

Ak4 Cas9-KO Strategy

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Design Date:

2020-2-27

Project Overview

Project Name

Ak4

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ak4* gene. The schematic diagram is as follows:



- The *Ak4* gene has 7 transcripts. According to the structure of *Ak4* gene, exon3-exon4 of *Ak4-203* (ENSMUST00000106946.7) transcript is recommended as the knockout region. The region contains 293bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ak4* gene. The brief process is as follows: CRISPR/Cas9 system w

- The *Ak4* gene is located on the Chr4. 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)

Ak4 adenylate kinase 4 [Mus musculus (house mouse)]

Gene ID: 11639, updated on 31-Jan-2019

Summary



Official Symbol	Ak4 provided by MGI
Official Full Name	adenylate kinase 4 provided by MGI
Primary source	MGI:MGI:87979
See related	Ensembl:ENSMUSG00000028527
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	AK 4, Ak-3, Ak-4, Ak3, Ak3l1, D4Etd274e
Expression	Biased expression in kidney adult (RPKM 34.8), cerebellum adult (RPKM 9.7) and 13 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

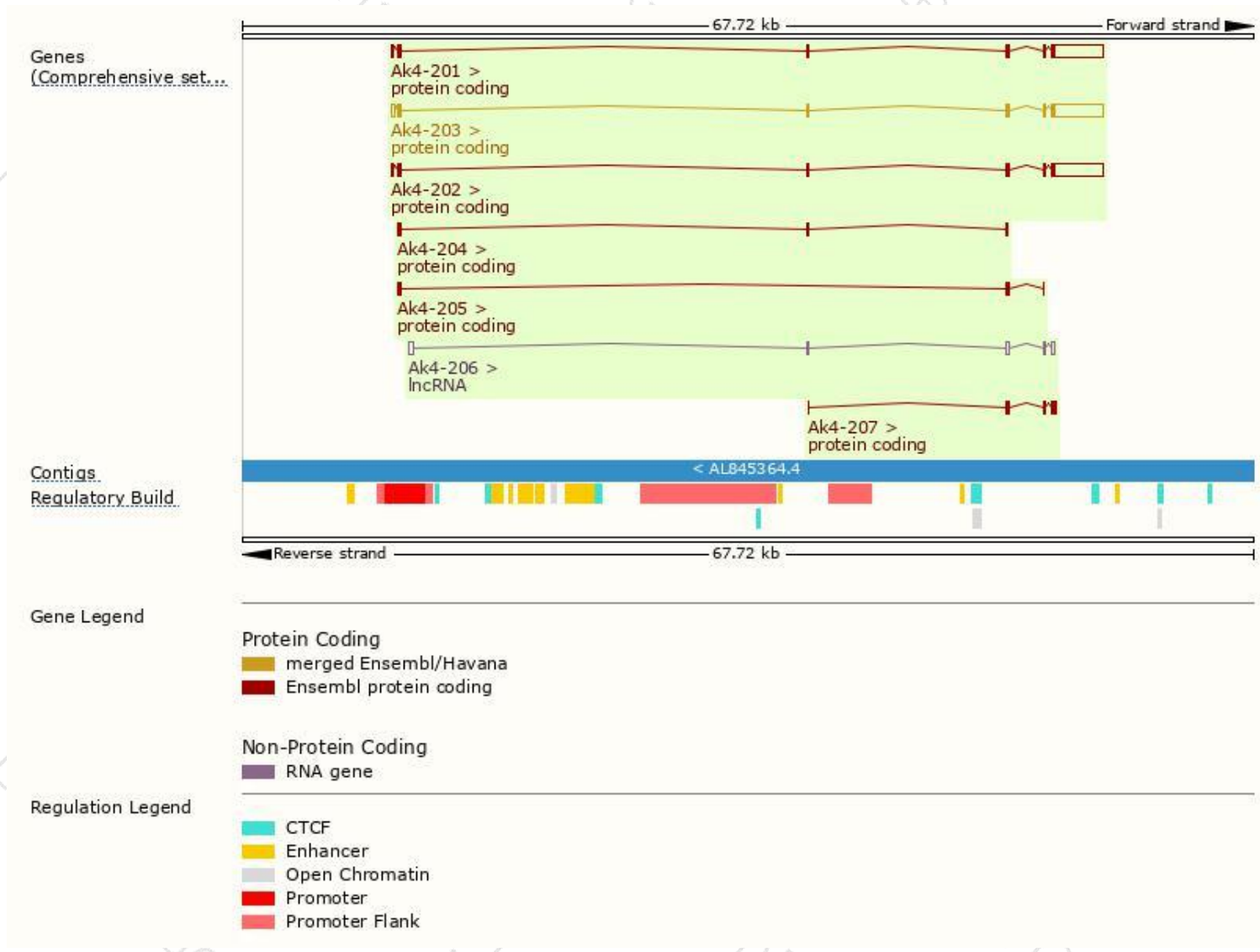
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ak4-203	ENSMUST00000106946.7	4360	223aa	Protein coding	CCDS18394	Q3U489 Q9WUR9	TSL:2 APPRIS P1
Ak4-201	ENSMUST00000102780.7	4186	223aa	Protein coding	CCDS18394	Q3U489 Q9WUR9	TSL:5 GENCODE basic APPRIS P1
Ak4-202	ENSMUST00000106945.7	4175	223aa	Protein coding	CCDS18394	Q3U489 Q9WUR9	TSL:1 GENCODE basic APPRIS P1
Ak4-207	ENSMUST00000155749.1	537	141aa	Protein coding	-	F6TEU8	CDS 5' incomplete TSL:3
Ak4-204	ENSMUST00000131397.1	462	115aa	Protein coding	-	A2ARF6	CDS 3' incomplete TSL:2
Ak4-205	ENSMUST00000133055.7	458	123aa	Protein coding	-	A2ARF5	CDS 3' incomplete TSL:3
Ak4-206	ENSMUST00000151561.1	791	No protein	lncRNA	-	-	TSL:3

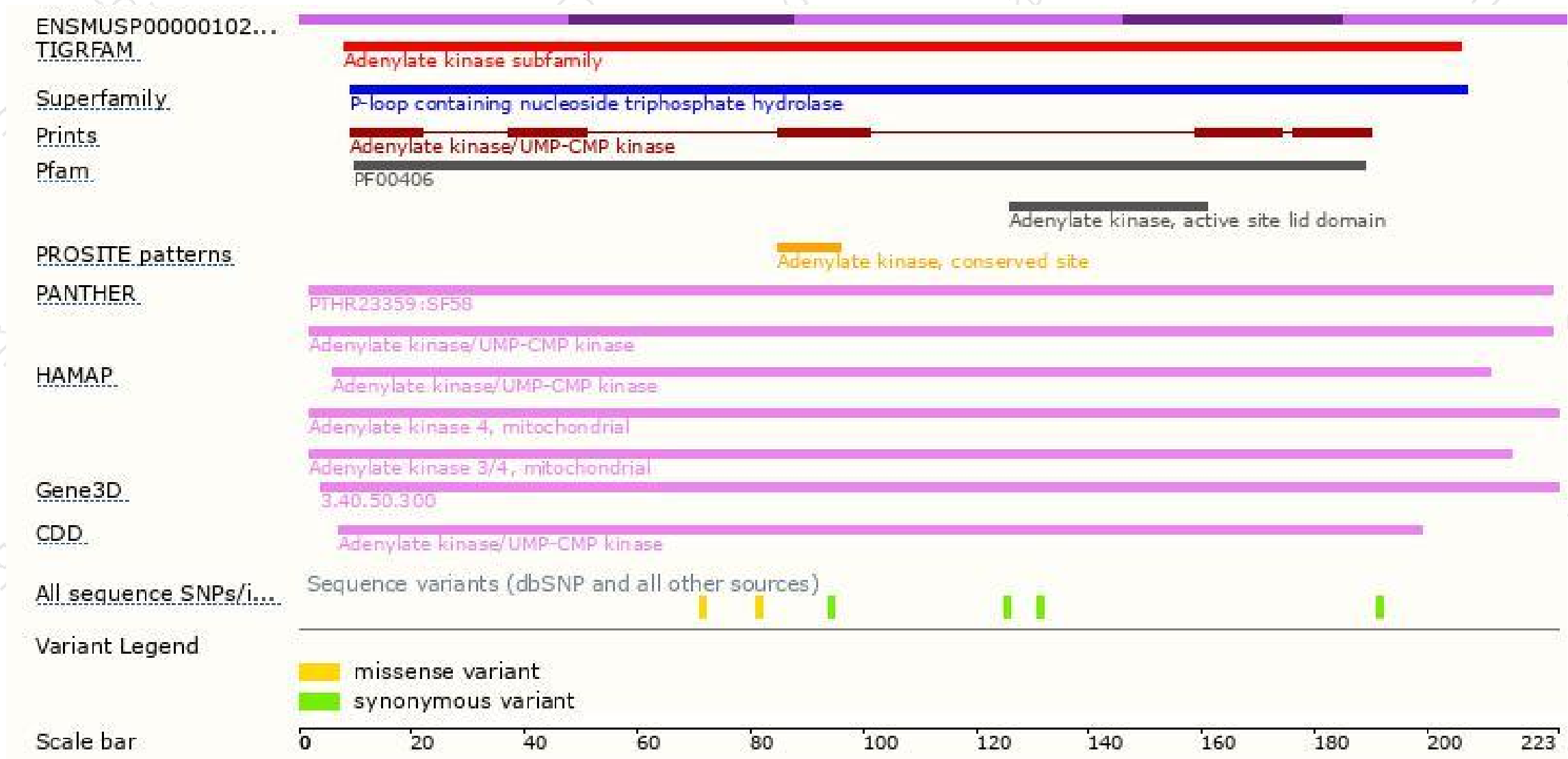
The strategy is based on the design of *Ak4-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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