

Hspa12b Cas9-KO Strategy

Designer: Xueting Zhang

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Project Overview

Project Name

Hspa12b

Project type

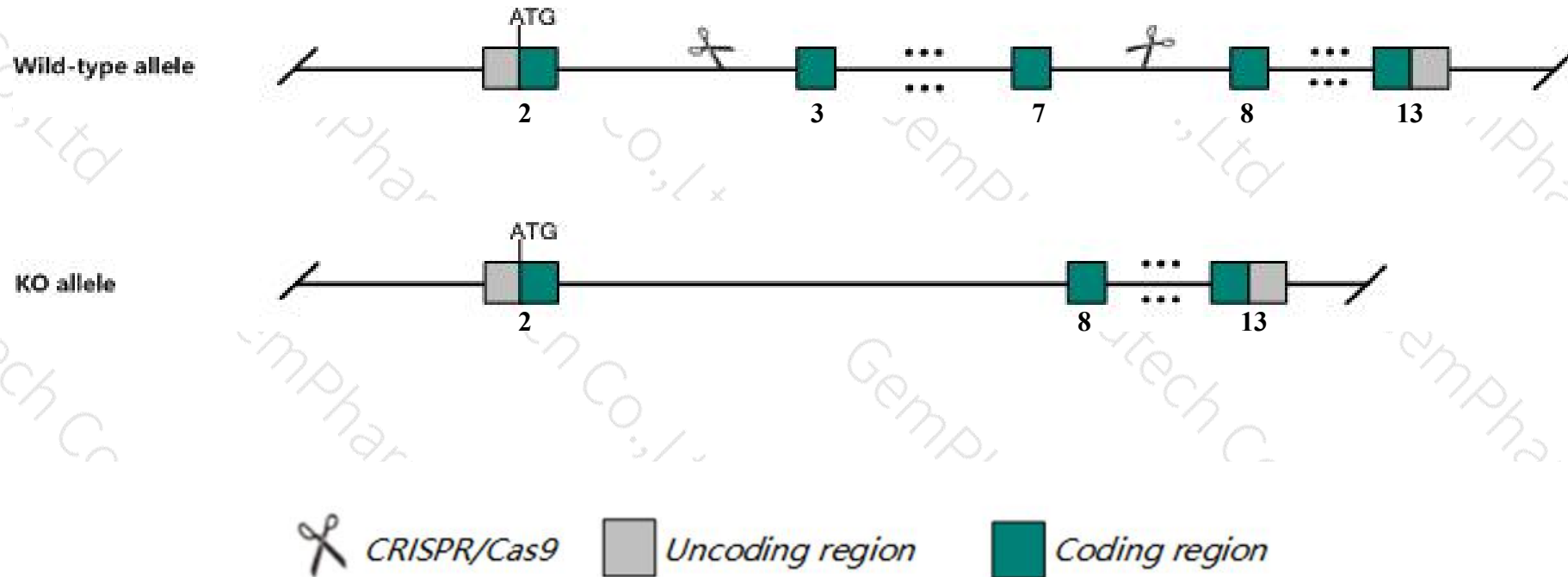
Cas9-KO

Strain background

C57BL/6JGpt

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

- 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 knockout 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

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

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

Summary



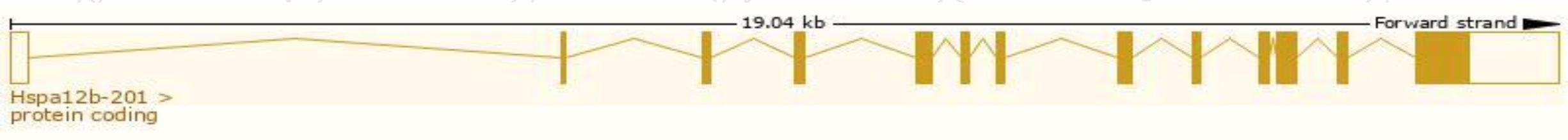
| | |
|---------------------------|---|
| Official Symbol | Hspa12b provided by MGI |
| Official Full Name | heat shock protein 12B provided by MGI |
| Primary source | MGI:MGI:1919880 |
| See related | Ensembl:ENSMUSG00000074793 |
| Gene type | protein coding |
| RefSeq status | PROVISIONAL |
| Organism | 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)

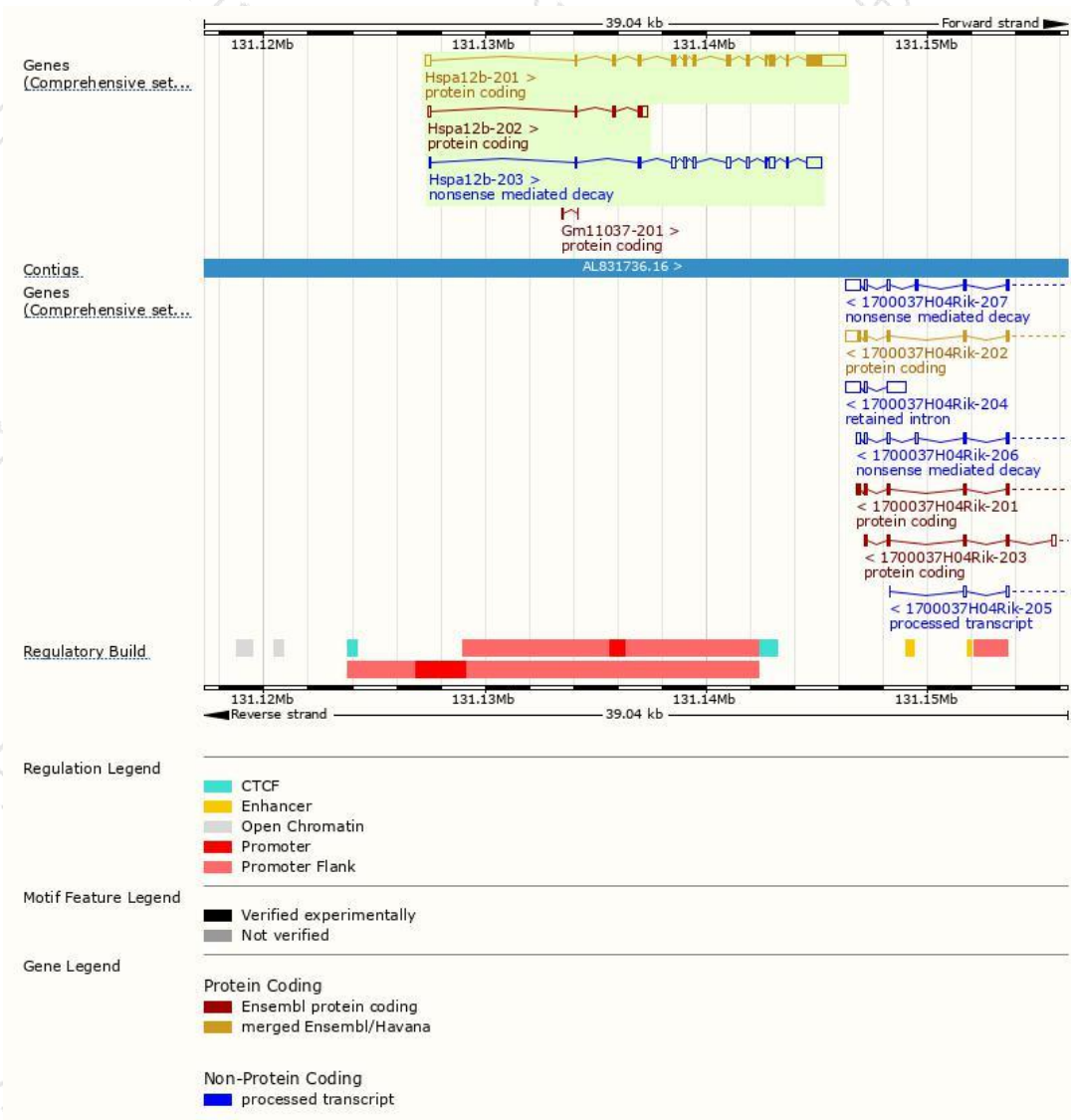
The gene has 3 transcripts,all transcripts are shown below:

| 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 |

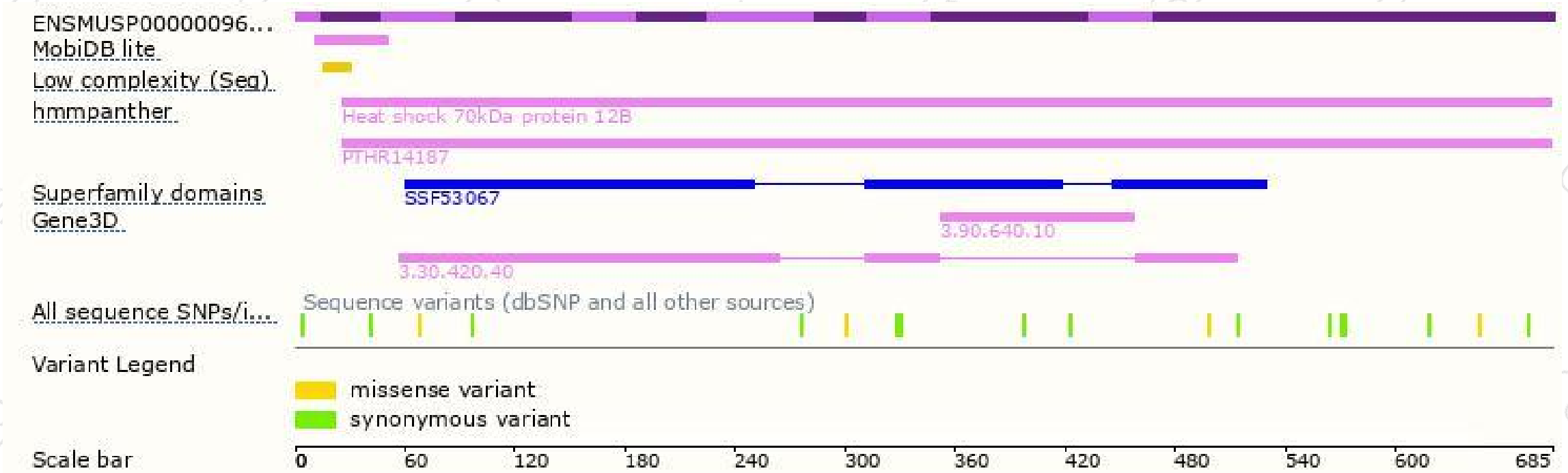
The strategy is based on the design of *Hspa12b-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

