

Hspa13 Cas9-KO Strategy

Designer:

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Project Overview

Project Name

Hspa13

Project type

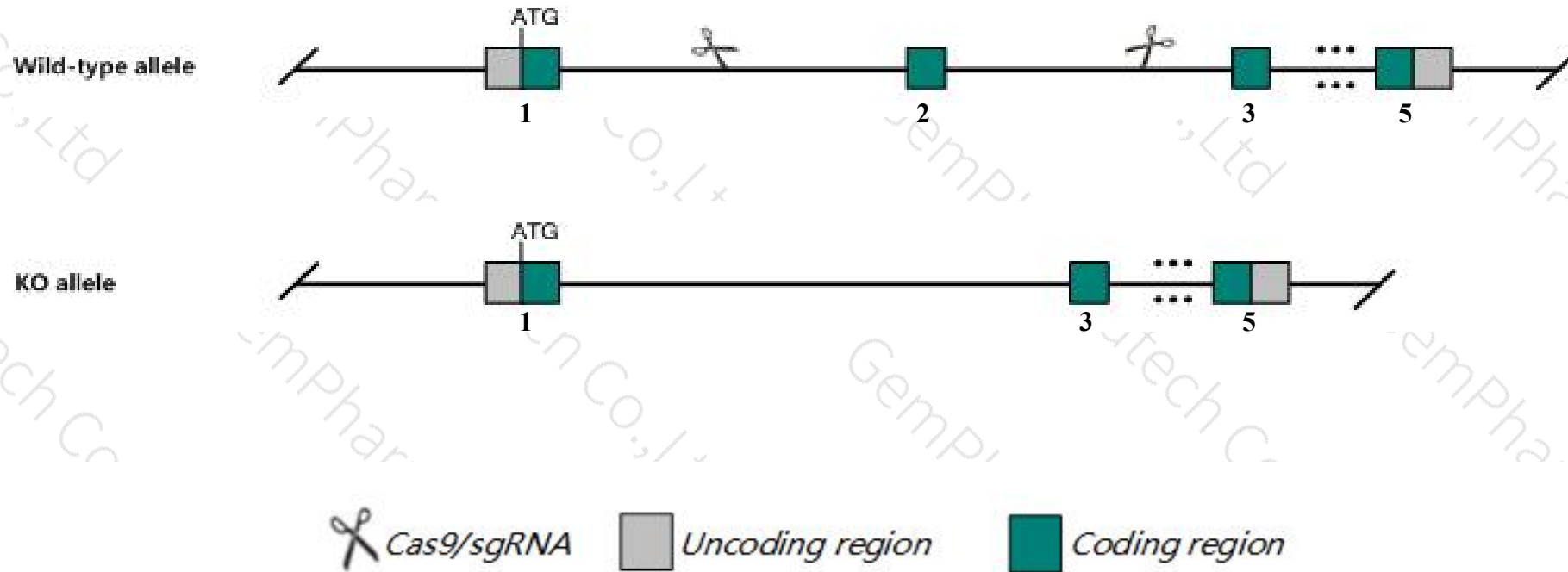
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Hspa13* gene. The schematic diagram is as follows:



- The *Hspa13* gene has 4 transcripts. According to the structure of *Hspa13* gene, exon2 of *Hspa13-201* (ENSMUST00000046283.15) transcript is recommended as the knockout region. The region contains 341bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Hspa13* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- The *Hspa13* gene is located on the Chr16. 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)

Hspa13 heat shock protein 70 family, member 13 [Mus musculus (house mouse)]

Gene ID: 110920, updated on 31-Jan-2019

Summary



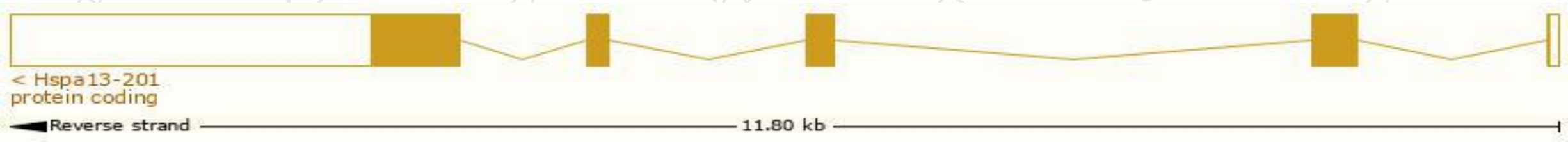
Official Symbol	Hspa13 provided by MGI
Official Full Name	heat shock protein 70 family, member 13 provided by MGI
Primary source	MGI:MGI:1309463
See related	Ensembl:ENSMUSG000000032932
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1600002I10Rik, AV006182, B230217N24Rik, Stch
Expression	Ubiquitous expression in placenta adult (RPKM 10.3), CNS E18 (RPKM 6.6) and 23 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

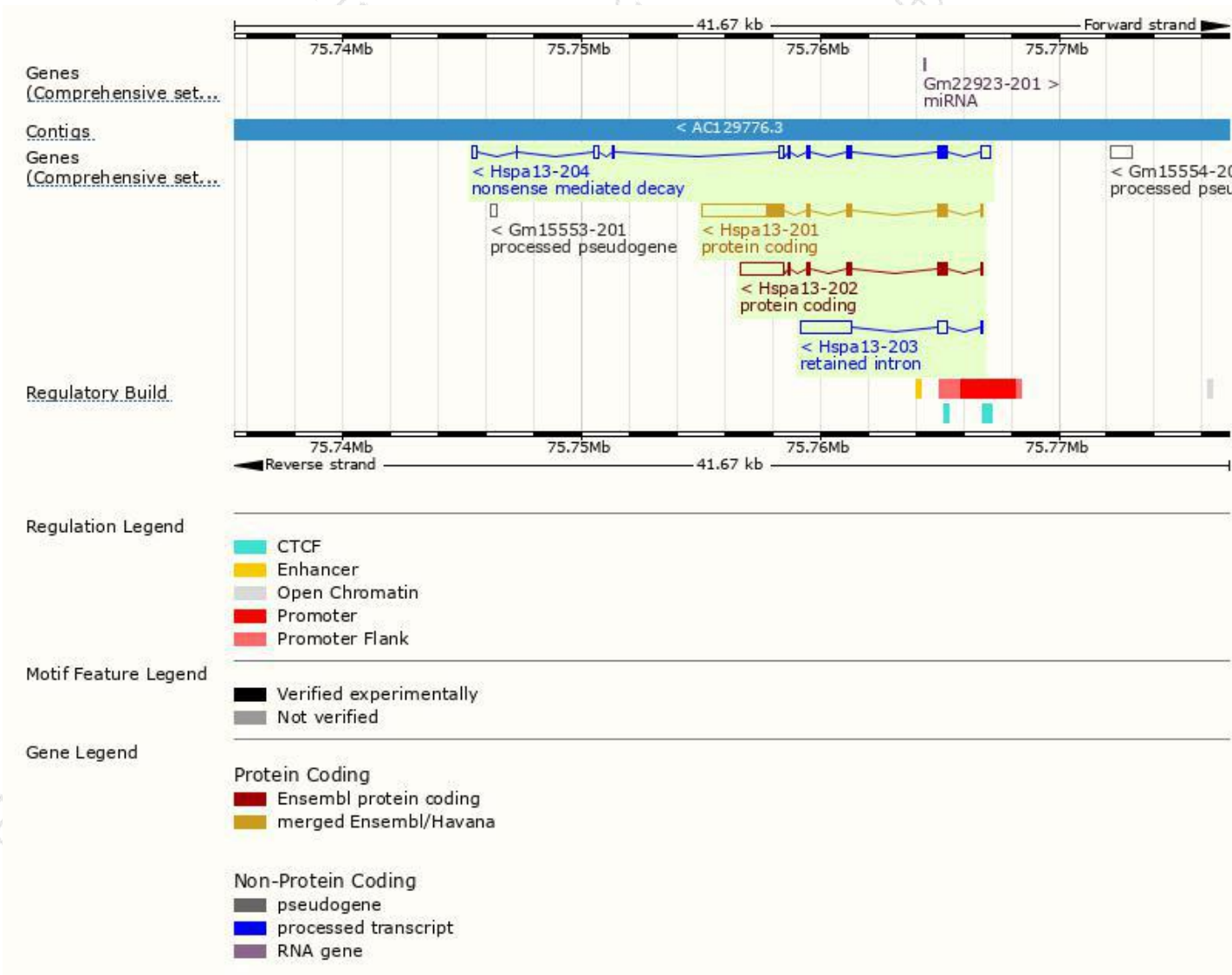
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Hspa13-201	ENSMUST00000046283.15	4237	471aa	Protein coding	CCDS28273	Q8BM72	TSL:1 GENCODE basic APPRIS P1
Hspa13-202	ENSMUST00000114244.1	2674	260aa	Protein coding	-	D3Z0Y0	TSL:5 GENCODE basic
Hspa13-204	ENSMUST00000232633.1	1837	260aa	Nonsense mediated decay	-	D3Z0Y0	
Hspa13-203	ENSMUST00000137806.1	2511	No protein	Retained intron	-	-	TSL:1

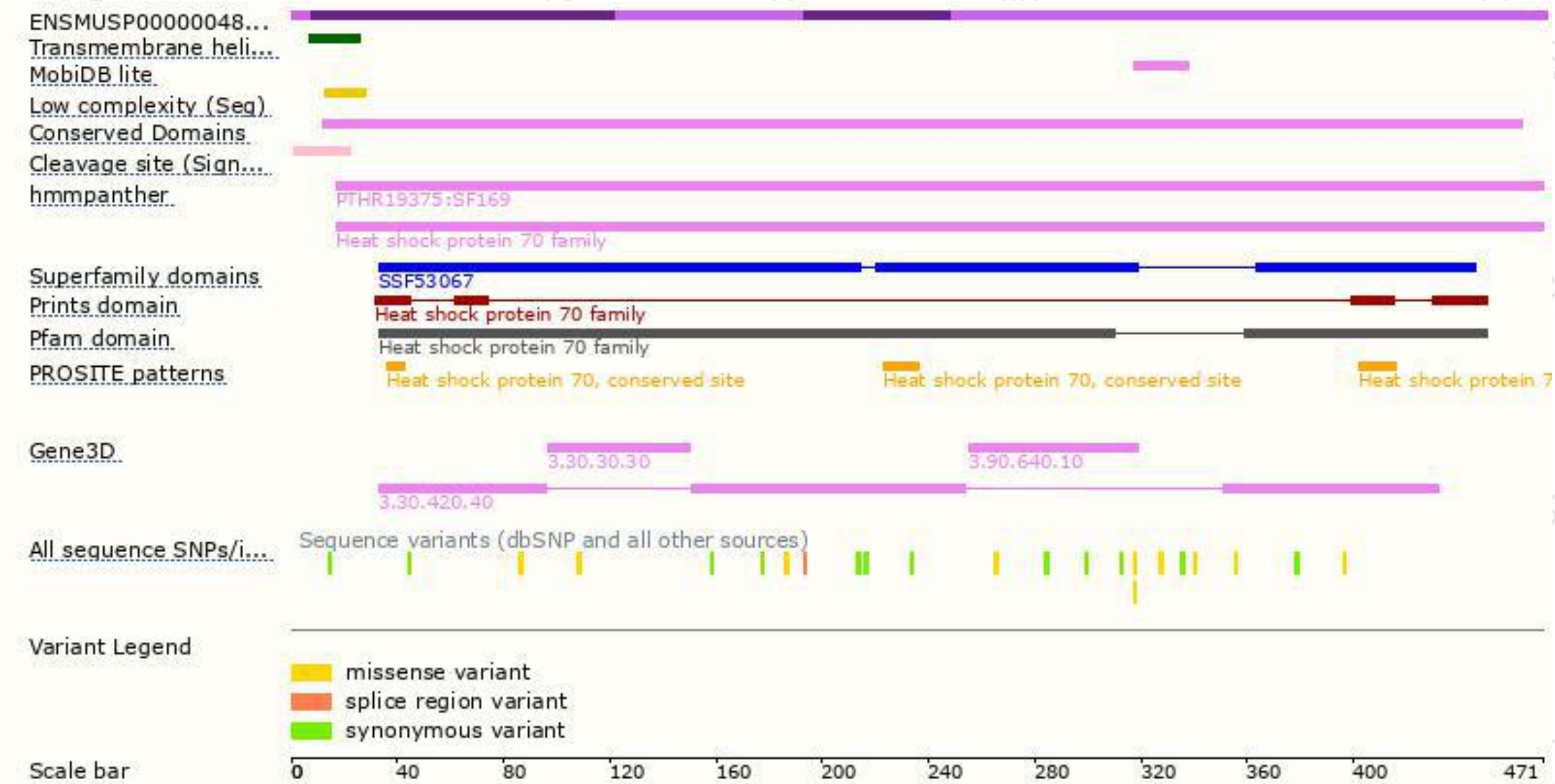
The strategy is based on the design of *Hspa13-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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