

Klf2 Cas9-KO Strategy

Designer:Lixin LYU
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Project Overview

Project Name

Klf2

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Klf2* gene. The schematic diagram is as follows:



- The *Klf2* gene has 1 transcript. According to the structure of *Klf2* gene, exon1-exon3 of *Klf2-201* (ENSMUST00000067912.7) 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 *Klf2* gene. The brief process is as follows: CRISPR/Cas9 system w

- According to the existing MGI data, Mice homozygous for targeted null mutations die during organogenesis with growth retardation, massive hemorrhage, and signs of anemia. Mice homozygous for one allele also display craniofacial malformations and impaired hematopoiesis. A second allele causes vascular abnormalities.
- The *Klf2* gene is located on the Chr8. 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)

Klf2 Kruppel-like factor 2 (lung) [Mus musculus (house mouse)]

Gene ID: 16598, updated on 2-Apr-2019

Summary



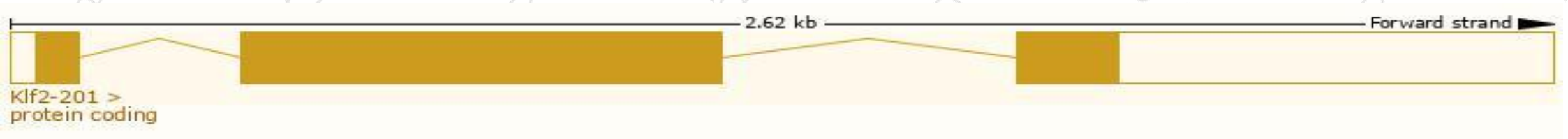
Official Symbol	Klf2 provided by MGI
Official Full Name	Kruppel-like factor 2 (lung) provided by MGI
Primary source	MGI:MGI:1342772
See related	Ensembl:ENSMUSG00000055148
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Lklf
Expression	Biased expression in spleen adult (RPKM 143.5), lung adult (RPKM 107.7) and 14 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

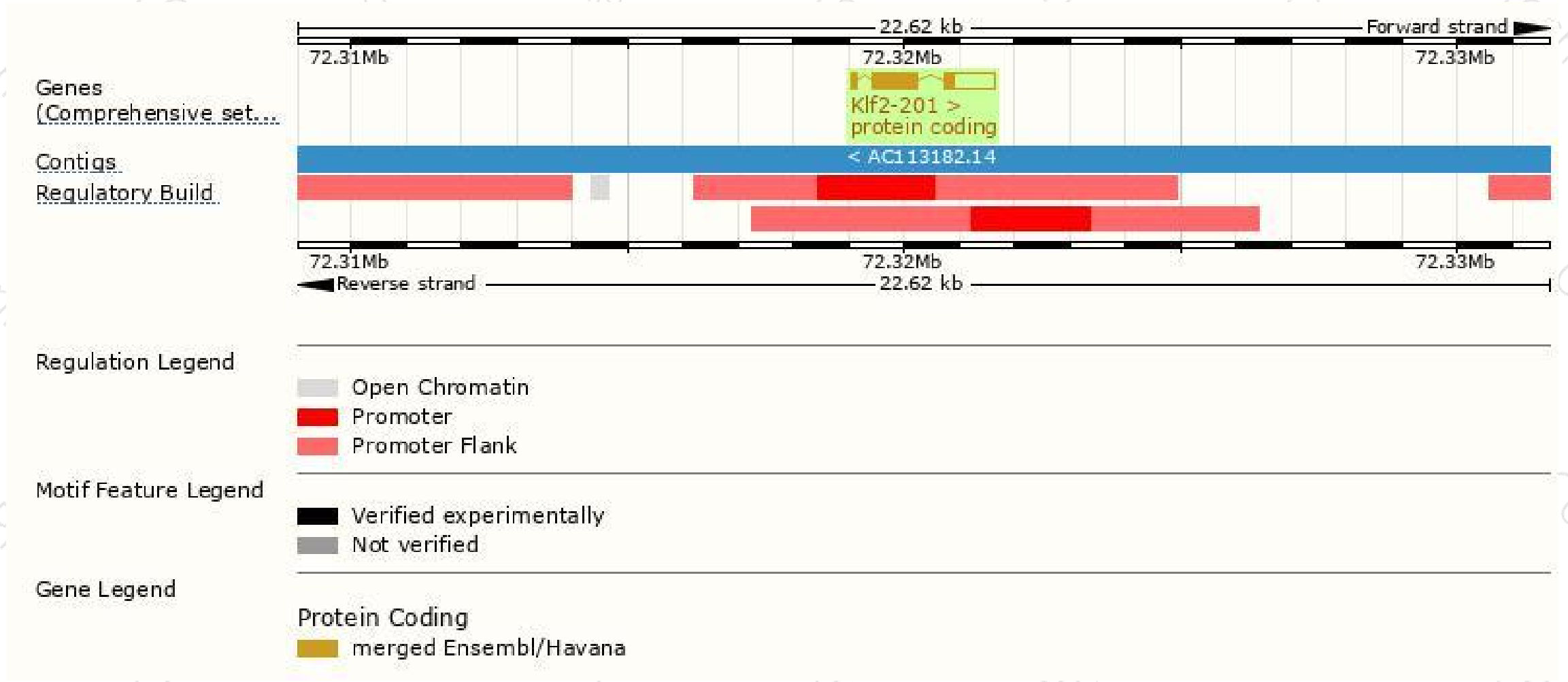
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Klf2-201	ENSMUST00000067912.7	1847	354aa	Protein coding	CCDS22412	Q60843	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *Klf2-201* transcript, The transcription is shown below



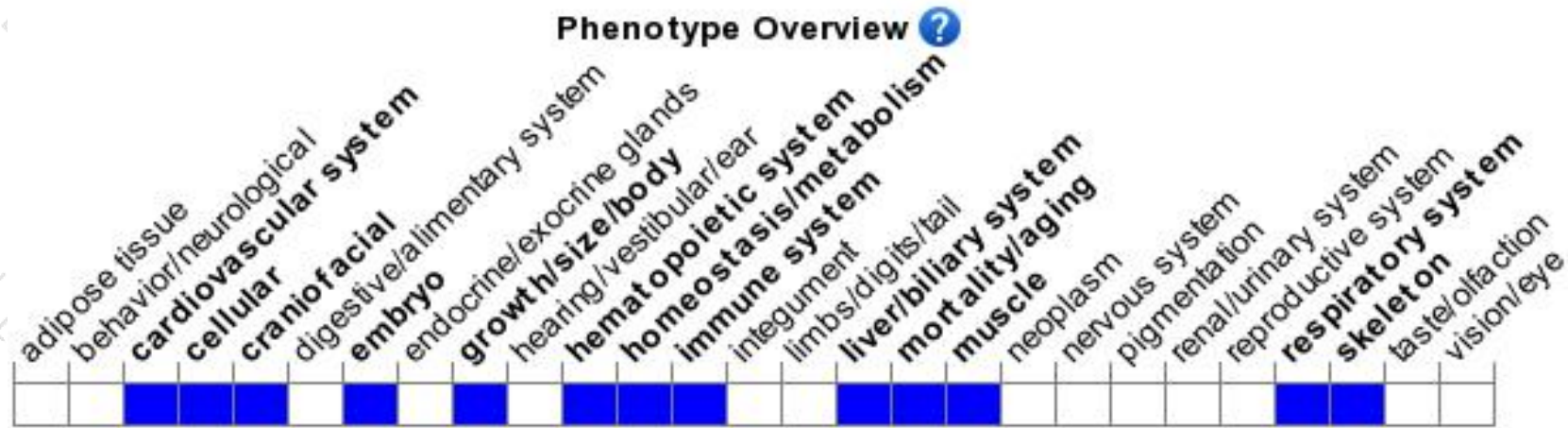
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Mice homozygous for targeted null mutations die during organogenesis with growth retardation, massive hemorrhage, and signs of anemia. Mice homozygous for one allele also display craniofacial malformations and impaired hematopoiesis. A second allele causes vascular abnormalities.

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

Tel: 400-9660890

