

Hsf2bp Cas9-CKO Strategy

Designer:Lixin LYU

Project Overview

Project Name

Hsf2bp

Project type

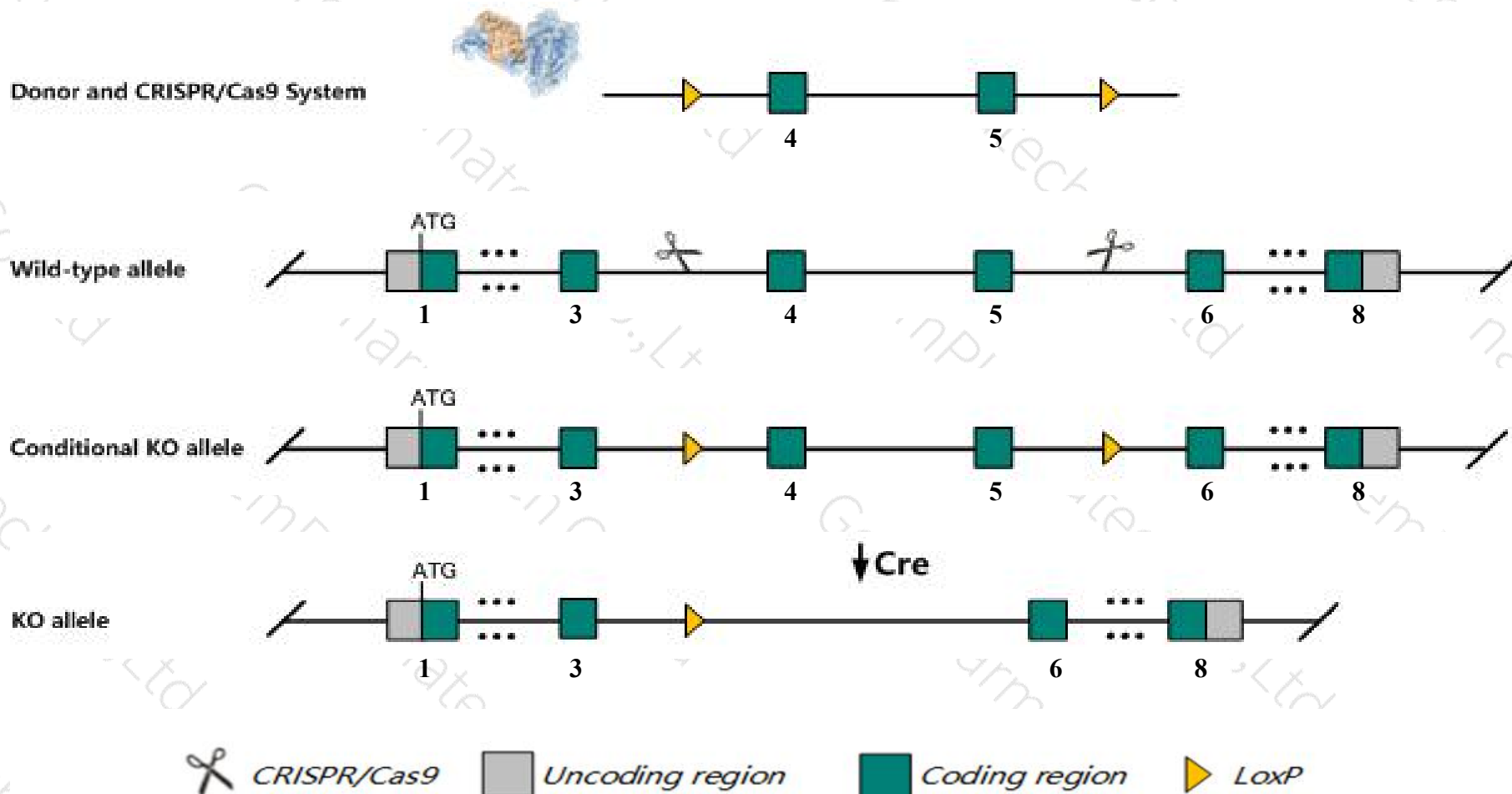
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Hsf2bp* gene. The schematic diagram is as follows:



- The *Hsf2bp* gene has 6 transcripts. According to the structure of *Hsf2bp* gene, exon4-exon5 of *Hsf2bp-201* (ENSMUST00000002145.11) transcript is recommended as the knockout region. The region contains 283bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Hsf2bp* 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 *Hsf2bp* gene is located on the Chr17. 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)

Hsf2bp heat shock transcription factor 2 binding protein [Mus musculus (house mouse)]

Gene ID: 74377, updated on 5-Feb-2019

Summary



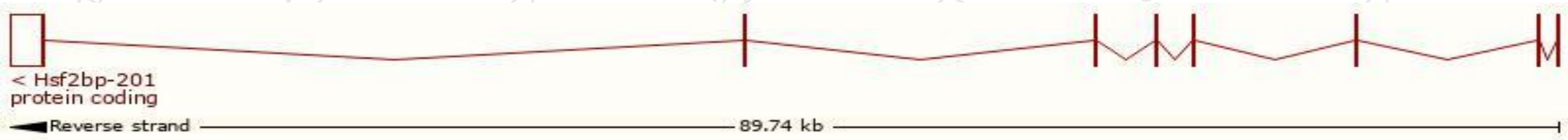
Official Symbol	Hsf2bp provided by MGI
Official Full Name	heat shock transcription factor 2 binding protein provided by MGI
Primary source	MGI:MGI:1921627
See related	Ensembl:ENSMUSG00000002076
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4932437G14Rik, Meilb2
Expression	Biased expression in testis adult (RPKM 5.3), kidney adult (RPKM 0.7) and 1 other tissue See more
Orthologs	human all

Transcript information (Ensembl)

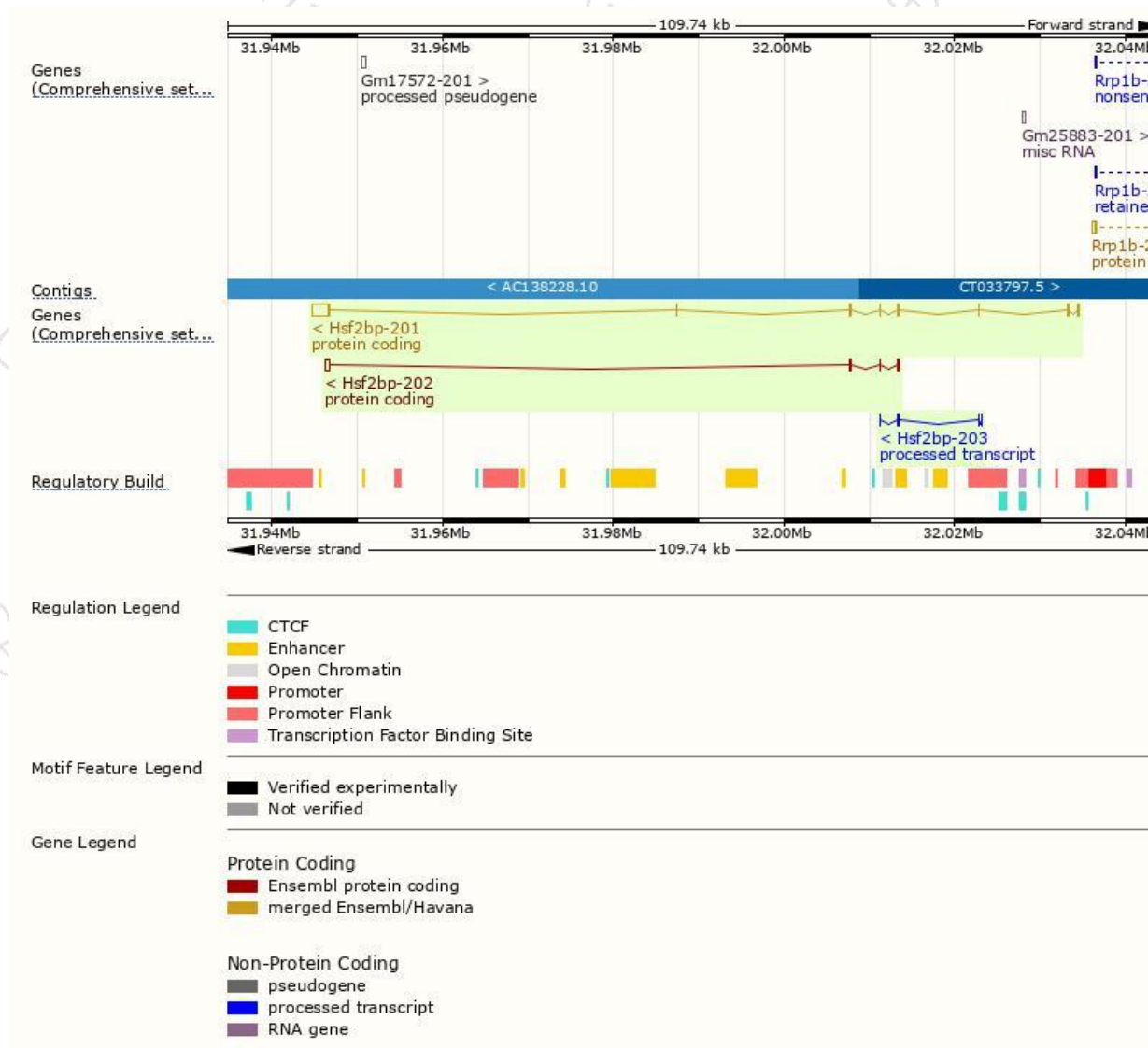
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Hsf2bp-206	ENSMUST00000238192.1	3115	338aa	Protein coding	CCDS50056	-	GENCODE basic APPRIS P2
Hsf2bp-201	ENSMUST00000002145.11	2867	338aa	Protein coding	CCDS50056	Q9D4G2	TSL:1 GENCODE basic APPRIS P2
Hsf2bp-202	ENSMUST00000133308.2	1479	263aa	Protein coding	-	F6UJ67	TSL:3 GENCODE basic APPRIS ALT2
Hsf2bp-204	ENSMUST00000236321.1	1480	No protein	Processed transcript	-	-	
Hsf2bp-205	ENSMUST00000237527.1	1195	No protein	Processed transcript	-	-	
Hsf2bp-203	ENSMUST00000138172.1	387	No protein	Processed transcript	-	-	TSL:5

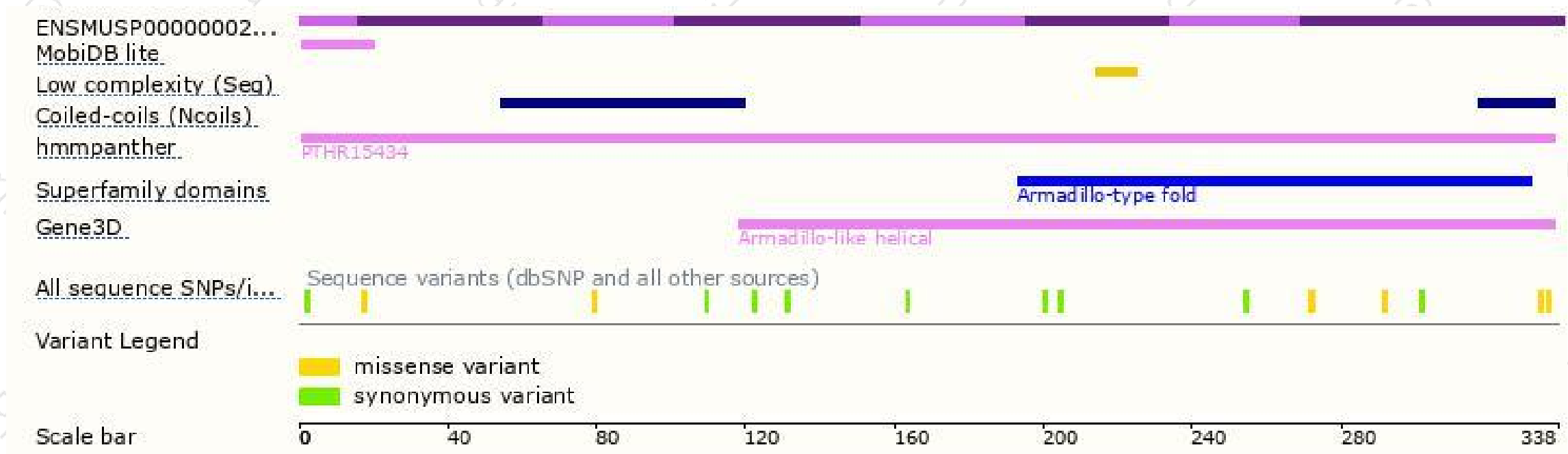
The strategy is based on the design of *Hsf2bp-201* transcript,The transcription is shown below



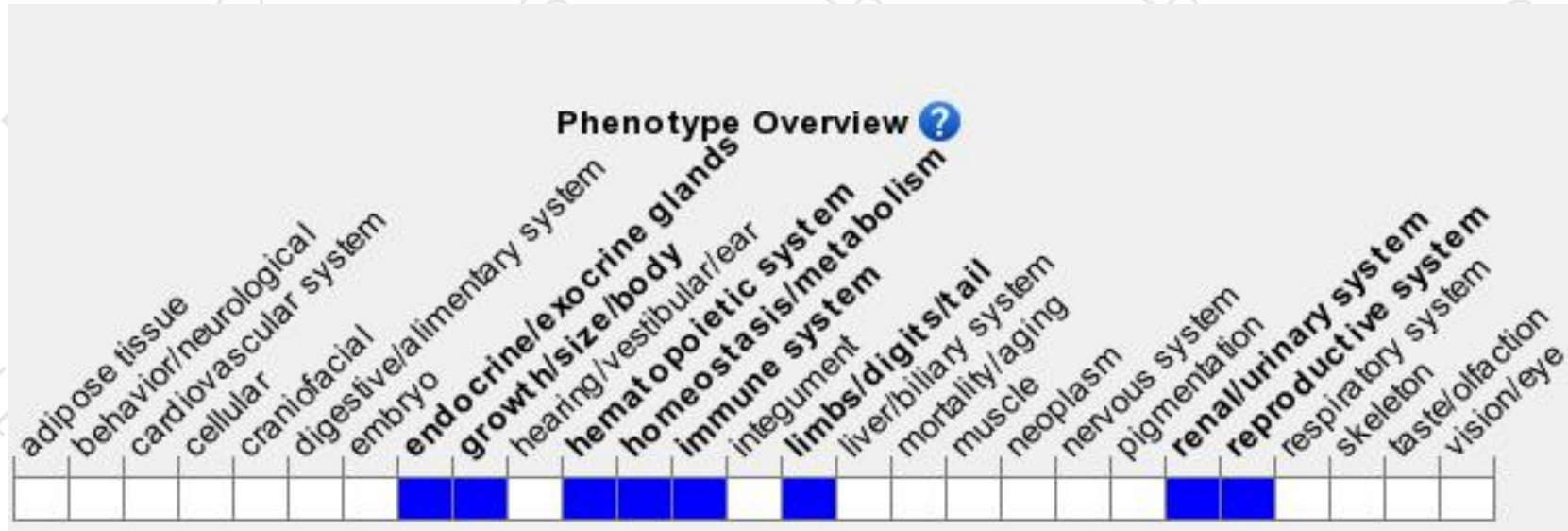
Genomic location distribution



Protein domain



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.

Tel: 400-9660890

