

Map3k13 Cas9-CKO Strategy

Designer: Yun Li
Reviewer: Jiayuan Yao
Design Date: 2019-8-28

Project Overview

Project Name

Map3k13

Project type

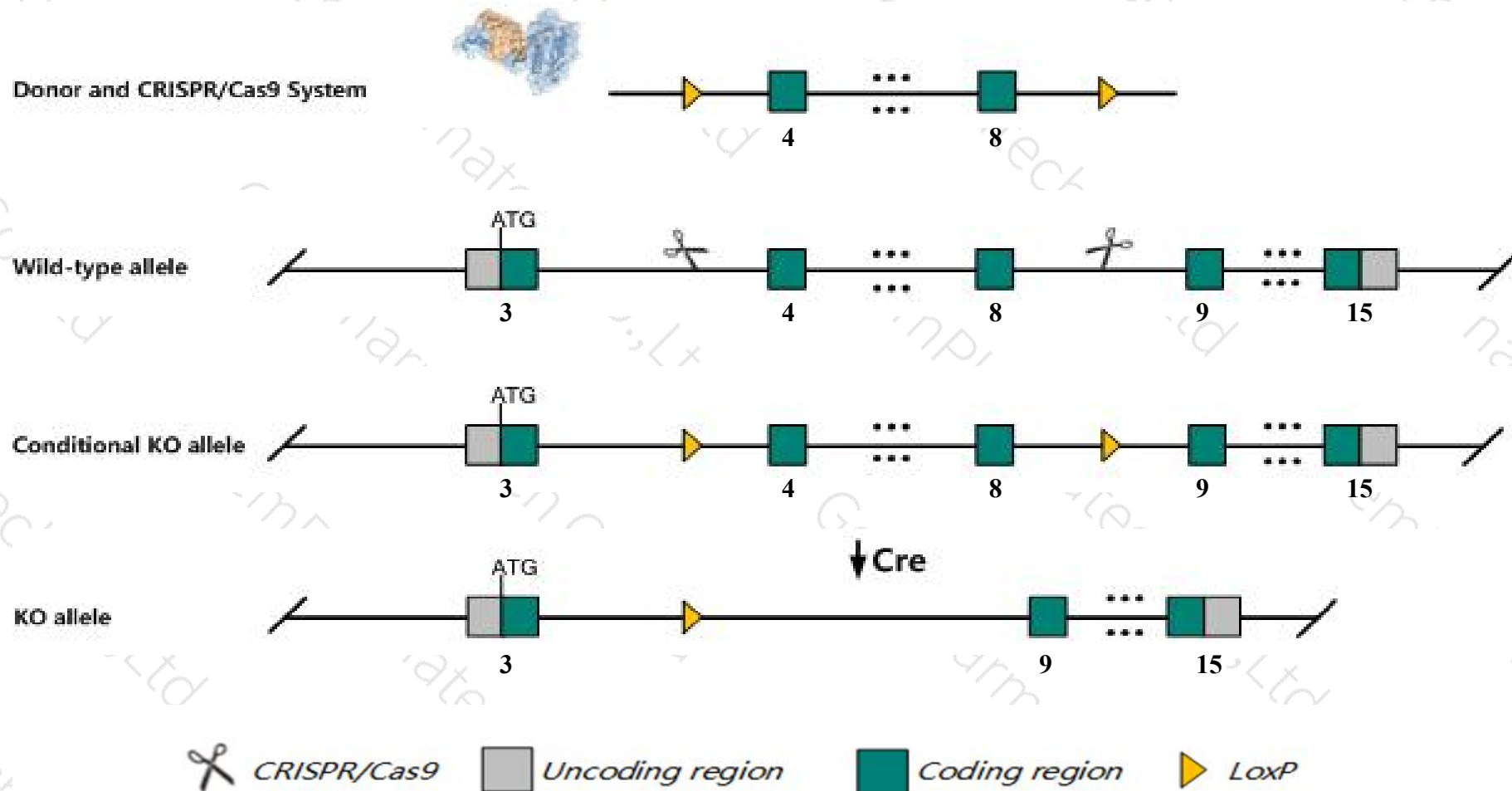
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Map3k13* gene. The schematic diagram is as follows:



- The *Map3k13* gene has 3 transcripts. According to the structure of *Map3k13* gene, exon4-exon8 of *Map3k13-202* (ENSMUST00000231988.1) transcript is recommended as the knockout region. The region contains 803bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Map3k13* 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 *Map3k13* gene is located on the Chr16. 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)

Map3k13 mitogen-activated protein kinase kinase kinase 13 [Mus musculus (house mouse)]

Gene ID: 71751, updated on 3-Feb-2019

Summary



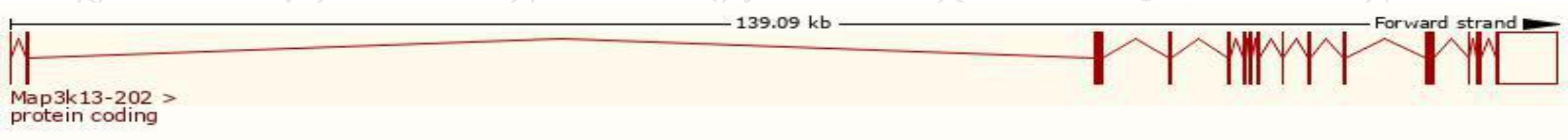
Official Symbol	Map3k13 provided by MGI
Official Full Name	mitogen-activated protein kinase kinase kinase 13 provided by MGI
Primary source	MGI:MGI:2444243
See related	Ensembl:ENSMUSG00000033618
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C130026N12Rik, LZK
Expression	Broad expression in cerebellum adult (RPKM 1.4), small intestine adult (RPKM 1.3) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

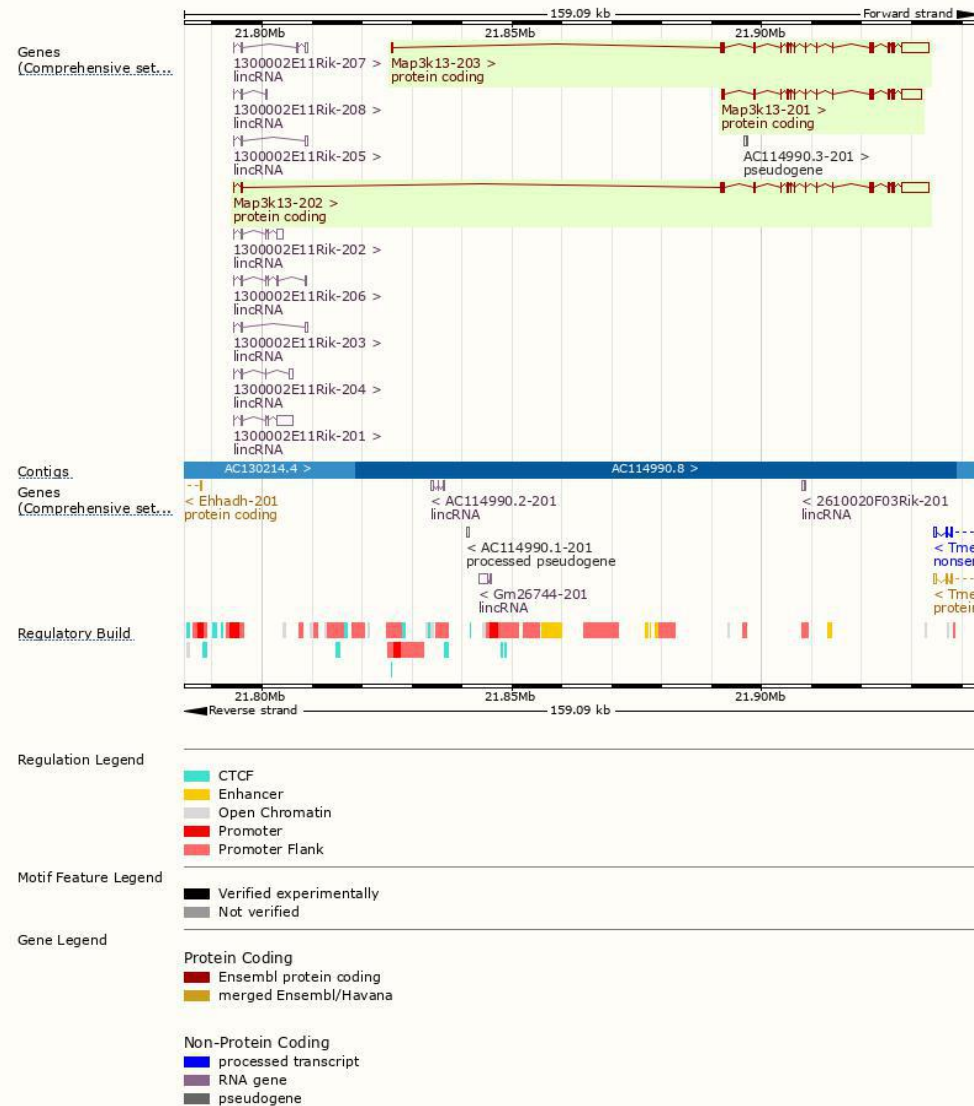
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Map3k13-202	ENSMUST00000231988.1	8583	959aa	Protein coding	CCDS37294	Q1HKZ5	GENCODE basic APPRIS P1
Map3k13-203	ENSMUST00000232240.1	8487	959aa	Protein coding	CCDS37294	Q1HKZ5	GENCODE basic APPRIS P1
Map3k13-201	ENSMUST00000042065.6	6709	959aa	Protein coding	CCDS37294	Q1HKZ5	TSL:1 GENCODE basic APPRIS P1

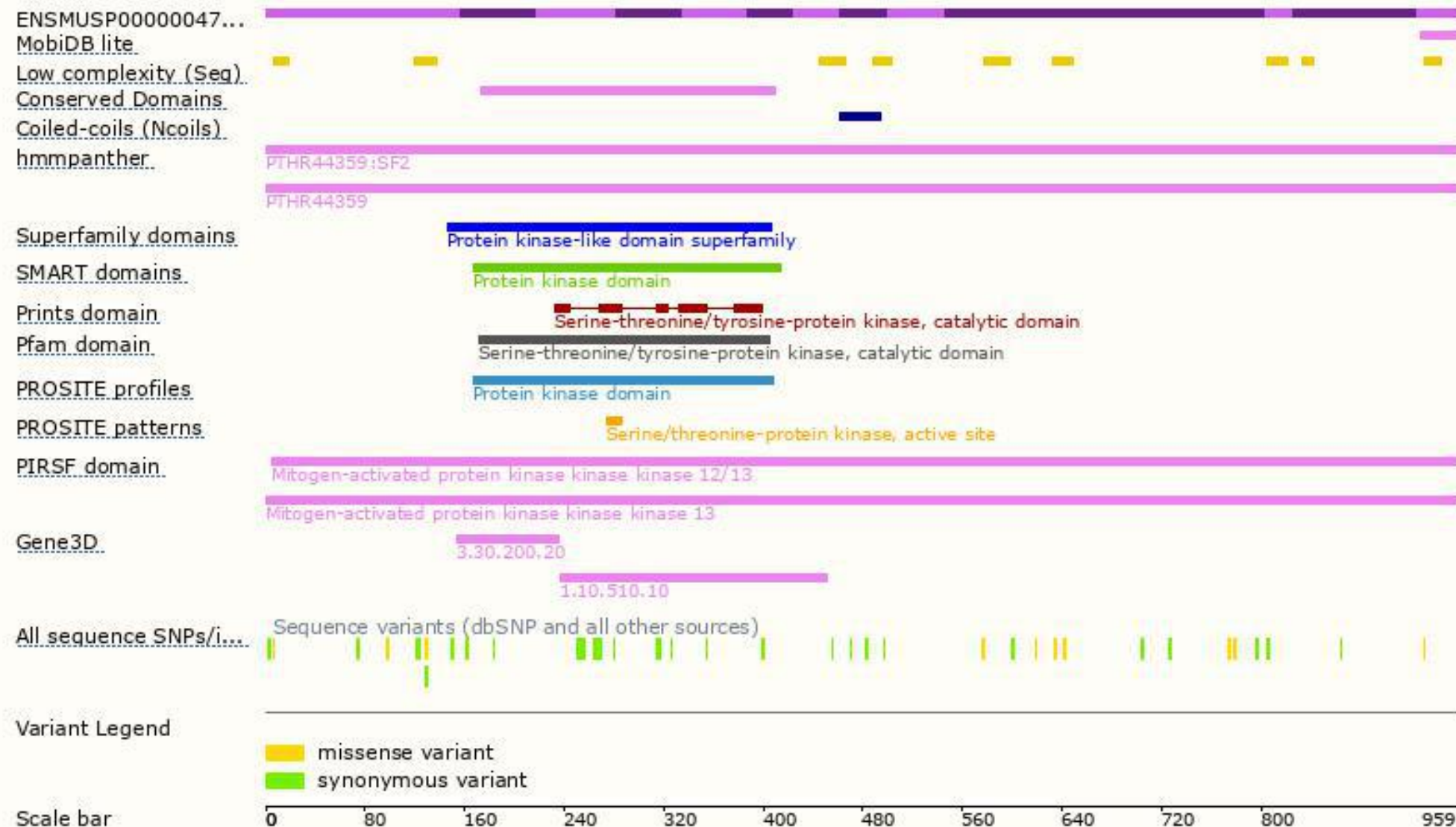
The strategy is based on the design of *Map3k13-202* transcript,The transcription is shown below



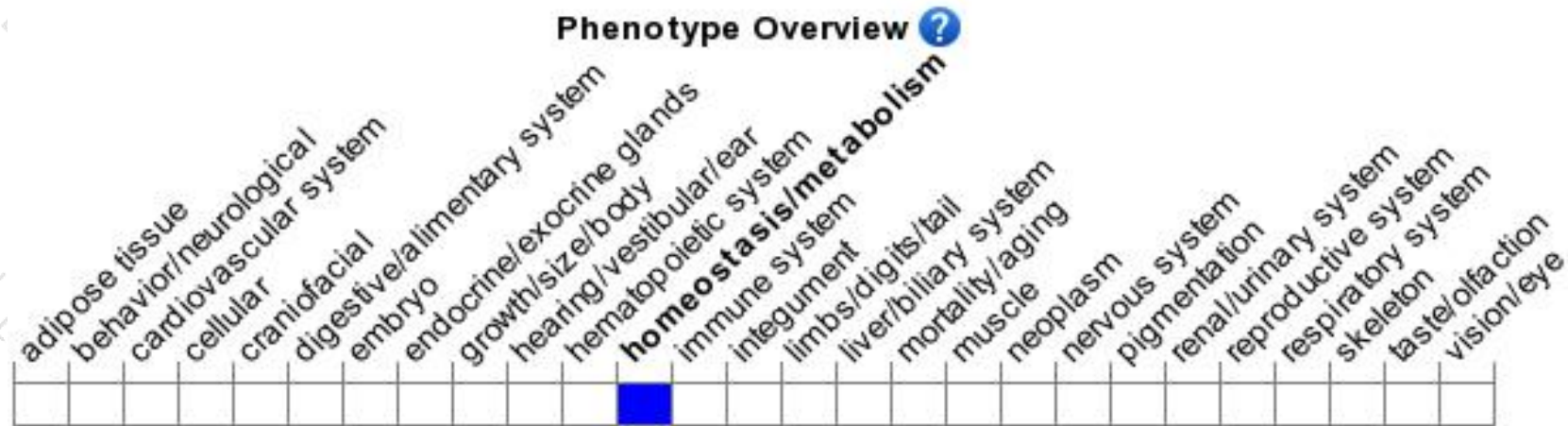
Genomic location distribution



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/>).

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

Tel: 400-9660890

