

Kif24 Cas9-CKO Strategy

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Project Overview

Project Name

Kif24

Project type

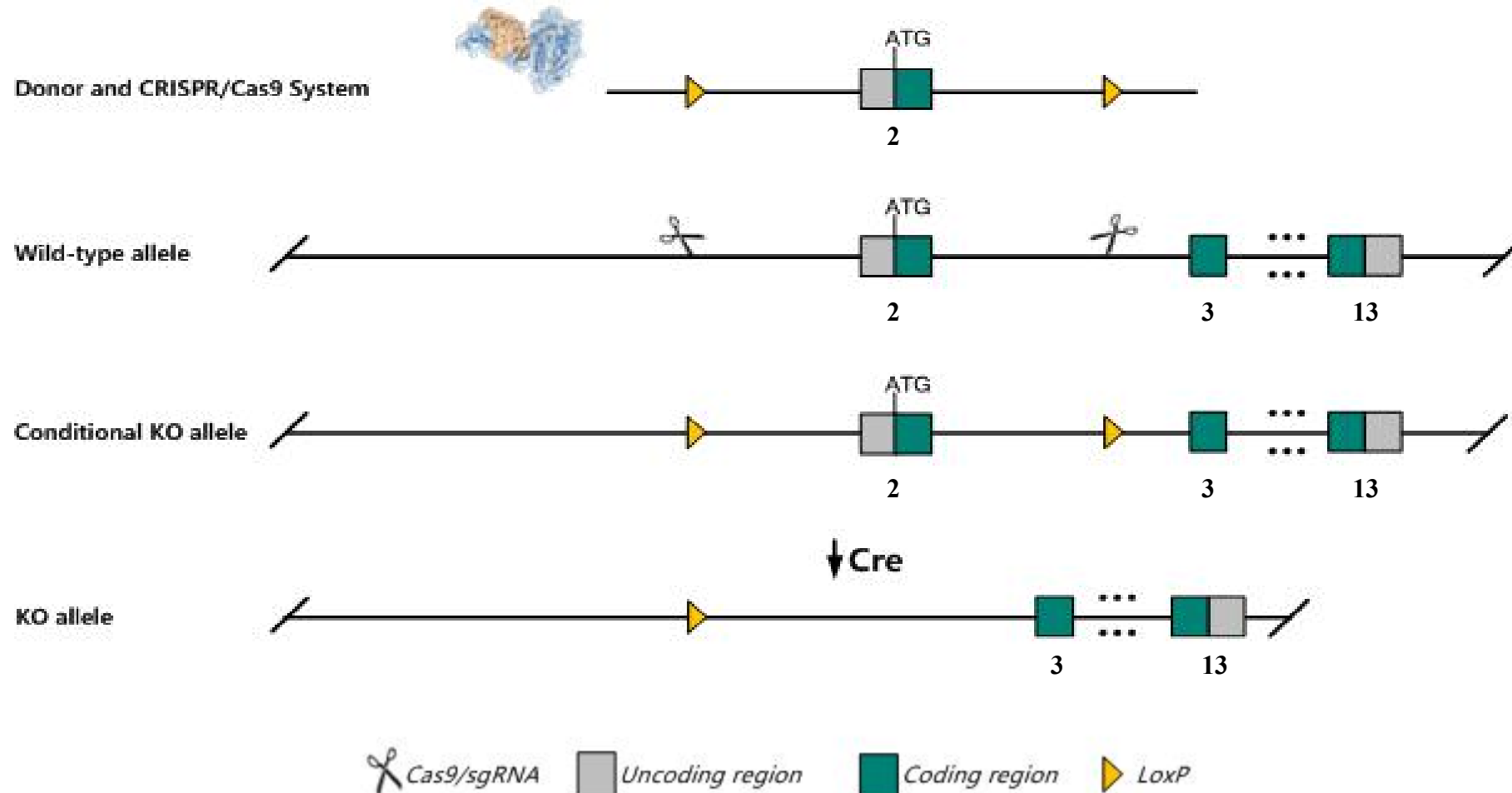
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Kif24* gene. The schematic diagram is as follows:



The *Kif24* gene has 8 transcripts. According to the structure of *Kif24* gene, exon2 of *Kif24-202*(ENSMUST00000108055.9) 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 *Kif24* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor 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.

The *Kif24* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Kif24 kinesin family member 24 [Mus musculus (house mouse)]

Gene ID: 109242, updated on 17-Feb-2021

Summary



Official Symbol Kif24 provided by [MGI](#)

Official Full Name kinesin family member 24 provided by [MGI](#)

Primary source [MGI:MGI:1918345](#)

See related [Ensembl:ENSMUSG00000028438](#)

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 4933425J19Rik, 9430029L23Rik

Expression Broad expression in testis adult (RPKM 3.9), CNS E11.5 (RPKM 2.1) and 19 other tissues [See more](#)

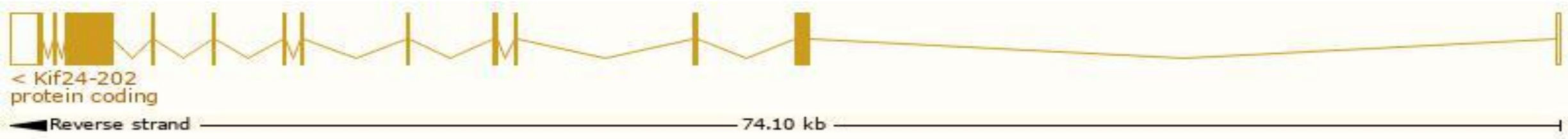
Orthologs [human](#) [all](#)

Transcript information Ensembl

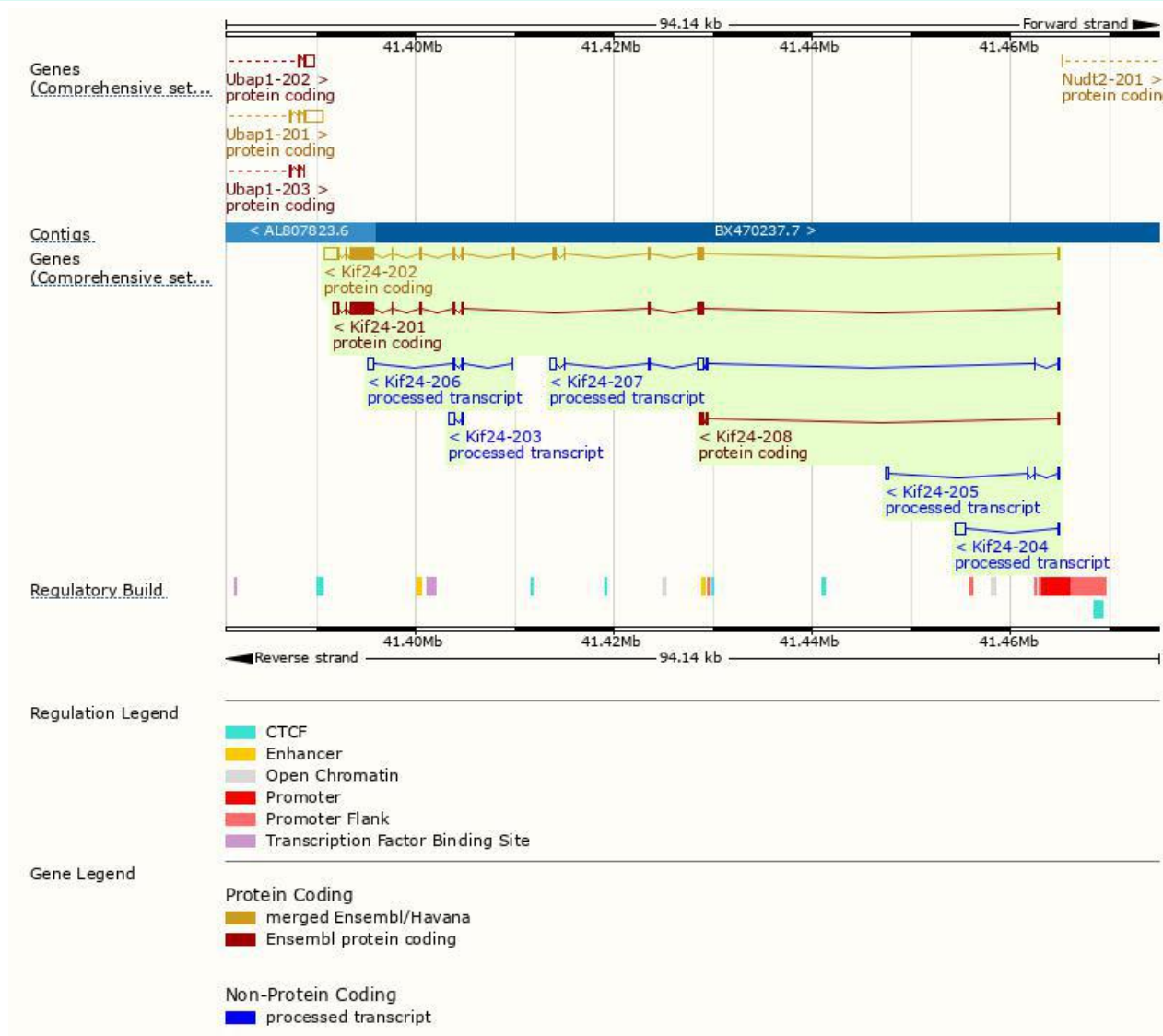
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Kif24-202	ENSMUST00000108055.9	5593	1356aa	Protein coding	CCDS18060		TSL:1 , GENCODE basic , APPRIS P1 ,
Kif24-201	ENSMUST00000030148.6	4333	1222aa	Protein coding	-		TSL:1 , GENCODE basic ,
Kif24-208	ENSMUST00000154535.8	731	141aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Kif24-207	ENSMUST00000154175.8	1756	No protein	Processed transcript	-		TSL:1 ,
Kif24-204	ENSMUST00000131532.2	1151	No protein	Processed transcript	-		TSL:1 ,
Kif24-206	ENSMUST00000141951.2	754	No protein	Processed transcript	-		TSL:3 ,
Kif24-203	ENSMUST00000127376.2	705	No protein	Processed transcript	-		TSL:3 ,
Kif24-205	ENSMUST00000133497.2	623	No protein	Processed transcript	-		TSL:5 ,

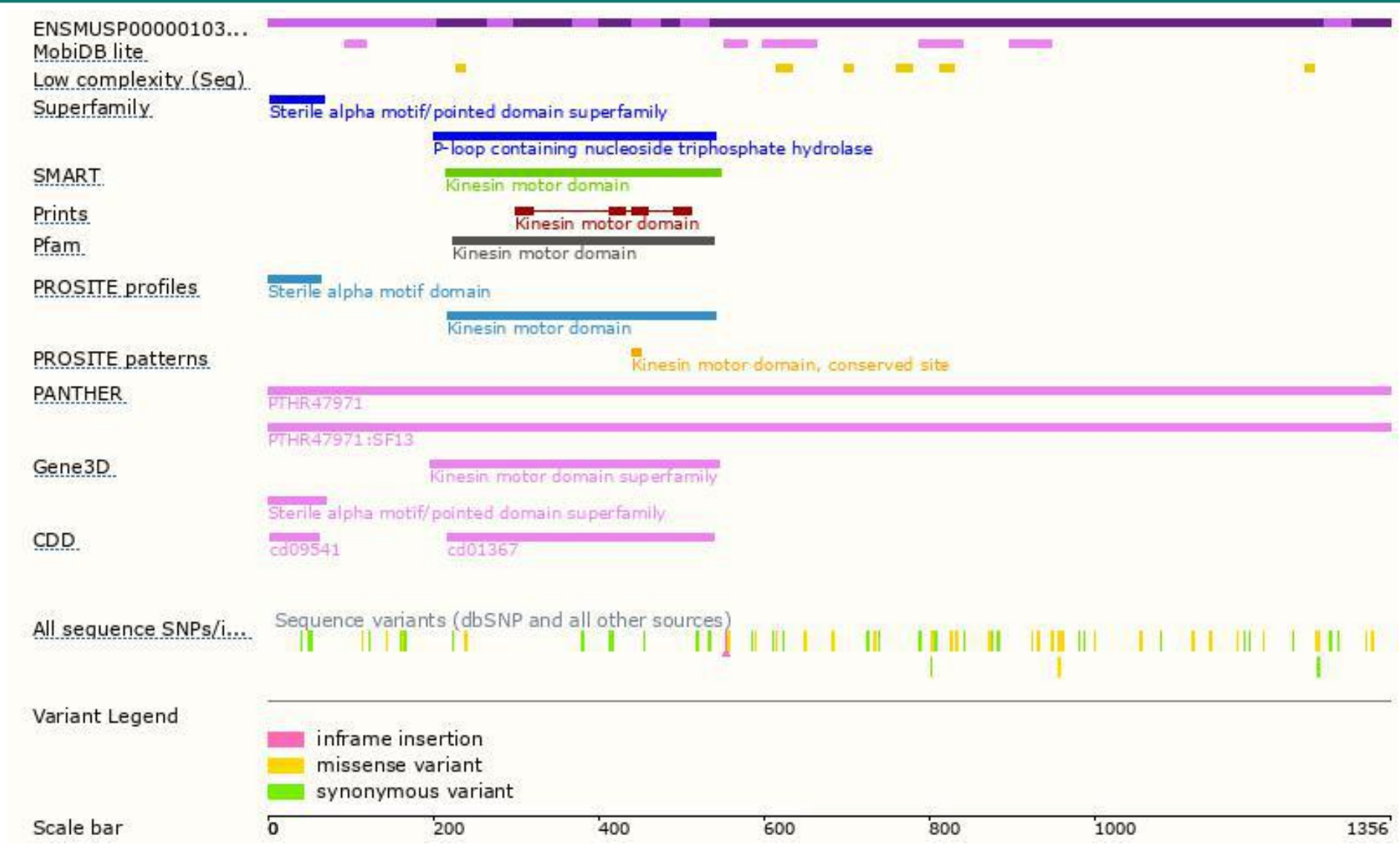
The strategy is based on the design of *Kif24-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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