

Klhl7 Cas9-KO Strategy

Designer:

Daohua Xu

Design Date:

2019-8-14

Project Overview

Project Name

Klhl7

Project type

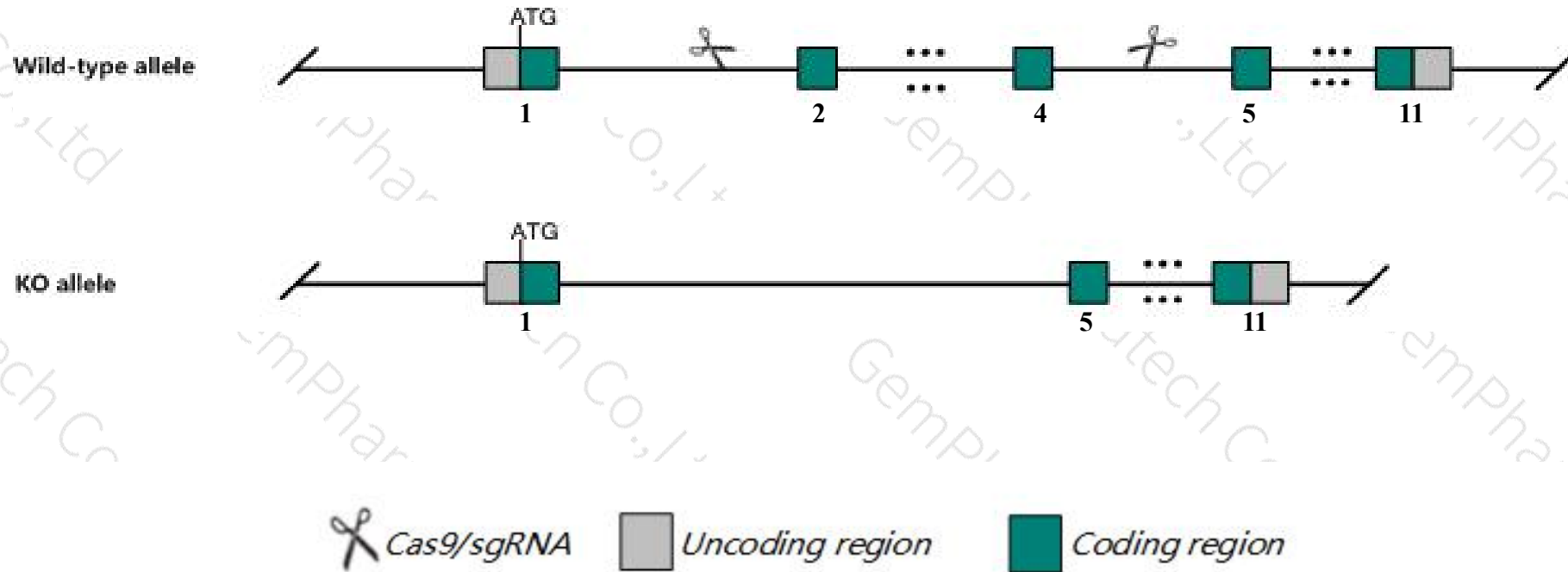
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Klhl7* gene. The schematic diagram is as follows:



- The *Klhl7* gene has 4 transcripts. According to the structure of *Klhl7* gene, exon2-exon4 of *Klhl7-201* (ENSMUST00000030841.9) transcript is recommended as the knockout region. The region contains 322bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Klhl7* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- The *Klhl7* gene is located on the Chr5. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Klhl7 kelch-like 7 [Mus musculus (house mouse)]

Gene ID: 52323, updated on 31-Jan-2019

Summary



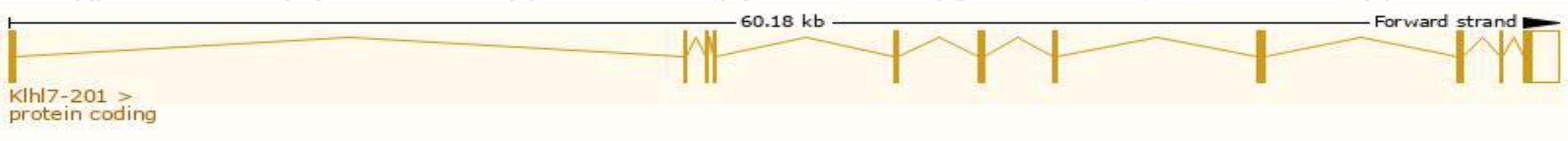
Official Symbol	Klhl7 provided by MGI
Official Full Name	kelch-like 7 provided by MGI
Primary source	MGI:MGI:1196453
See related	Ensembl:ENSMUSG00000028986
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2700038B03Rik, D5Erd363e, SBBI26
Expression	Broad expression in CNS E18 (RPKM 23.6), CNS E14 (RPKM 20.3) and 16 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

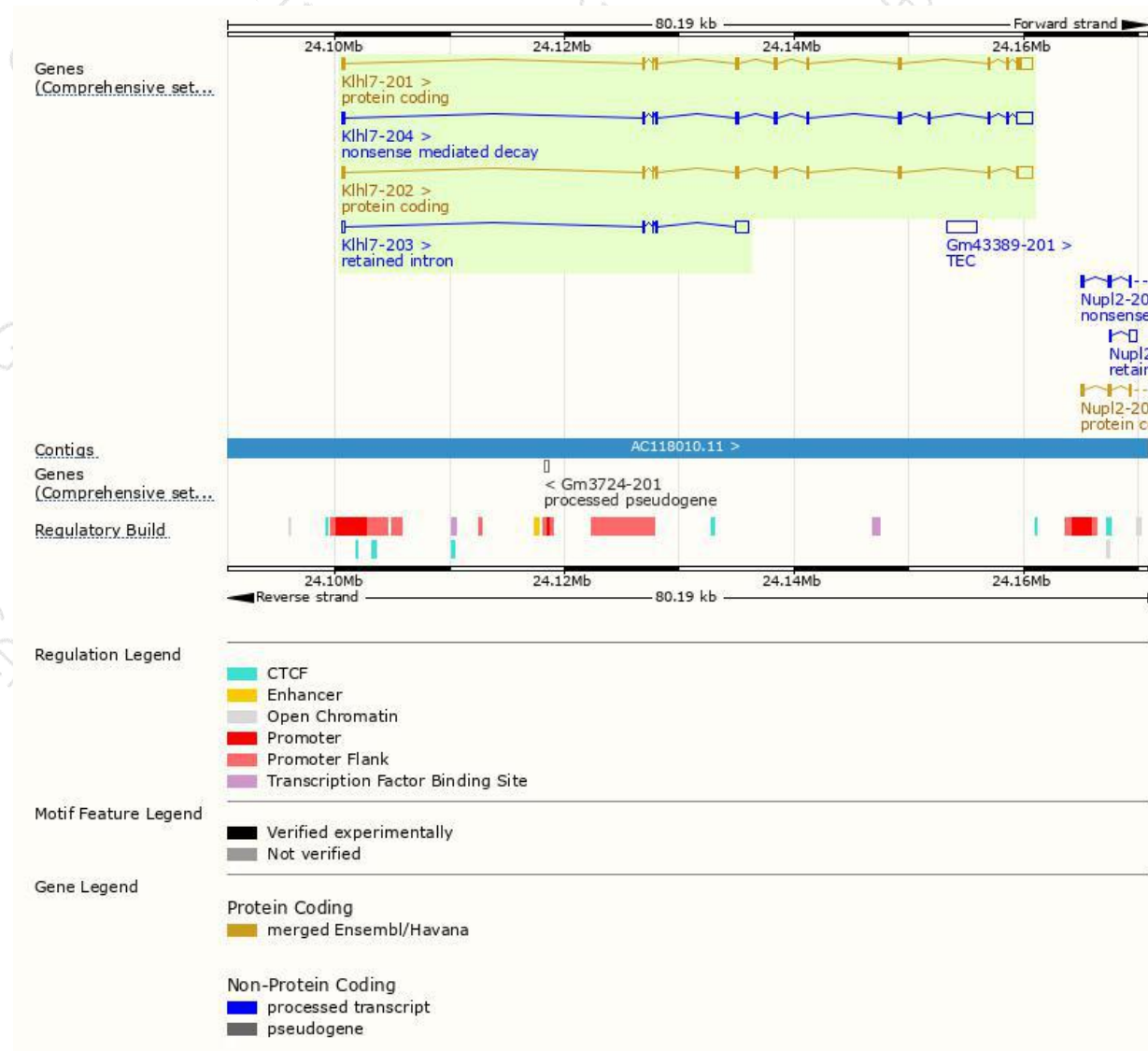
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Klhl7-201	ENSMUST00000030841.9	2966	586aa	Protein coding	CCDS19114	Q8BUL5	TSL:1 GENCODE basic APPRIS P1
Klhl7-202	ENSMUST00000163409.4	2857	473aa	Protein coding	CCDS51432	G3UW75	TSL:2 GENCODE basic
Klhl7-204	ENSMUST00000200116.4	3086	422aa	Nonsense mediated decay	-	A0A0G2JF30	TSL:1
Klhl7-203	ENSMUST00000199530.1	1589	No protein	Retained intron	-	-	TSL:1

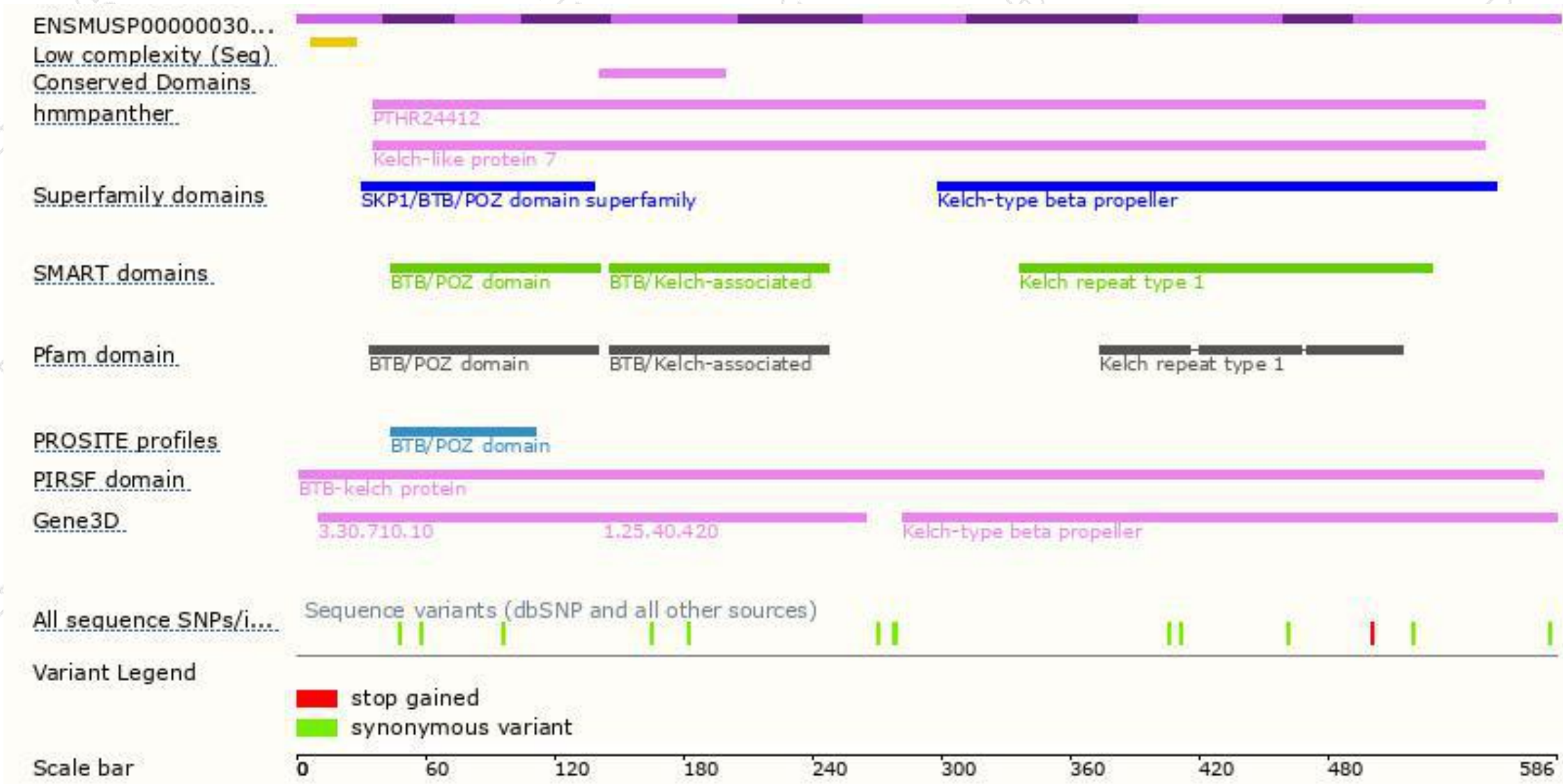
The strategy is based on the design of *Klhl7-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

