

***Klhl22* Cas9-CKO Strategy**

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Project Overview

Project Name

Klhl22

Project type

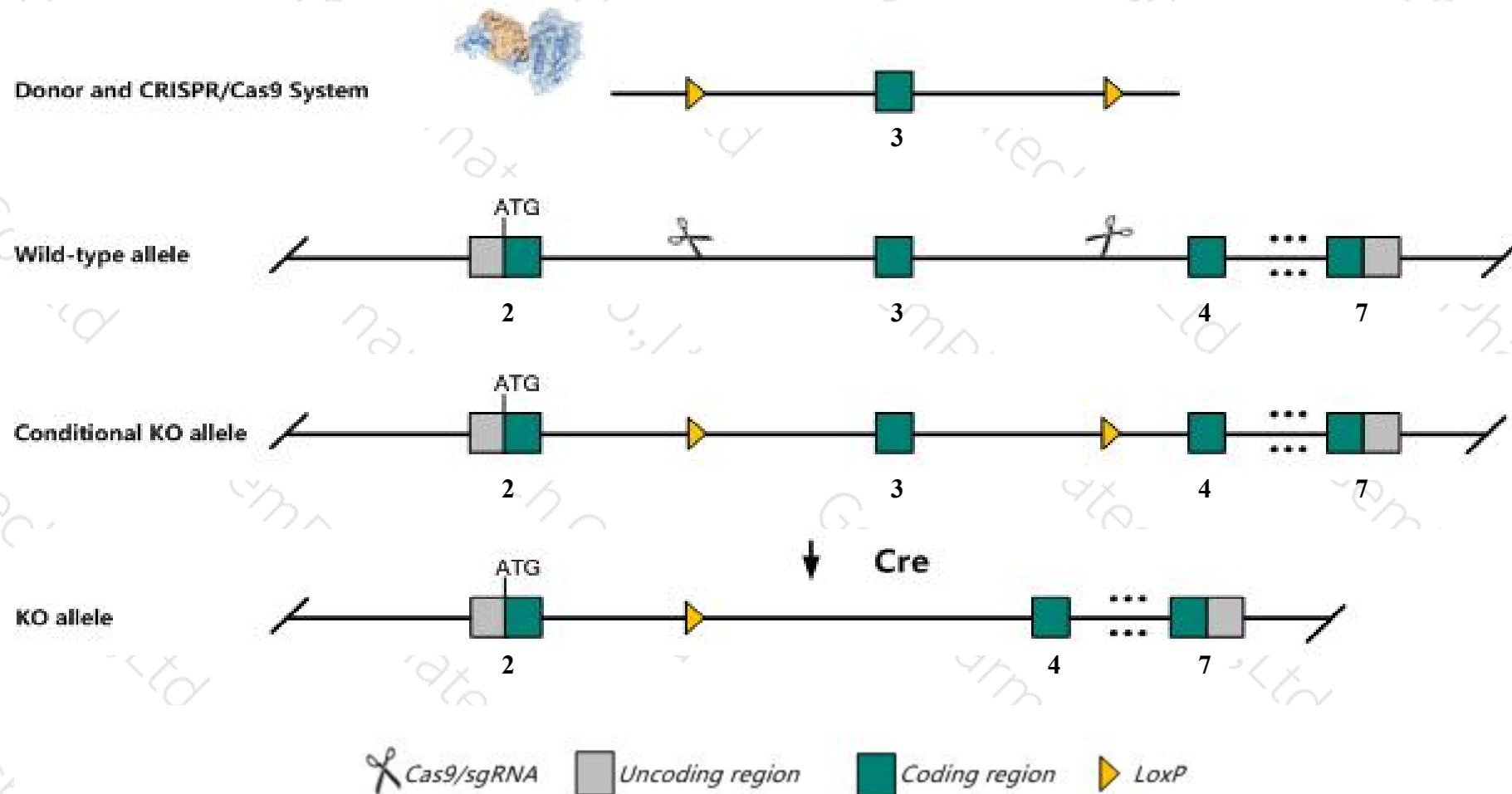
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Klhl22* gene. The schematic diagram is as follows:



Technical routes

- The *Klhl22* gene has 7 transcripts. According to the structure of *Klhl22* gene, exon3 of *Klhl22*-201(ENSMUST00000120488.2) transcript is recommended as the knockout region. The region contains 166bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Klhl22* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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 effect of transcripts 203,204,205 is unknown.
- The *Klhl22* 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)

Klhl22 kelch-like 22 [Mus musculus (house mouse)]

Gene ID: 224023, updated on 20-Mar-2020

Summary



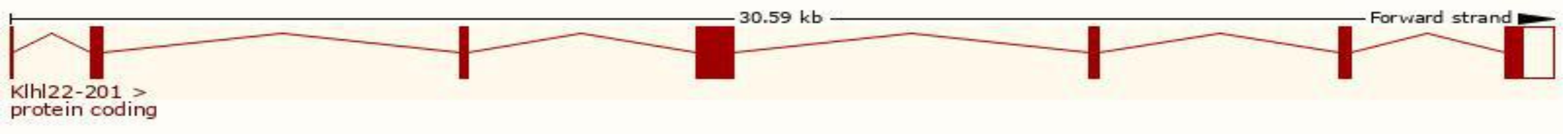
Official Symbol	Klhl22 provided by MGI
Official Full Name	kelch-like 22 provided by MGI
Primary source	MGI:MGI:1337995
See related	Ensembl:ENSMUSG00000022750
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610318I18Rik, Kelchl
Expression	Ubiquitous expression in placenta adult (RPKM 28.6), ovary adult (RPKM 22.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

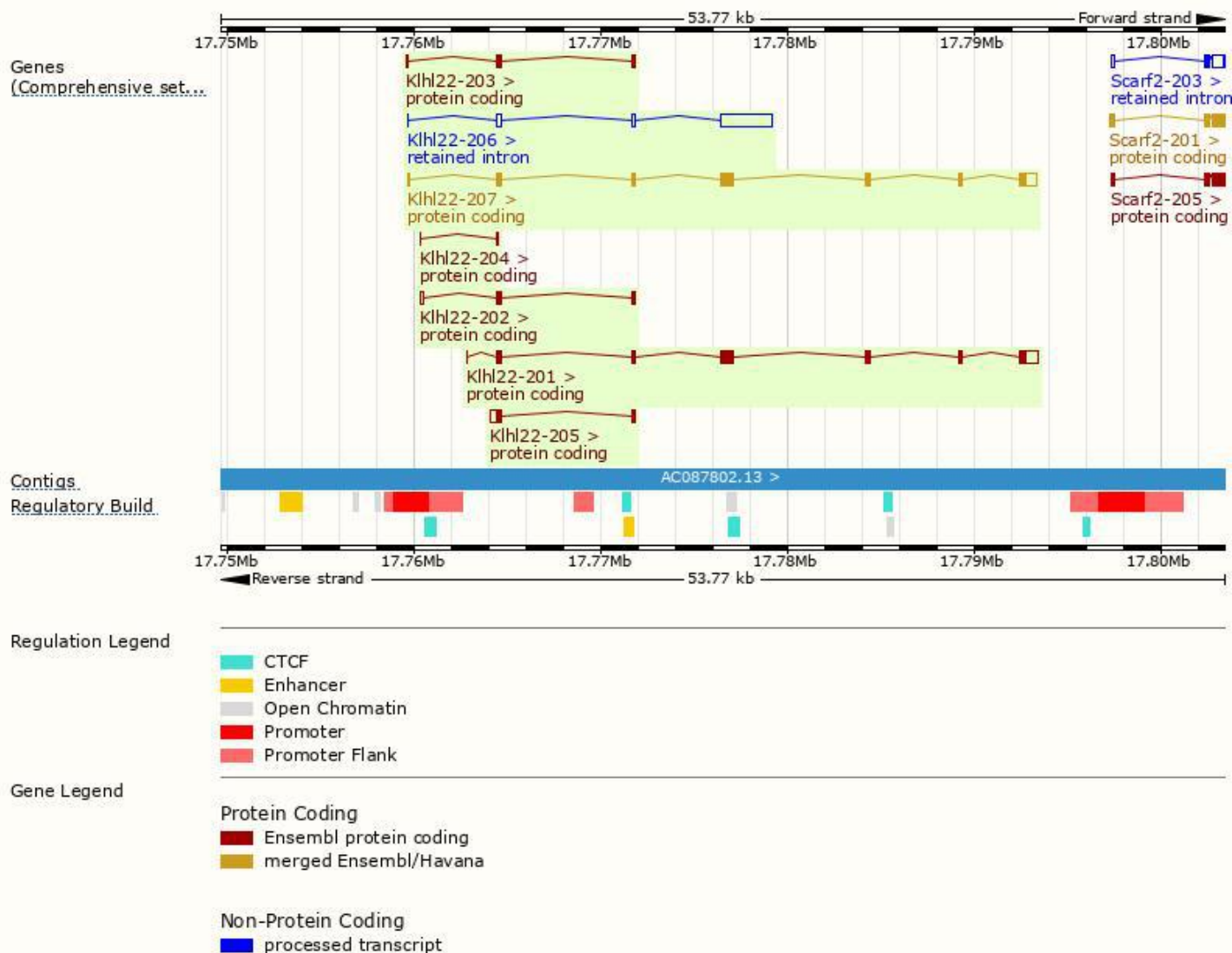
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Klhl22-201	ENSMUST00000120488.2	2596	634aa	Protein coding	CCDS49783	Q99JN2	TSL:1 GENCODE basic APPRIS P1
Klhl22-207	ENSMUST00000165790.8	2544	634aa	Protein coding	CCDS49783	Q99JN2	TSL:1 GENCODE basic APPRIS P1
Klhl22-205	ENSMUST00000140306.8	695	122aa	Protein coding	-	D3Z7N9	CDS 3' incomplete TSL:2
Klhl22-202	ENSMUST00000126600.7	515	114aa	Protein coding	-	D3YZH5	CDS 3' incomplete TSL:3
Klhl22-203	ENSMUST00000129199.7	464	117aa	Protein coding	-	D3Z2R6	CDS 3' incomplete TSL:2
Klhl22-204	ENSMUST00000129299.2	186	37aa	Protein coding	-	A0A338P748	CDS 3' incomplete TSL:2
Klhl22-206	ENSMUST00000144116.1	3266	No protein	Retained intron	-	-	TSL:1

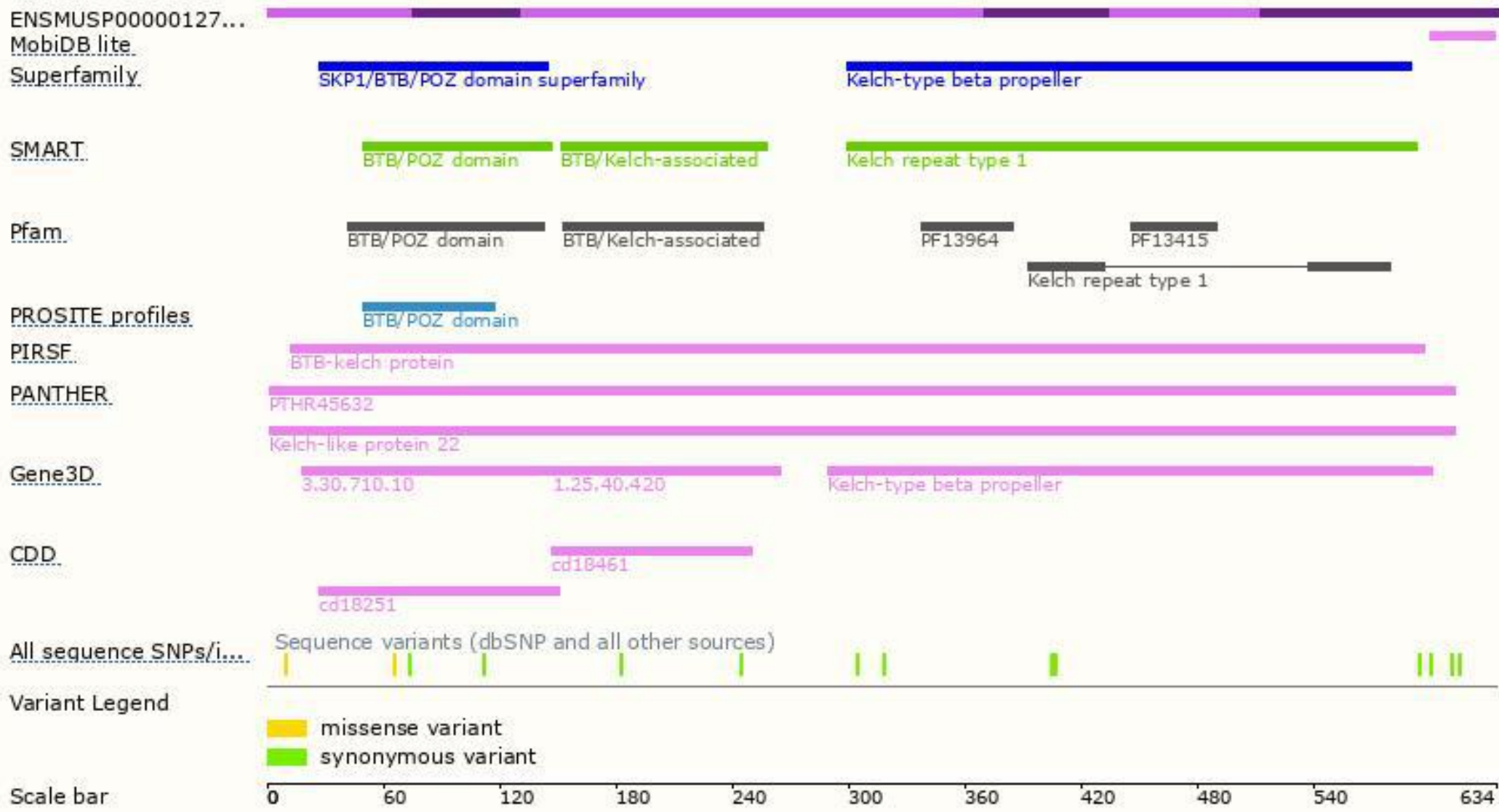
The strategy is based on the design of *Klhl22-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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