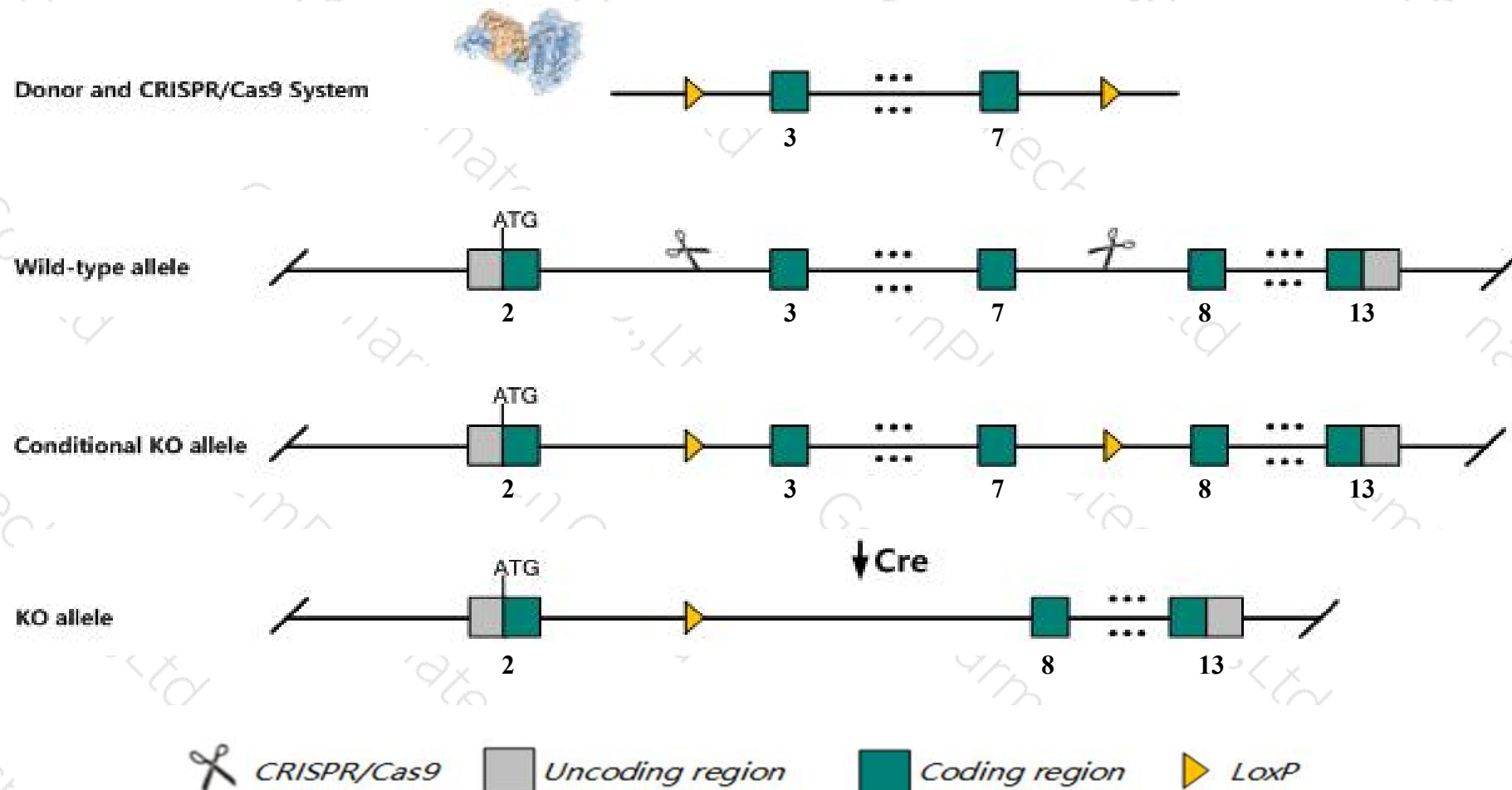
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Hspa12b* gene. The schematic diagram is as follows:



- The *Hspa12b* gene has 3 transcripts. According to the structure of *Hspa12b* gene, exon3-exon7 of *Hspa12b*-201 (ENSMUST00000099349.9) transcript is recommended as the knockout region. The region contains 632bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Hspa12b* 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.

- The *Hspa12b* gene is located on the Chr2. 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.
- The floxed region is near to the N-terminal of *Gm11037* gene, this strategy may influence the regulatory function of the N-terminal of *Gm11037* gene.
- 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)

Hspa12b heat shock protein 12B [Mus musculus (house mouse)]

Gene ID: 72630, updated on 31-Jan-2019

Summary



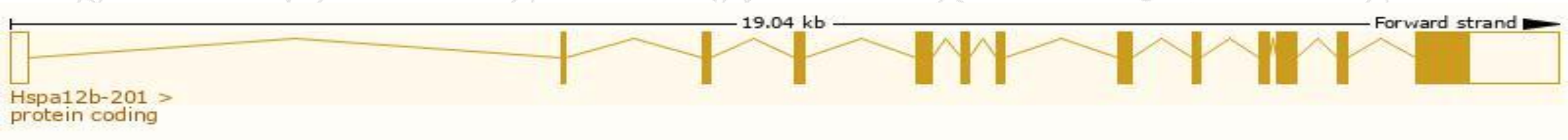
Official Symbol	Hspa12b provided by MGI
Official Full Name	heat shock protein 12B provided by MGI
Primary source	MGI:MGI:1919880
See related	Ensembl:ENSMUSG00000074793
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2700081N06Rik
Expression	Broad expression in lung adult (RPKM 21.1), subcutaneous fat pad adult (RPKM 16.9) and 22 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

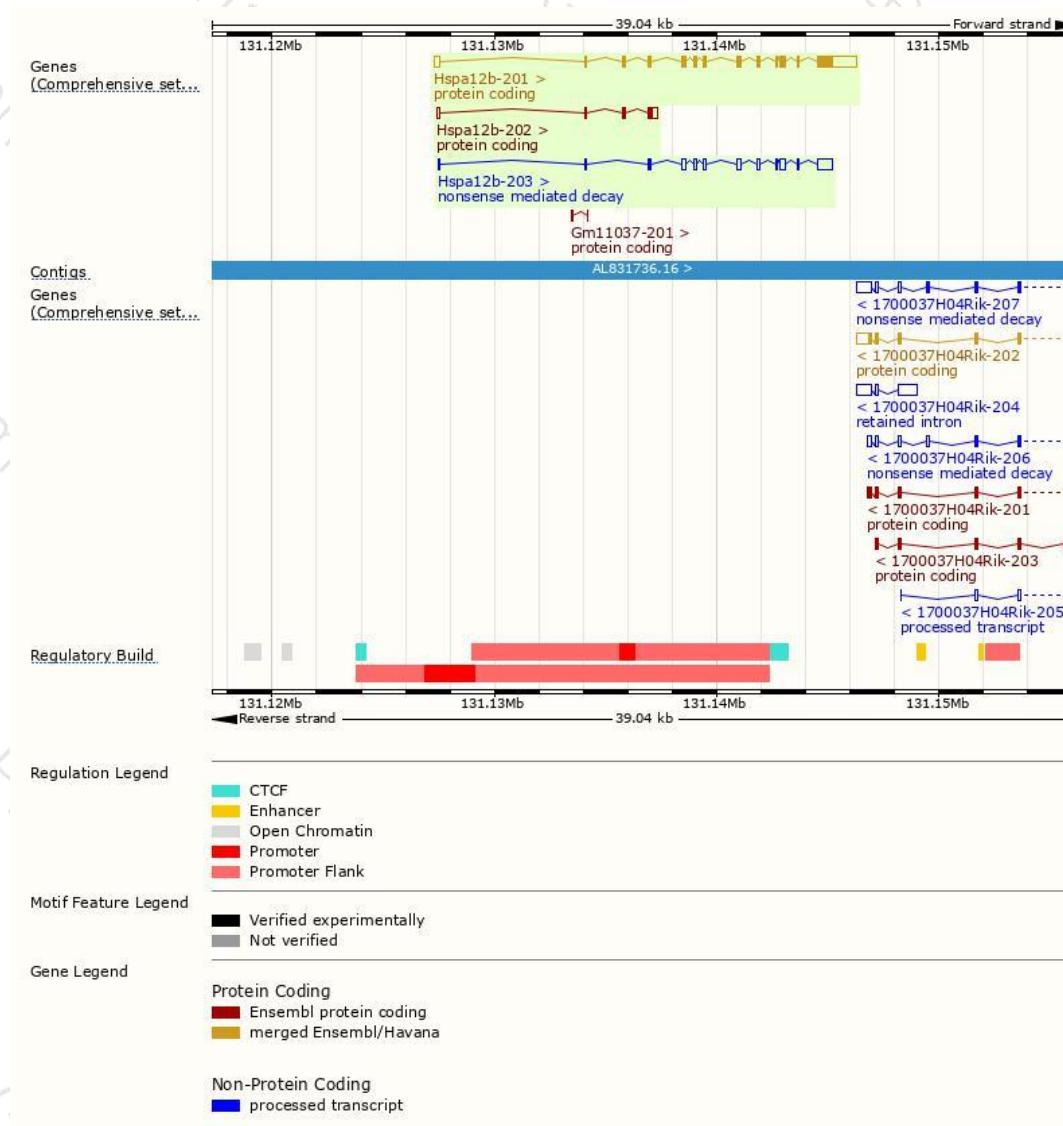
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Hspa12b-201	ENSMUST00000099349.9	3413	685aa	Protein coding	CCDS16755	Q9CZJ2	TSL:1 GENCODE basic APPRIS P1
Hspa12b-202	ENSMUST00000100763.8	628	107aa	Protein coding	-	H7BX84	TSL:2 GENCODE basic
Hspa12b-203	ENSMUST00000127862.1	2007	46aa	Nonsense mediated decay	-	S4R176	TSL:5

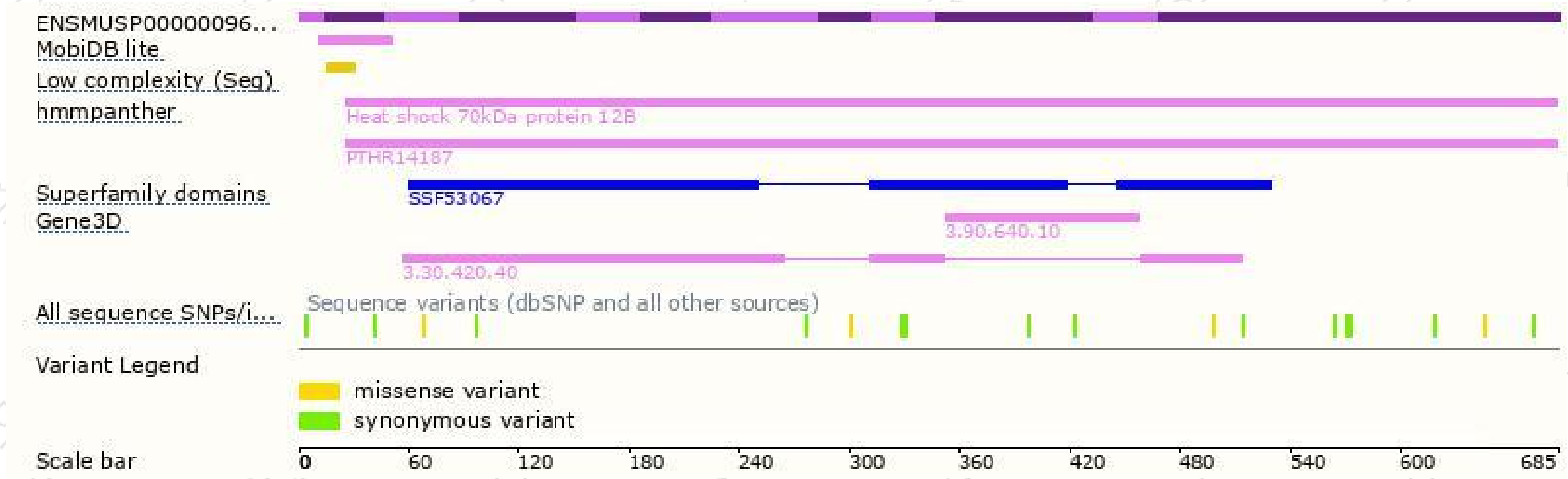
The strategy is based on the design of *Hspa12b-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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