

Fgf12 Cas9-CKO Strategy

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Project Overview

Project Name

Fgf12

Project type

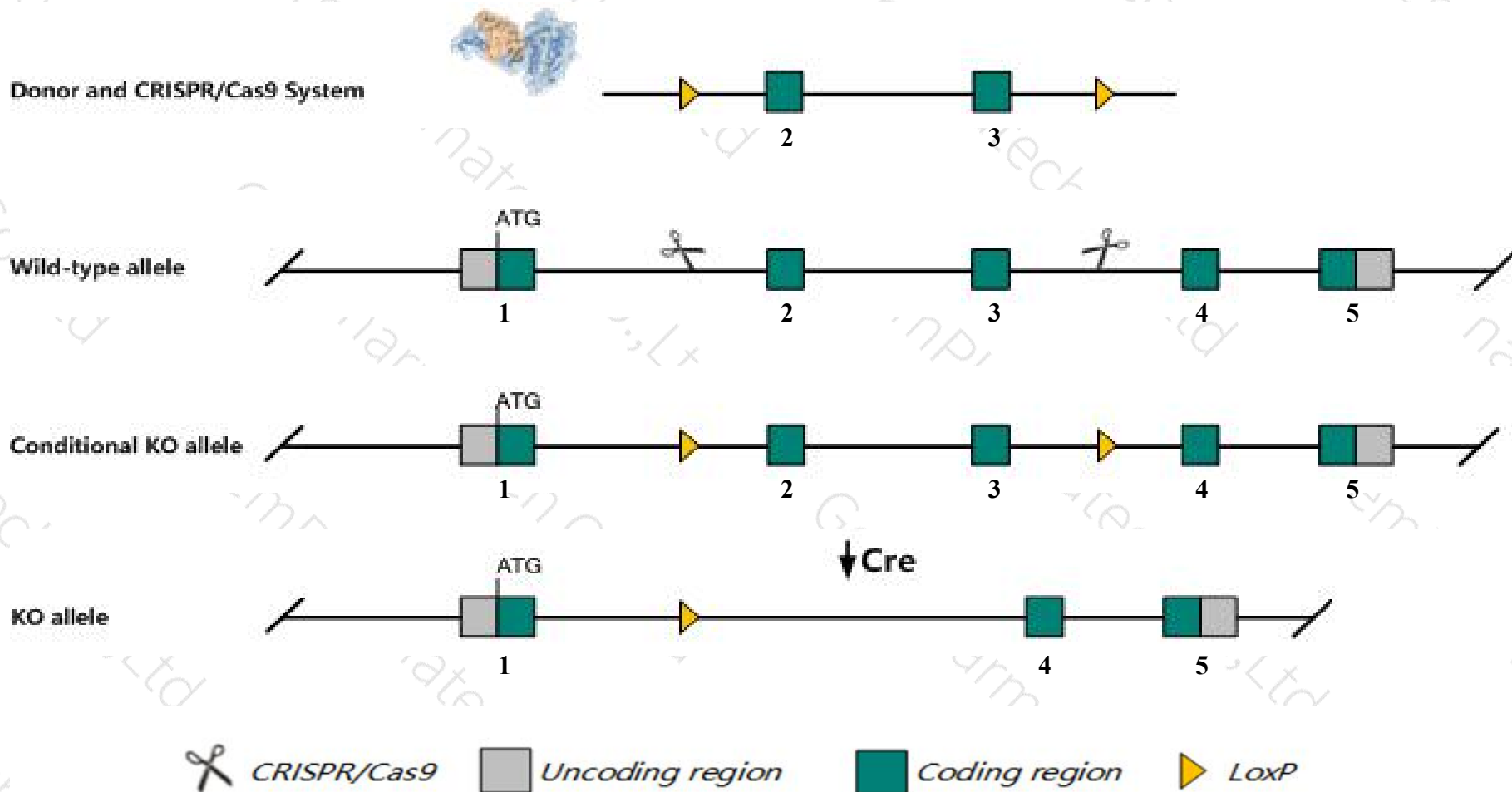
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fgf12* gene. The schematic diagram is as follows:



- The *Fgf12* gene has 6 transcripts. According to the structure of *Fgf12* gene, exon2-exon3 of *Fgf12-201* (ENSMUST00000100024.2) transcript is recommended as the knockout region. The region contains 215bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fgf12* 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 knock-out allele are viable, fertile, and do not exhibit any significant behavioral or neurological phenotypes.
- The *Fgf12* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Fgf12 fibroblast growth factor 12 [Mus musculus (house mouse)]

Gene ID: 14167, updated on 31-Jan-2019

Summary



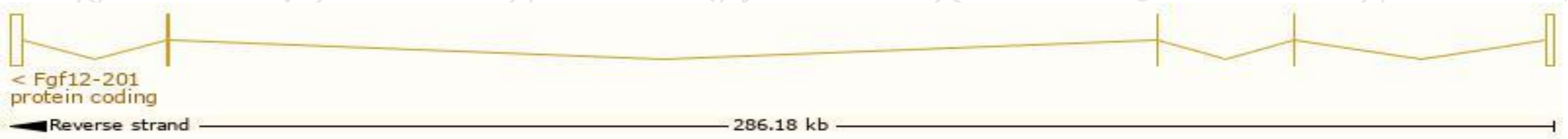
Official Symbol	Fgf12 provided by MGI
Official Full Name	fibroblast growth factor 12 provided by MGI
Primary source	MGI:MGI:109183
See related	Ensembl:ENSMUSG00000022523
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AV114868, B230343J05Rik, FGF-12, FHF-1, Fhf1
Expression	Biased expression in frontal lobe adult (RPKM 10.5), cortex adult (RPKM 7.5) and 7 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

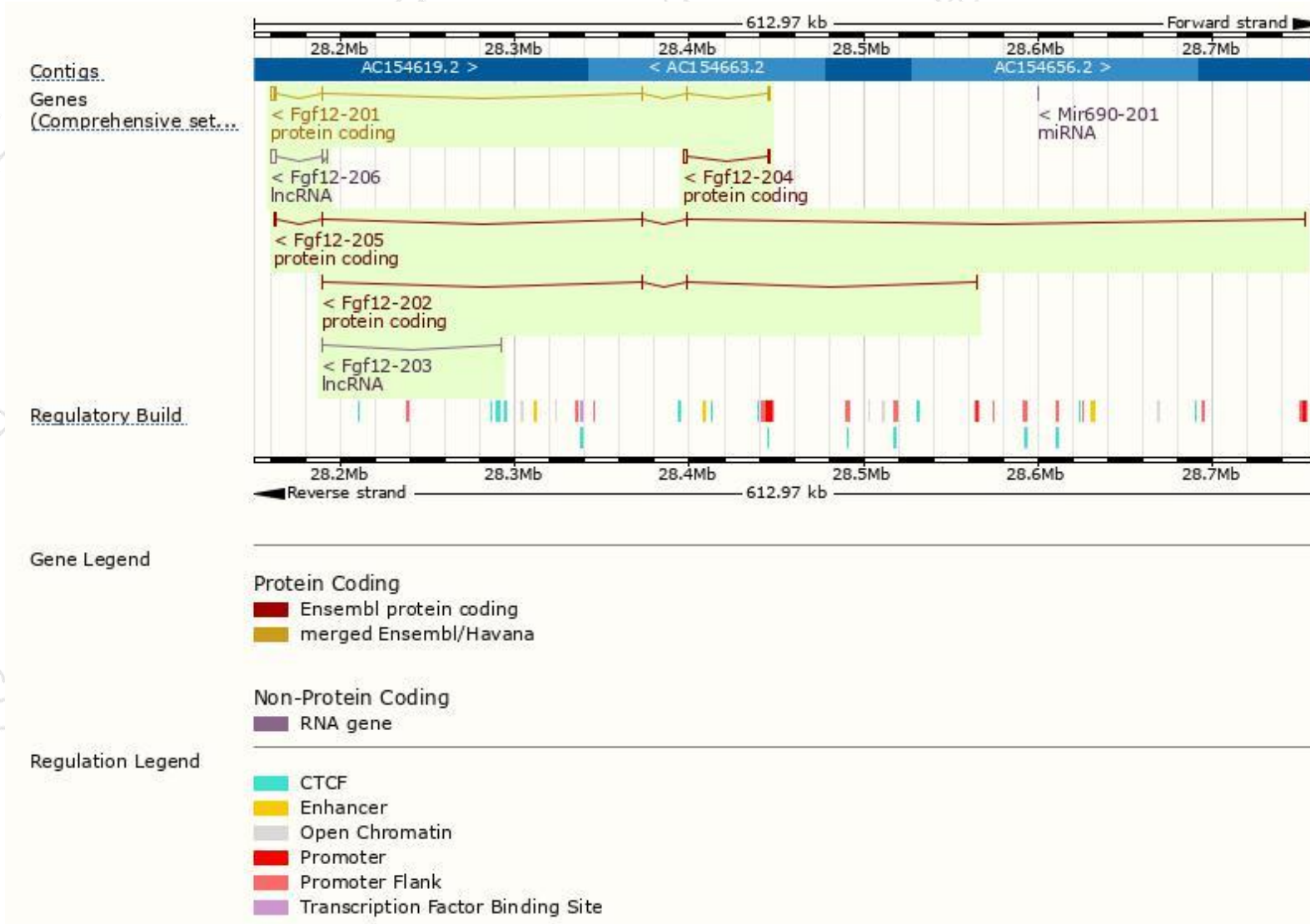
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fgf12-201	ENSMUST00000100024.2	4137	243aa	Protein coding	CCDS28092	P61329	TSL:1 GENCODE basic APPRIS P1
Fgf12-204	ENSMUST00000231717.1	2527	115aa	Protein coding	-	A0A338P752	GENCODE basic
Fgf12-205	ENSMUST00000232352.1	831	181aa	Protein coding	-	P61329	GENCODE basic
Fgf12-202	ENSMUST00000231399.1	801	171aa	Protein coding	-	A0A338P764	CDS 3' incomplete
Fgf12-206	ENSMUST00000232632.1	2689	No protein	lncRNA	-	-	
Fgf12-203	ENSMUST00000231429.1	244	No protein	lncRNA	-	-	

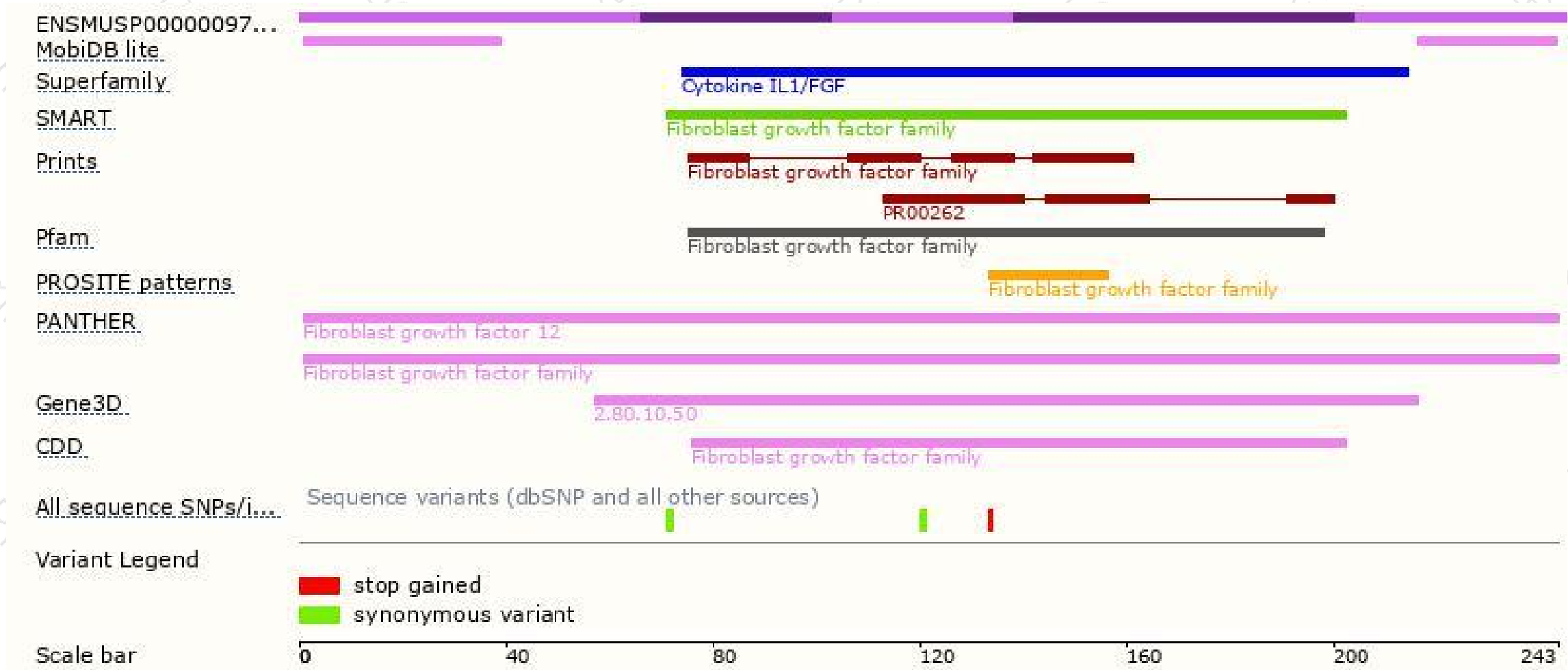
The strategy is based on the design of *Fgf12-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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