Ehf Cas9-CKO Strategy

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Project Overview

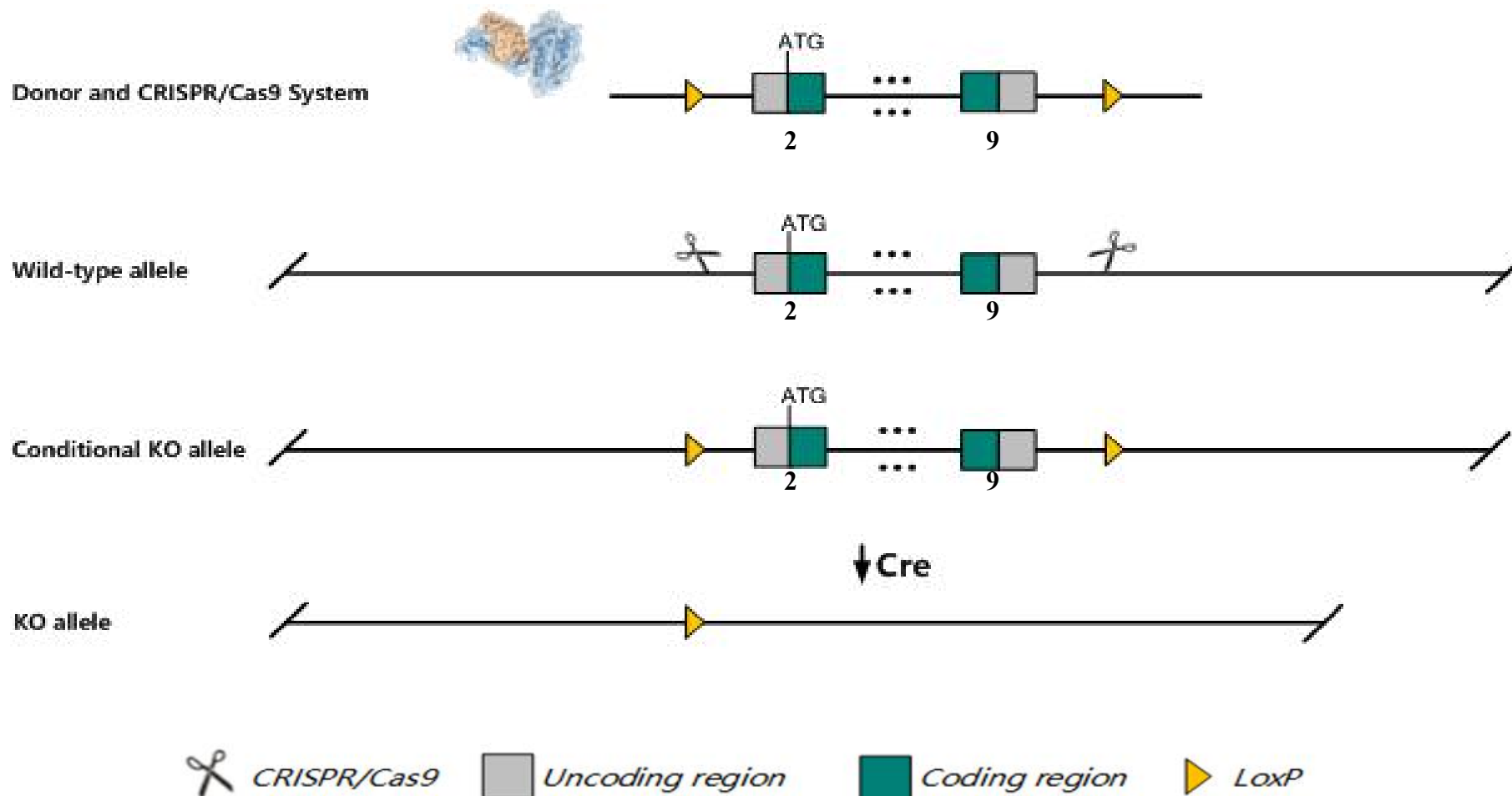|	
Project Name	*Ehf*
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

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

Technical routes

The *Ehf* gene has 8 transcripts. According to the structure of *Ehf* gene, exon2-exon9 of *Ehf-201* (ENSMUST00000090475.9) transcript is recommended as the knockout region.The region contains all of the coding sequence.Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Ehf* 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.

The *Ehf* 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.

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

Ehf ets homologous factor [Mus musculus (house mouse)]

Gene ID: 13661, updated on 31-Jan-2019

▲ Summary

Official Symbol	Ehf provided by MGI
Official Full Name	ets homologous factor provided by MGI
Primary source	MGI:MGI:1270840
See related	Ensembl:ENSMUSG00000012350
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	9030625L19Rik, AU019492
Expression	Biased expression in colon adult (RPKM 16.7), bladder adult (RPKM 11.7) and 10 other tissuesSee more
Orthologs	human all

Transcript information Ensembl

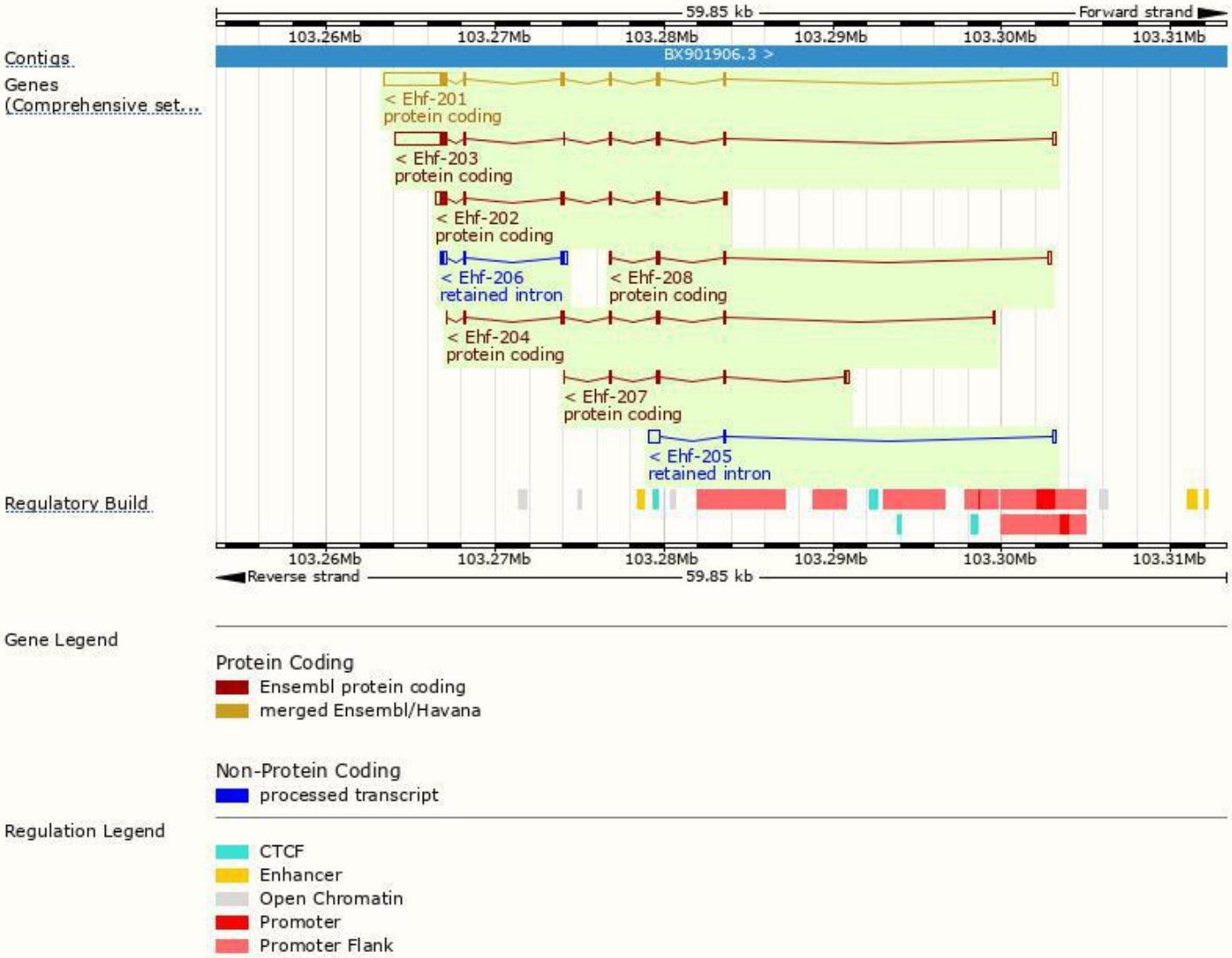The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ehf-201	ENSMUST00000090475.9	4469	300aa	Protein coding	CCDS16475	O70273	TSL:1 GENCODE basic APPRIS P1
Ehf-202	ENSMUST00000111174.7	1307	300aa	Protein coding	CCDS16475	O70273	TSL:1 GENCODE basic APPRIS P1
Ehf-203	ENSMUST00000111176.8	3696	277aa	Protein coding	-	A2BIB5	TSL:5 GENCODE basic
Ehf-204	ENSMUST00000125788.7	748	242aa	Protein coding	-	B0S7M9	CDS 3' incomplete TSL:3
Ehf-207	ENSMUST00000140503.7	656	181aa	Protein coding	-	A2BIB7	CDS 3' incomplete TSL:5
Ehf-208	ENSMUST00000151265.1	530	127aa	Protein coding	-	A2BIB6	CDS 3' incomplete TSL:3
Ehf-205	ENSMUST00000128546.1	873	No protein	Retained intron	-	-	TSL:2
Ehf-206	ENSMUST00000137774.1	690	No protein	Retained intron	-	-	TSL:3

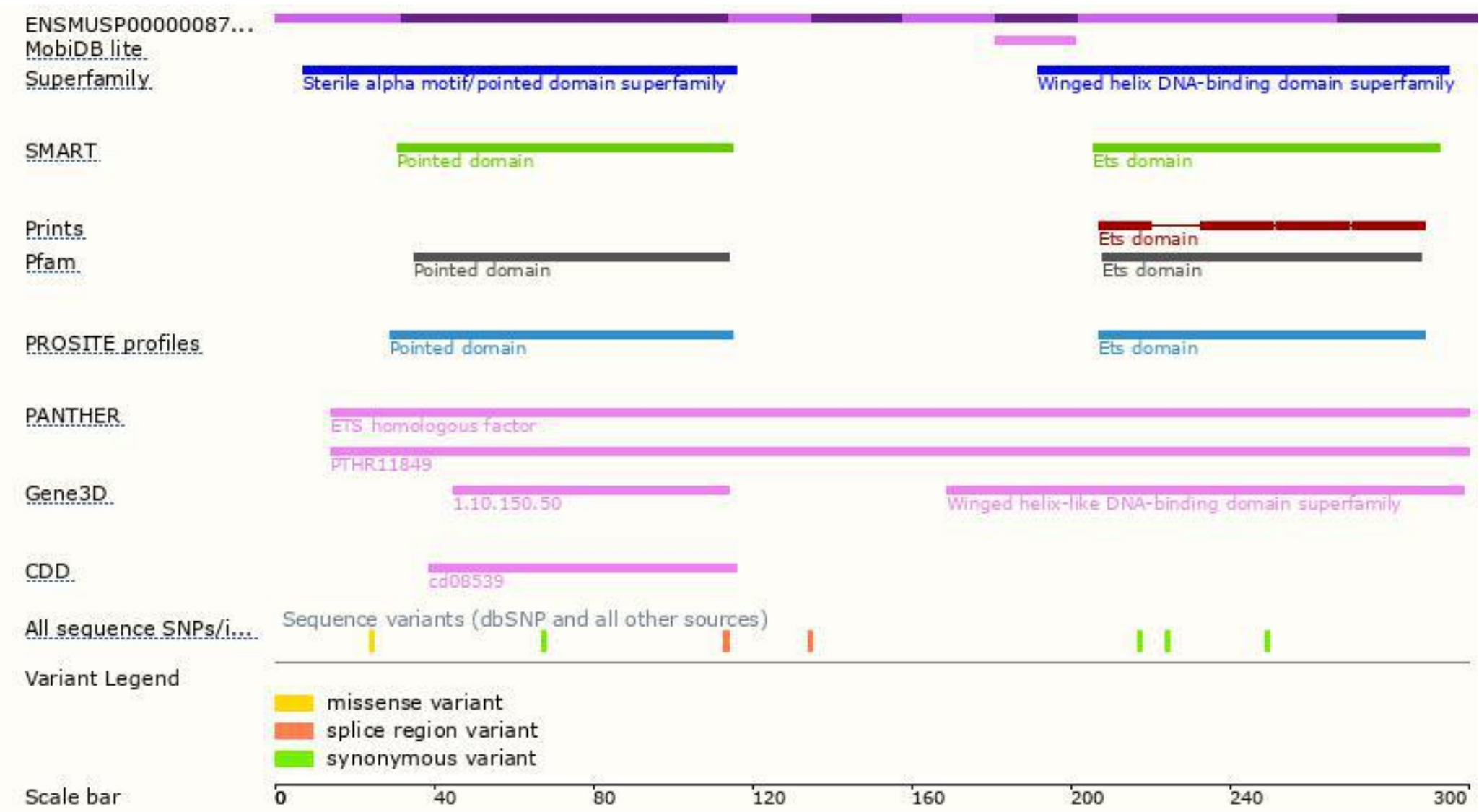The strategy is based on the design of *Ehf-201* transcript,The transcription is shown below

< Ehf-201
protein coding

◄ Reverse strand

39.85 kb
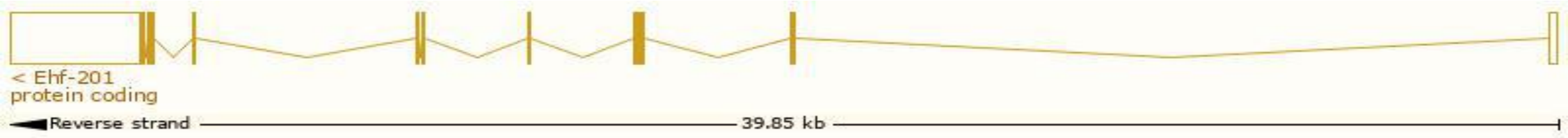
Genomic location distribution

Protein domain