

Bptf Cas9-CKO Strategy

Designer:

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Project Overview

Project Name

Bptf

Project type

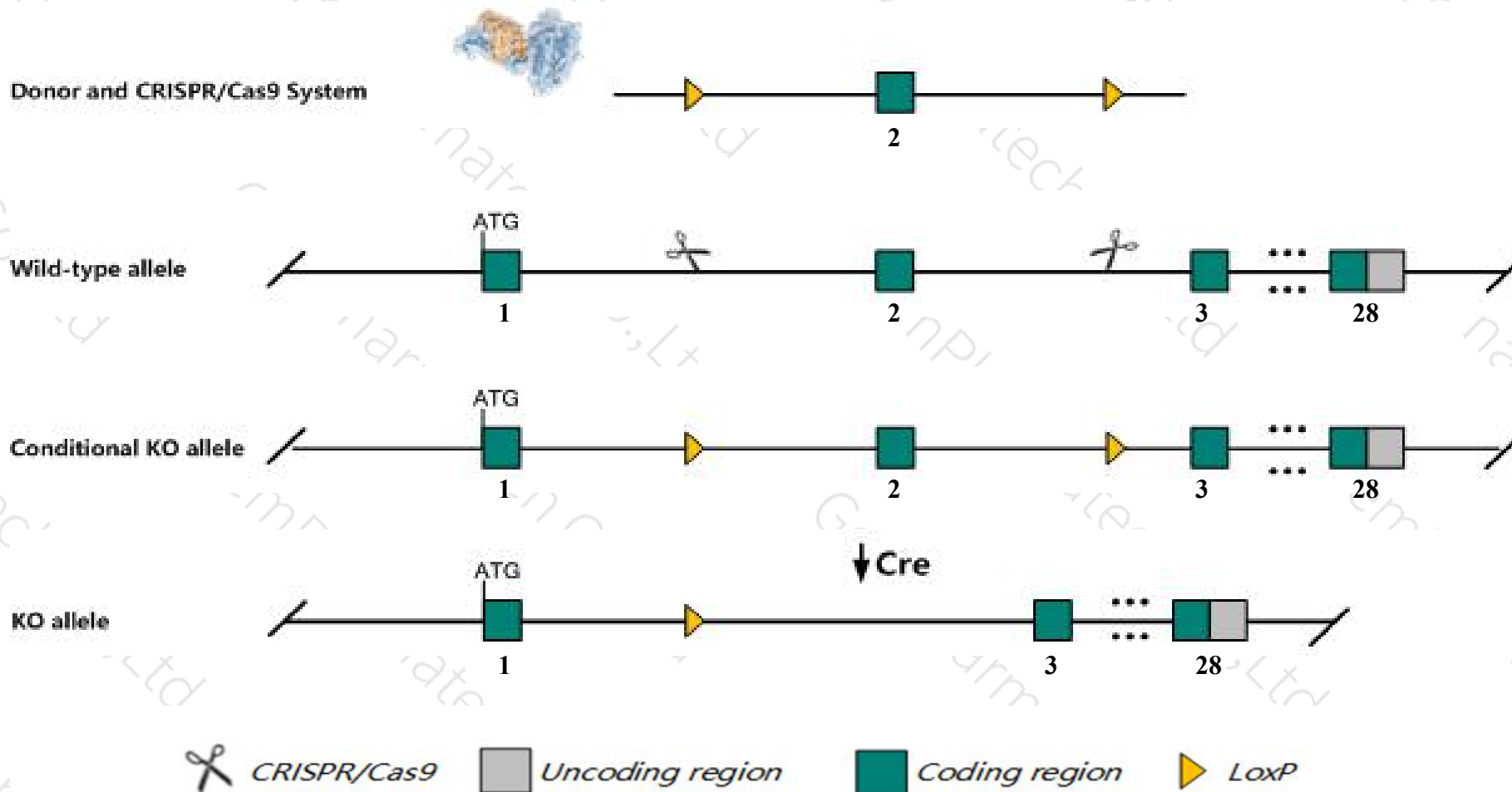
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



Technical routes

- The *Bptf* gene has 8 transcripts. According to the structure of *Bptf* gene, exon2 of *Bptf-201* (ENSMUST00000057892.14) transcript is recommended as the knockout region. The region contains 823bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Bptf* 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.

- According to the existing MGI data, Mice homozygous for a null mutation display embryonic lethality during organogenesis with embryonic growth arrest around early gastrulation and a greatly reduced ectoplacental cone.
- The *Bptf* gene is located on the Chr11. 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)

Bptf bromodomain PHD finger transcription factor [Mus musculus (house mouse)]

Gene ID: 207165, updated on 17-Feb-2019

Summary



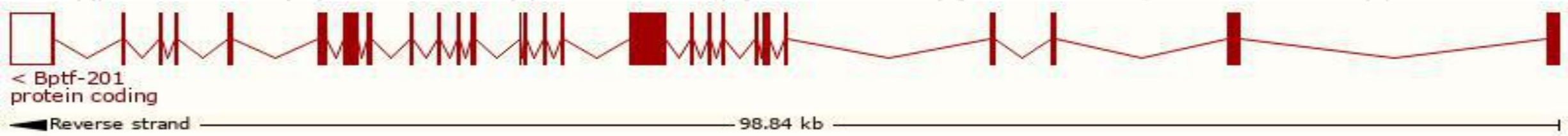
Official Symbol	Bptf provided by MGI
Official Full Name	bromodomain PHD finger transcription factor provided by MGI
Primary source	MGI:MGI:2444008
See related	Ensembl:ENSMUSG00000040481
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9430093H17Rik, Falz
Expression	Ubiquitous expression in thymus adult (RPKM 10.4), CNS E11.5 (RPKM 10.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

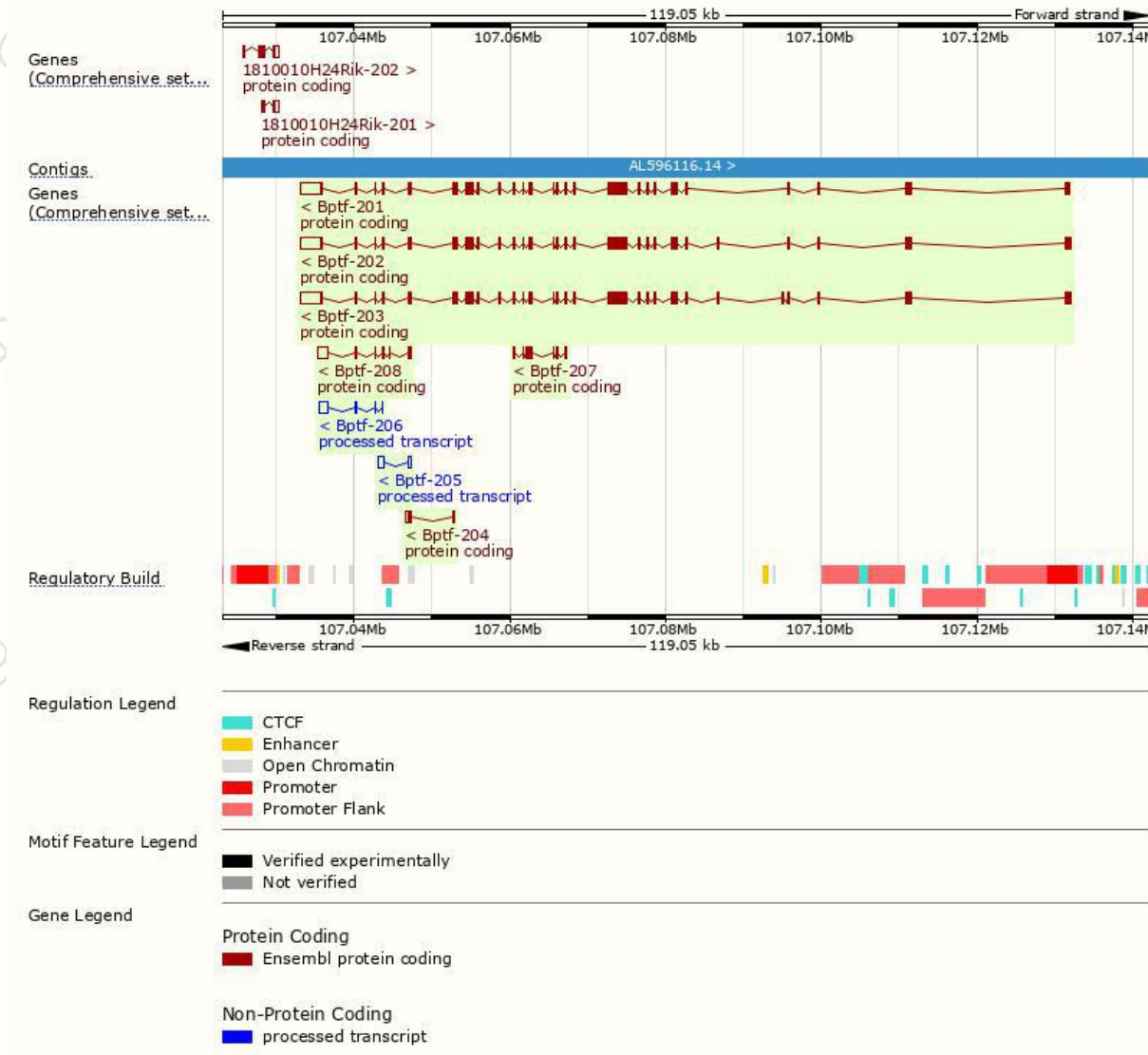
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Bptf-201	ENSMUST00000057892.14	11488	2921aa	Protein coding	CCDS48964	E9Q6A7	TSL:5 GENCODE basic APPRIS P2
Bptf-203	ENSMUST00000106763.7	12036	3036aa	Protein coding	-	A2A654	TSL:5 GENCODE basic APPRIS ALT2
Bptf-202	ENSMUST00000106762.7	11847	2973aa	Protein coding	-	A2A655	TSL:5 GENCODE basic APPRIS ALT2
Bptf-208	ENSMUST00000208369.1	2177	329aa	Protein coding	-	A0A140LHY5	CDS 5' incomplete TSL:1
Bptf-207	ENSMUST00000149486.1	867	289aa	Protein coding	-	A2A653	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:5
Bptf-204	ENSMUST00000133317.1	780	158aa	Protein coding	-	A2A652	CDS 5' incomplete TSL:2
Bptf-206	ENSMUST00000147816.1	1433	No protein	Processed transcript	-	-	TSL:2
Bptf-205	ENSMUST00000138443.1	1061	No protein	Processed transcript	-	-	TSL:2

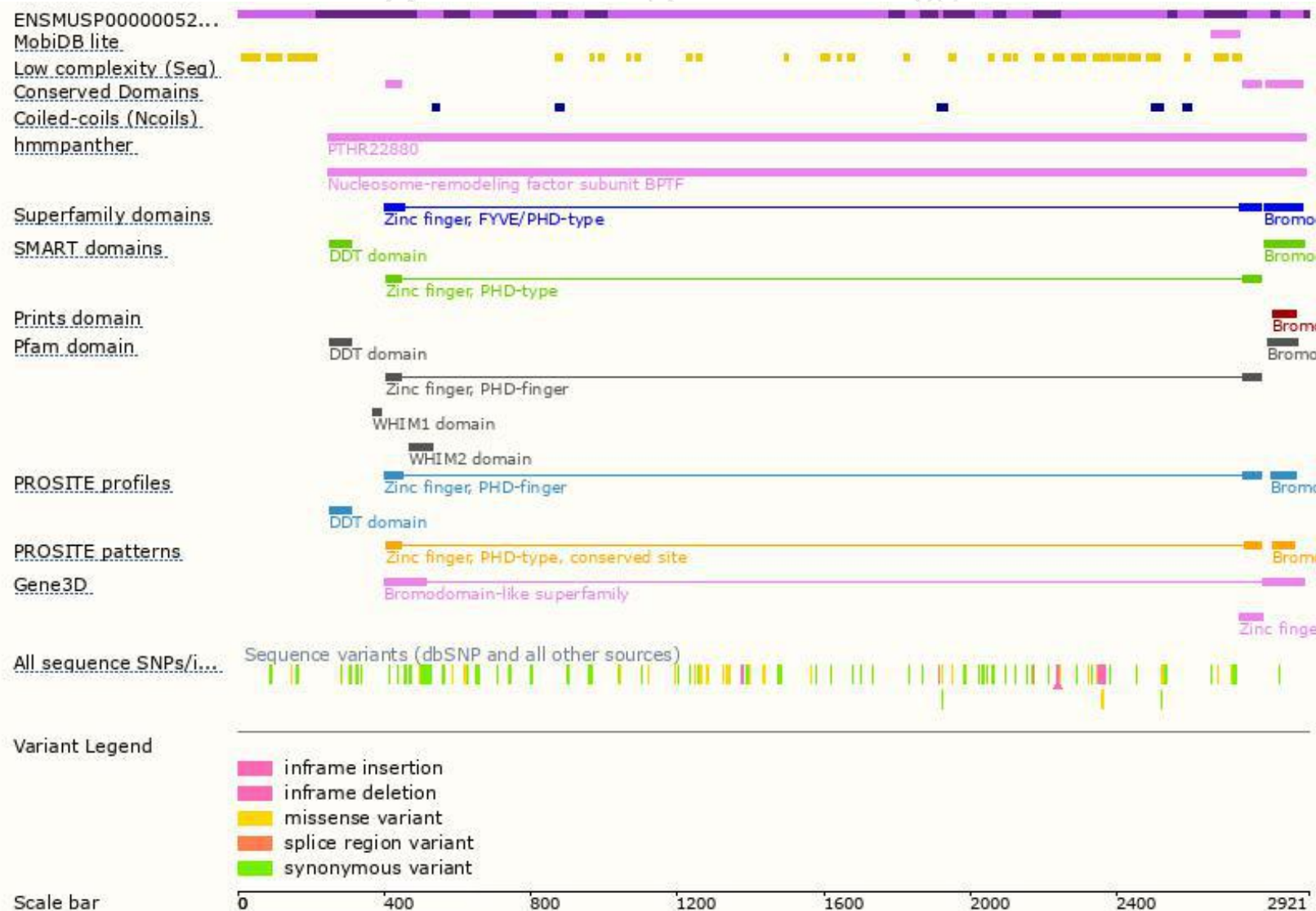
The strategy is based on the design of *Bptf-201* transcript,The transcription is shown below



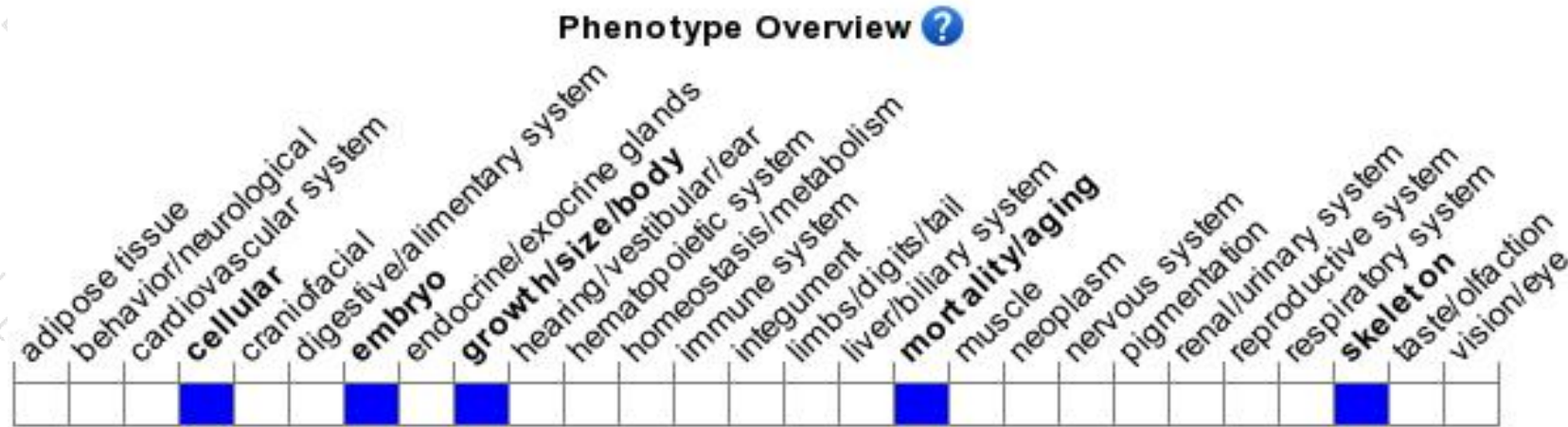
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a null mutation display embryonic lethality during organogenesis with embryonic growth arrest around early gastrulation and a greatly reduced ectoplacental cone.

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

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