

Hebp1 Cas9-CKO Strategy

Designer:

Daohua Xu

Reviewer:

Huimin Su

Design Date:

2019-8-29

Project Overview

Project Name

Hebp1

Project type

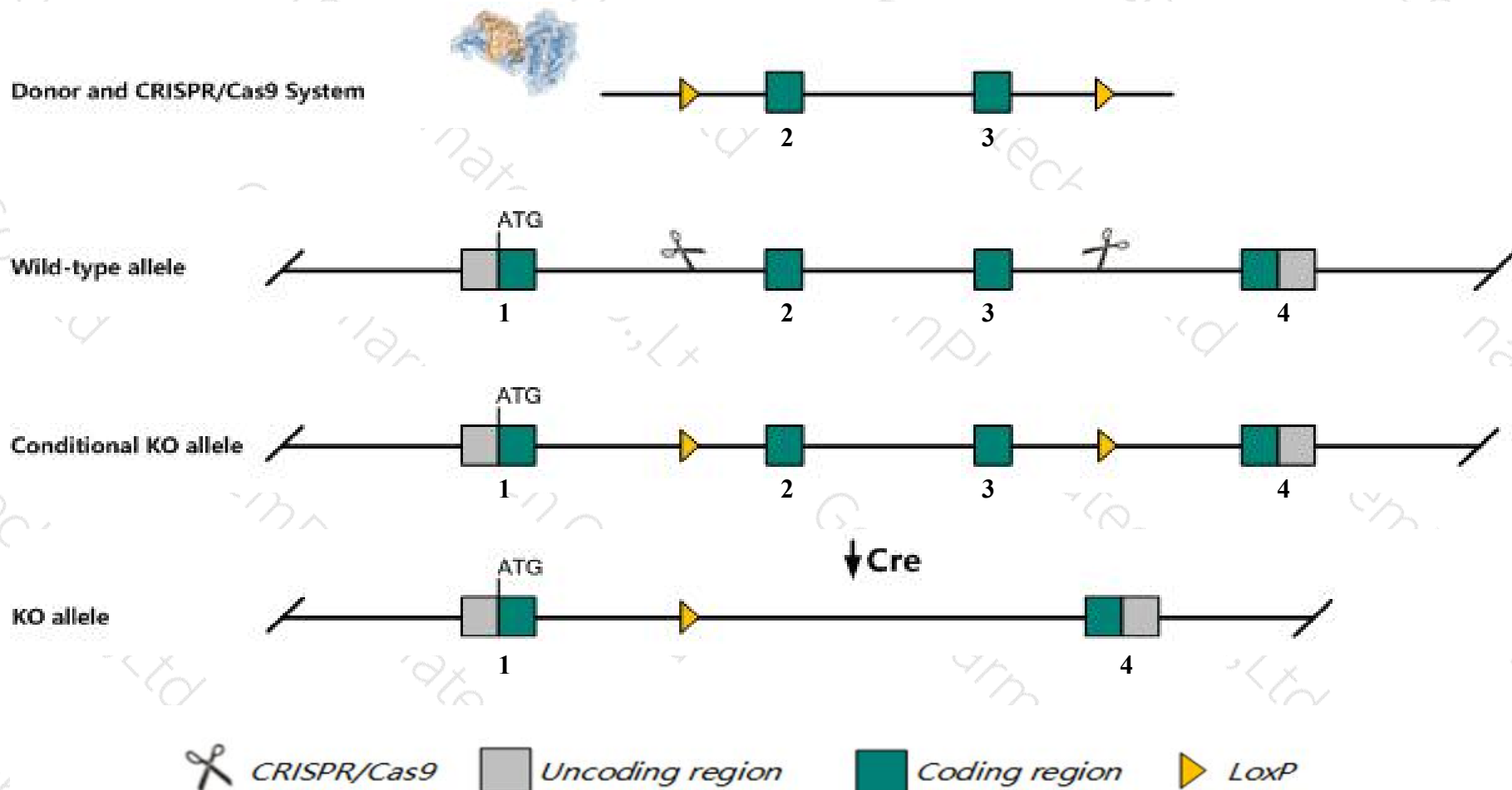
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Hebp1* gene. The schematic diagram is as follows:



- The *Hebp1* gene has 4 transcripts. According to the structure of *Hebp1* gene, exon2-exon3 of *Hebp1*-201 (ENSMUST00000045855.8) transcript is recommended as the knockout region. The region contains 320bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Hebp1* 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 *Hebp1* gene is located on the Chr6. 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)

Hebp1 heme binding protein 1 [Mus musculus (house mouse)]

Gene ID: 15199, updated on 31-Jan-2019

Summary



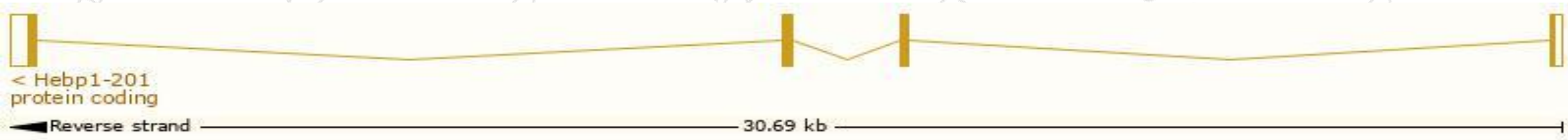
Official Symbol	Hebp1 provided by MGI
Official Full Name	heme binding protein 1 provided by MGI
Primary source	MGI:MGI:1333880
See related	Ensembl:ENSMUSG00000042770
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Hebp, p22HBP
Expression	Broad expression in liver E14 (RPKM 81.5), liver adult (RPKM 79.6) and 17 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

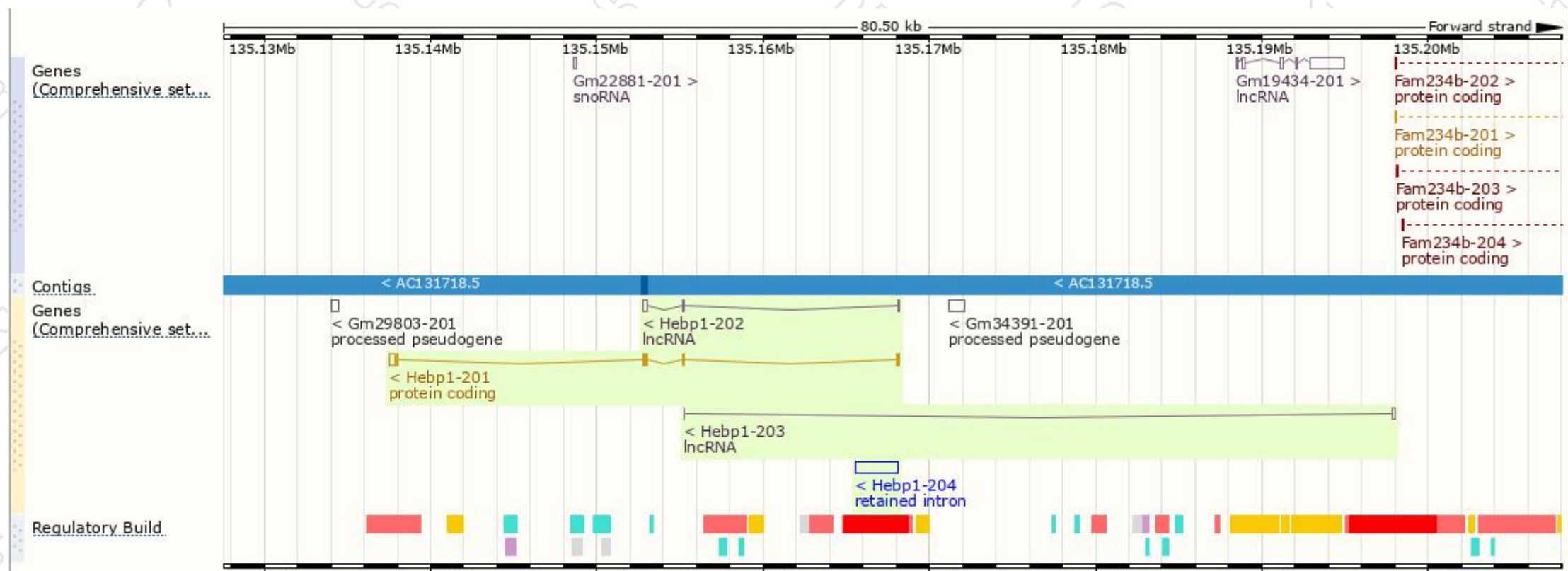
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Hebp1-201	ENSMUST00000045855.8	1058	190aa	Protein coding	CCDS20645	A0A140T8J4	TSL:1 GENCODE basic APPRIS P1
Hebp1-204	ENSMUST00000205232.1	2618	No protein	Retained intron	-	-	TSL:NA
Hebp1-202	ENSMUST00000204000.1	379	No protein	lncRNA	-	-	TSL:2
Hebp1-203	ENSMUST00000204730.1	215	No protein	lncRNA	-	-	TSL:3

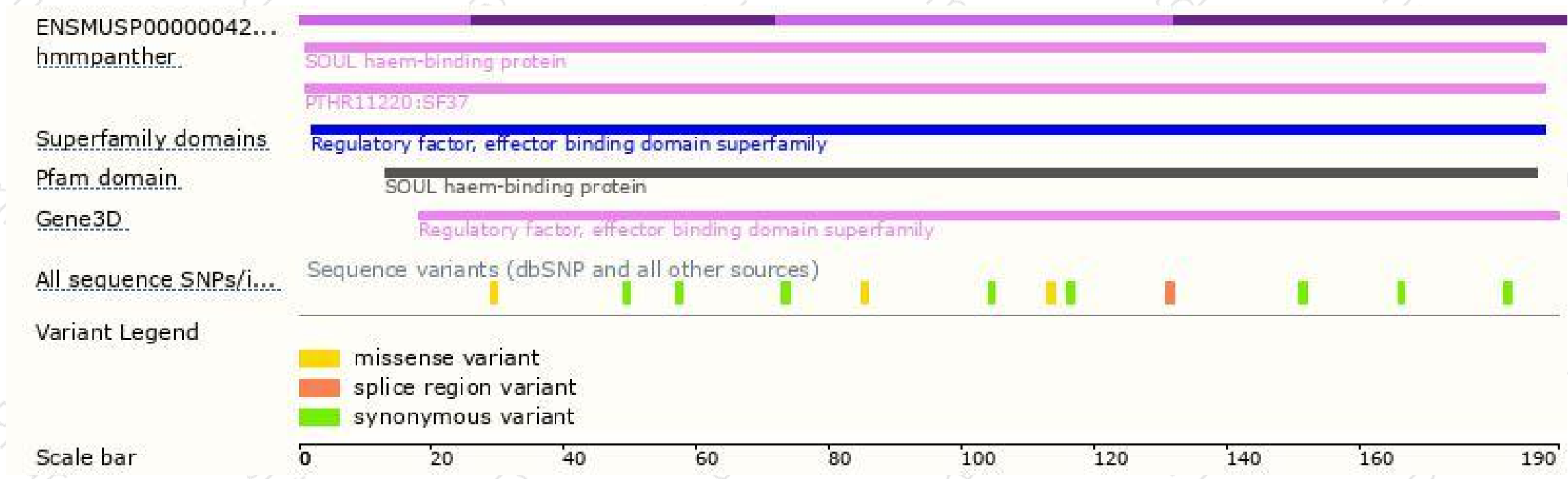
The strategy is based on the design of *Hebp1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

