

Kdm8 Cas9-KO Strategy

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Project Overview

Project Name

Kdm8

Project type

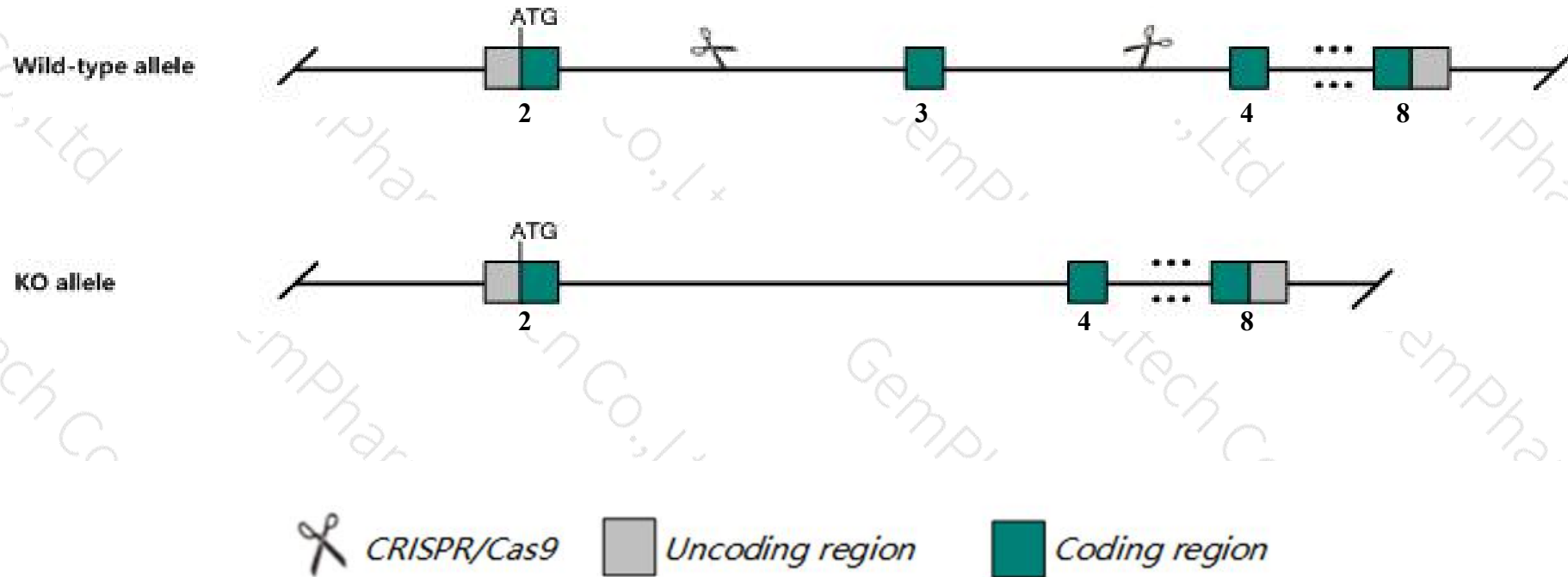
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Kdm8* gene. The schematic diagram is as follows:



- The *Kdm8* gene has 2 transcripts. According to the structure of *Kdm8* gene, exon3 of *Kdm8-201* (ENSMUST00000033010.8) transcript is recommended as the knockout region. The region contains 167bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Kdm8* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Homozygous inactivation of this gene leads to complete embryonic lethality during organogenesis associated with severe growth retardation and abnormal embryo turning. Observed phenotypes include open neural tubes and absent vitelline blood vessels.
- The *Kdm8* gene is located on the Chr7. 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)

Kdm8 lysine (K)-specific demethylase 8 [Mus musculus (house mouse)]

Gene ID: 77035, updated on 19-Mar-2019

Summary



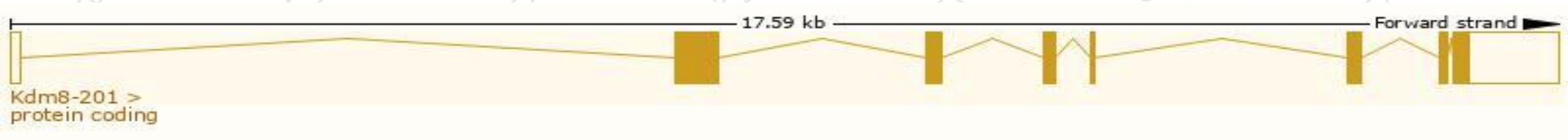
Official Symbol	Kdm8 provided by MGI
Official Full Name	lysine (K)-specific demethylase 8 provided by MGI
Primary source	MGI:MGI:1924285
See related	Ensembl:ENSMUSG00000030752
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	3110005O21Rik, Jmjd5
Expression	Ubiquitous expression in thymus adult (RPKM 9.3), ovary adult (RPKM 7.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

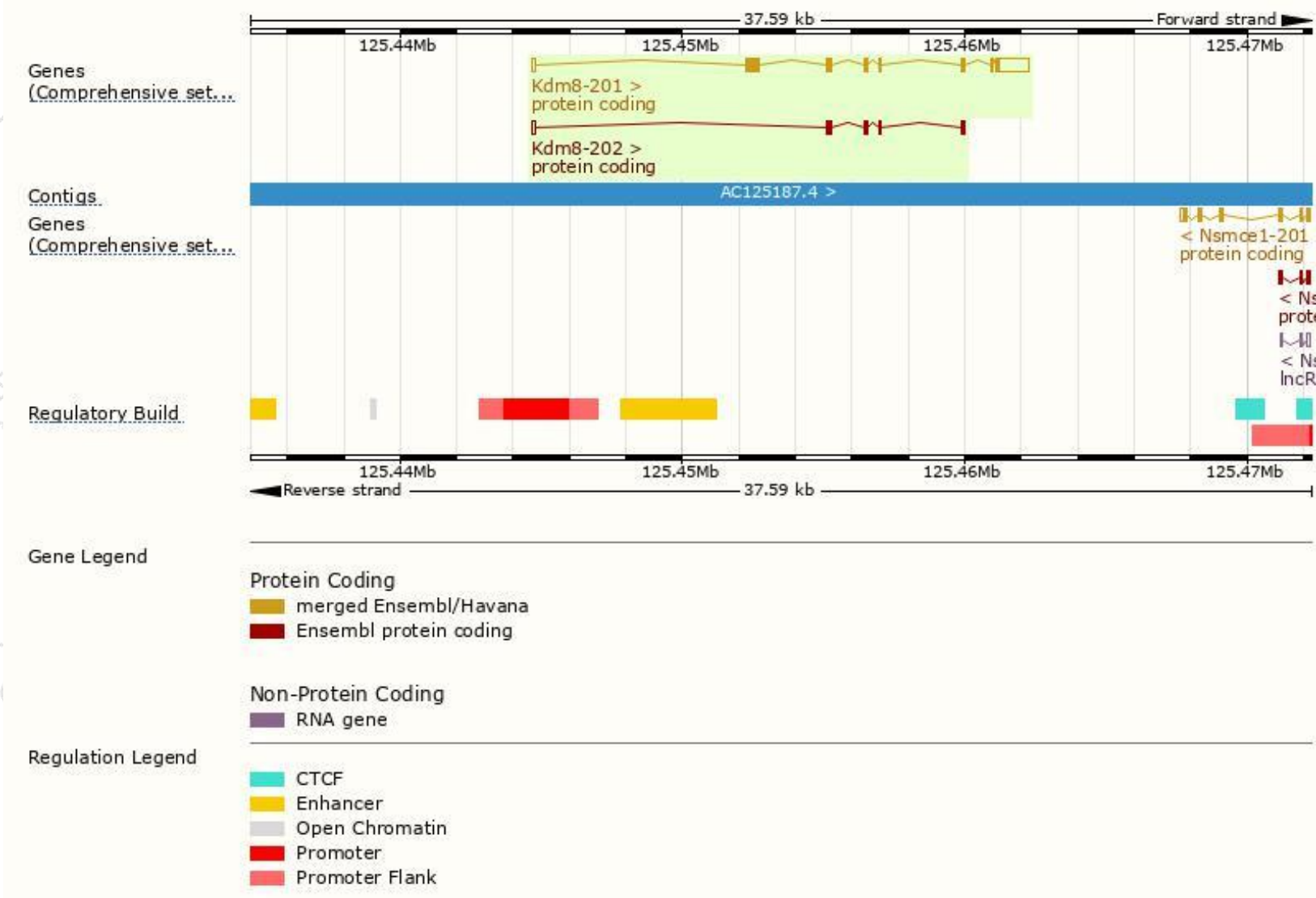
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Kdm8-201	ENSMUST00000033010.8	2389	414aa	Protein coding	CCDS21821	Q9CXT6	TSL:1 GENCODE basic APPRIS P1
Kdm8-202	ENSMUST00000135129.1	601	152aa	Protein coding	-	D3YUV8	CDS 3' incomplete TSL:3

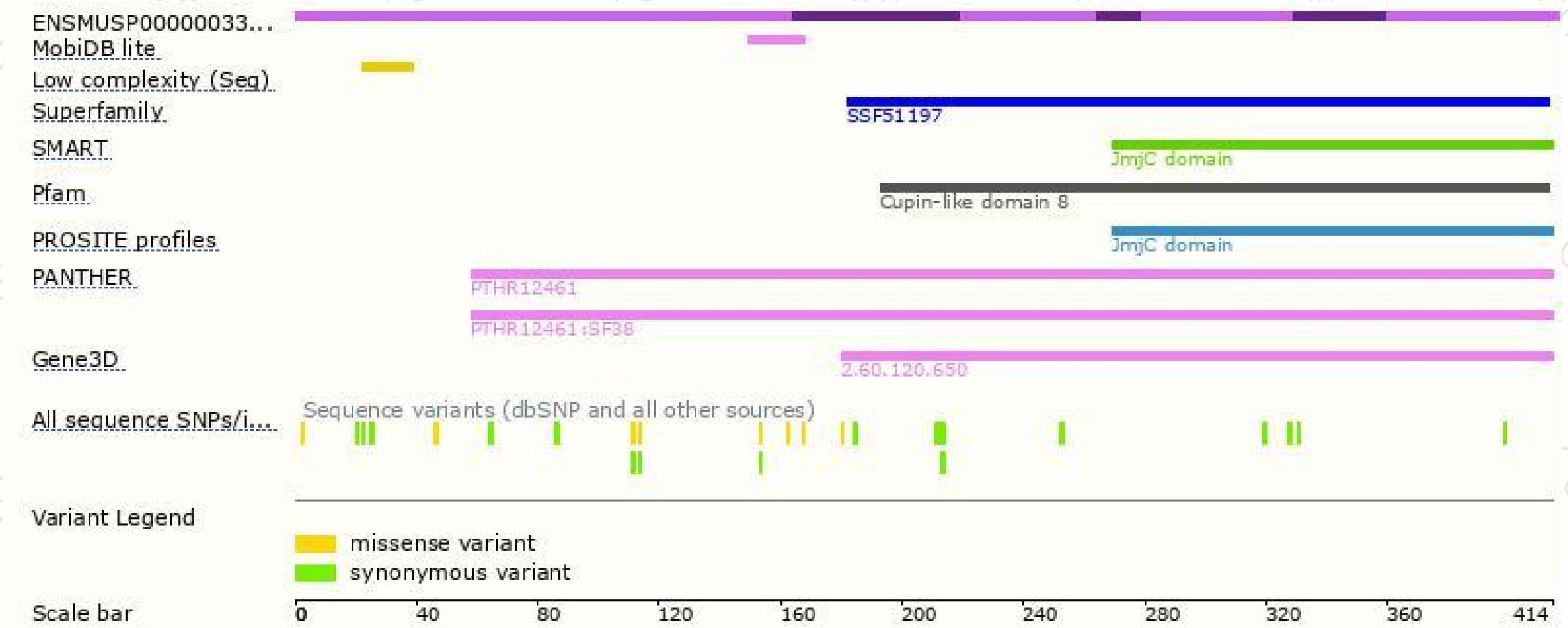
The strategy is based on the design of *Kdm8-201* transcript,The transcription is shown below



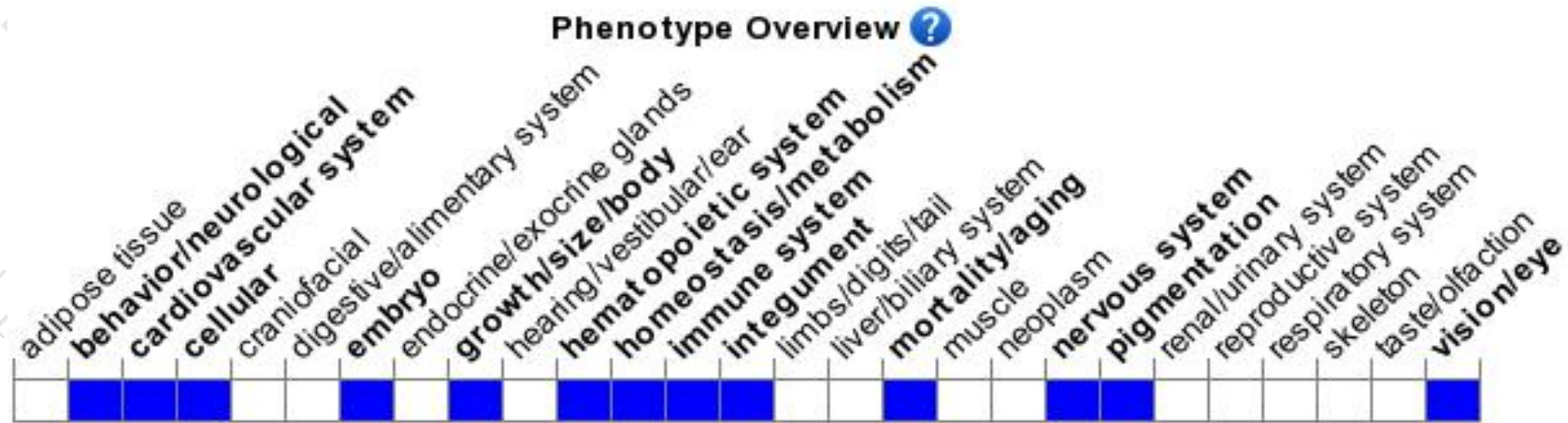
Genomic location distribution



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/>).

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

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