Klhl15 Cas9-CKO Strategy

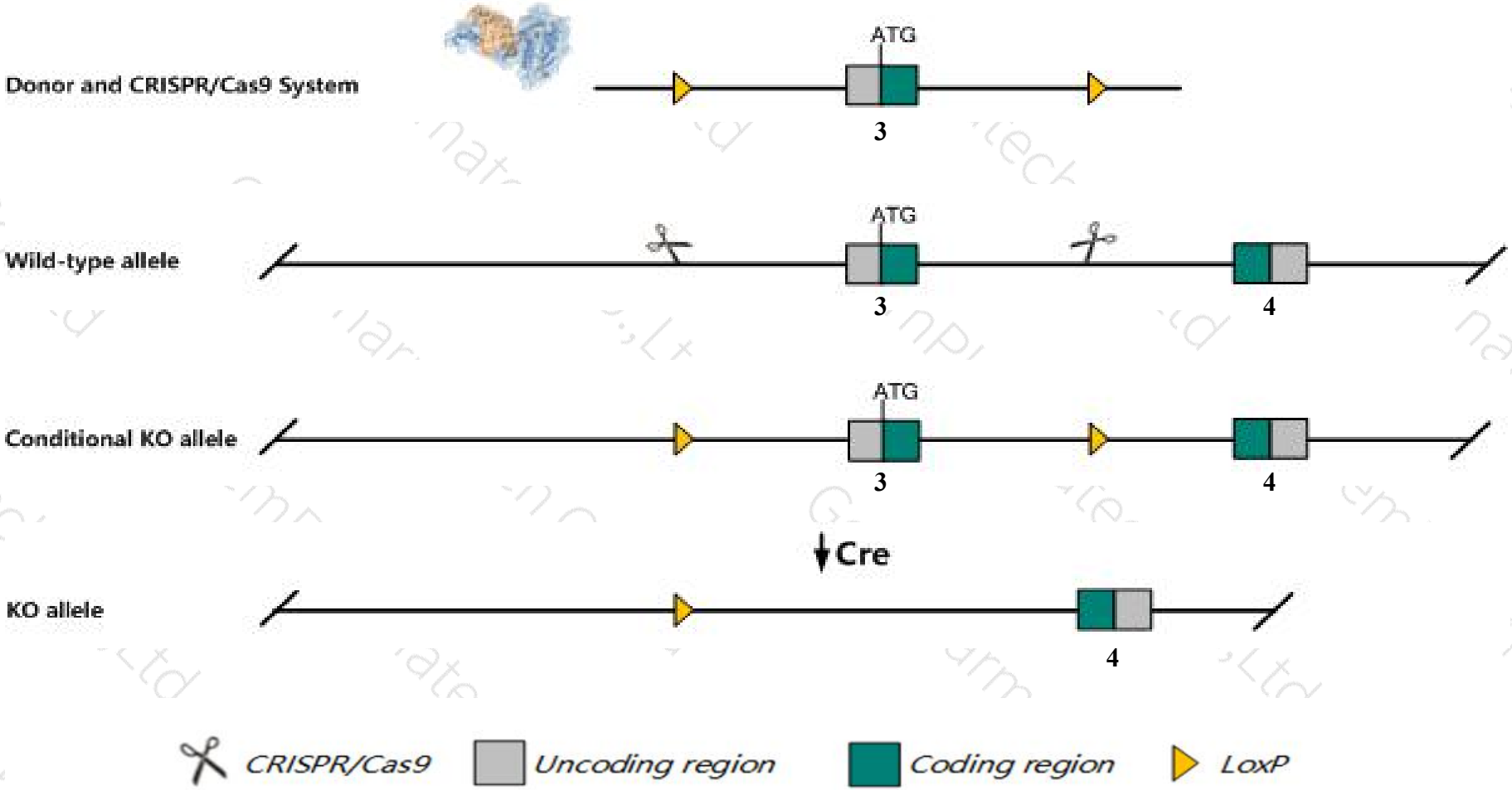
Designer: JiaYu

Project Overview

Project Name	***Klhl15***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Klhl15* gene. The schematic diagram is as follows:



Technical routes

- The *Klhl15* gene has 9 transcripts. According to the structure of *Klhl15* gene, exon3 of *Klhl15-204* (ENSMUST00000113915.1) transcript is recommended as the knockout region.The region contains start codon ATG. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Klhl15* 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 *Klhl15* gene is located on the ChrX. 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）

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Klhl15 kelch-like 15 [Mus musculus (house mouse)]

Gene ID: 236904, updated on 31-Jan-2019

Summary

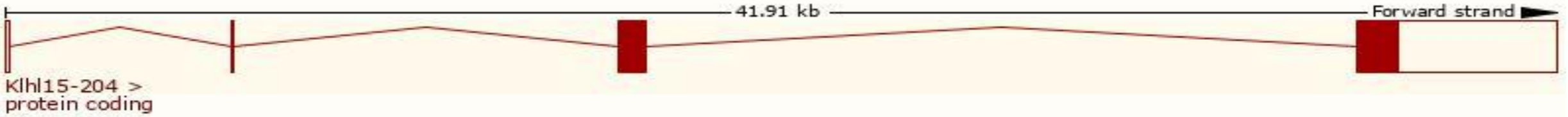
Official Symbol	Klhl15 provided by MGI
Official Full Name	kelch-like 15 provided by MGI
Primary source	MGI:MGI:1923400
See related	Ensembl:ENSMUSG00000043929
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	6330500C13Rik
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information（Ensembl）

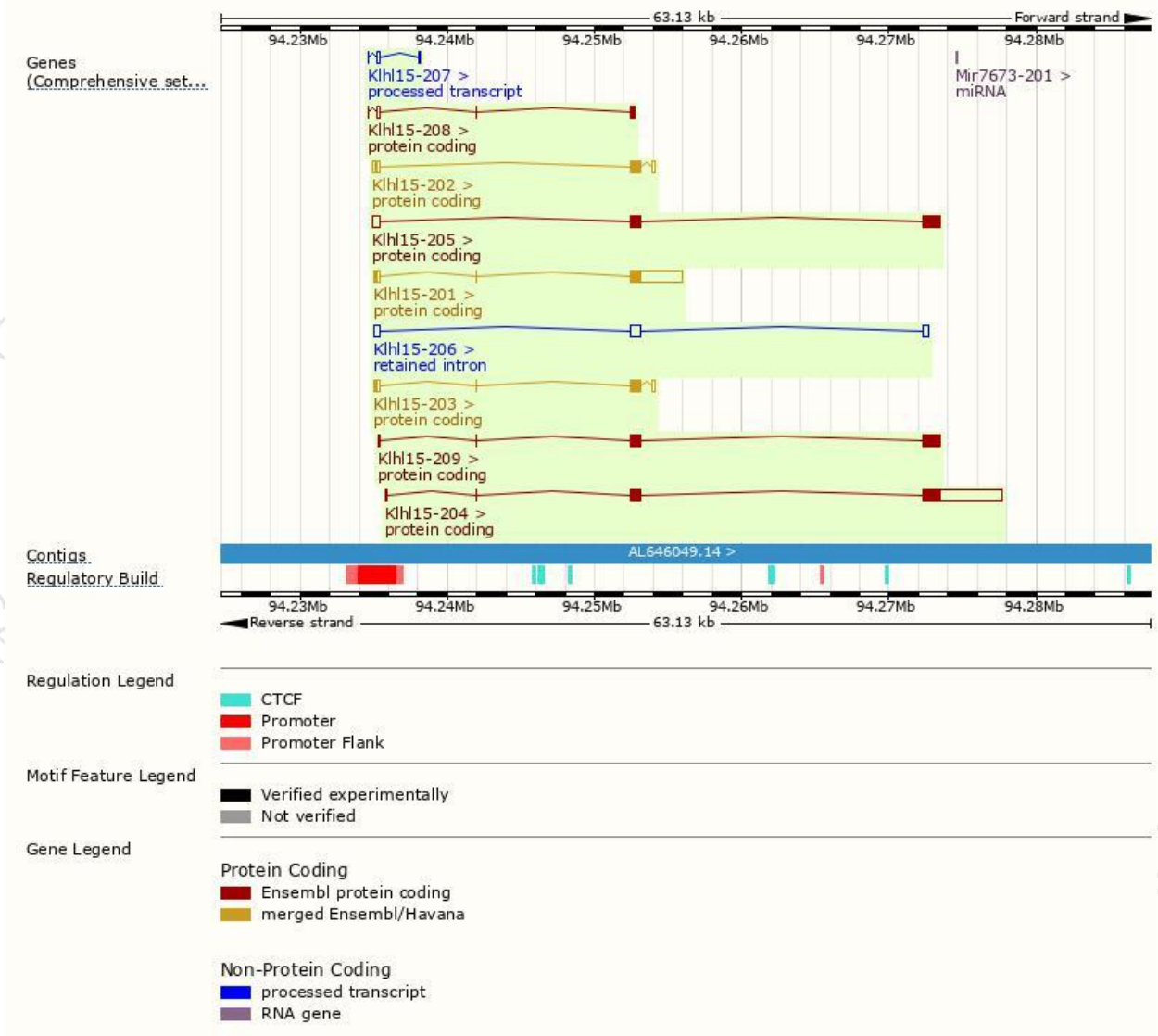
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Klhl15-204	ENSMUST00000113915.1	6241	604aa	Protein coding	CCDS30278	A2AAX3	TSL:1 GENCODE basic APPRIS P1
Klhl15-201	ENSMUST00000096369.9	3944	248aa	Protein coding	CCDS30279	A2AAX3	TSL:1 GENCODE basic
Klhl15-205	ENSMUST00000113916.9	2363	604aa	Protein coding	CCDS30278	A2AAX3	TSL:1 GENCODE basic APPRIS P1
Klhl15-209	ENSMUST00000170594.7	2027	604aa	Protein coding	CCDS30278	A2AAX3	TSL:1 GENCODE basic APPRIS P1
Klhl15-202	ENSMUST00000113908.7	1235	237aa	Protein coding	CCDS41062	A2AAX3	TSL:1 GENCODE basic
Klhl15-203	ENSMUST00000113911.8	1227	237aa	Protein coding	CCDS41062	A2AAX3	TSL:1 GENCODE basic
Klhl15-208	ENSMUST00000153900.7	627	106aa	Protein coding	-	A2AAX0	CDS 3' incomplete TSL:3
Klhl15-207	ENSMUST00000150999.7	364	No protein	Processed transcript	-	-	TSL:3
Klhl15-206	ENSMUST00000142691.1	1532	No protein	Retained intron	-	-	TSL:1

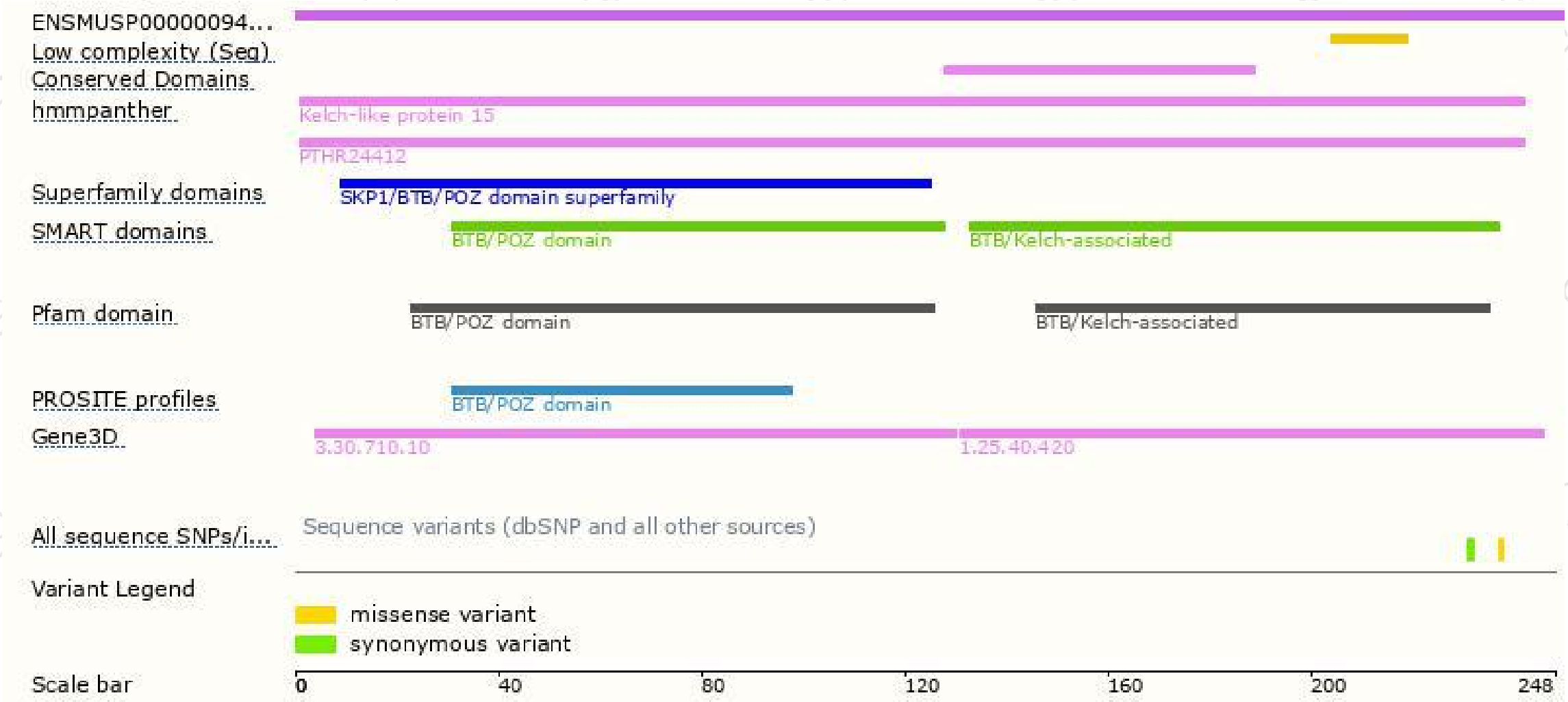
The strategy is based on the design of *Klhl15-204* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

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