

***Fmo2* Cas9-CKO Strategy**

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Project Overview

Project Name

Fmo2

Project type

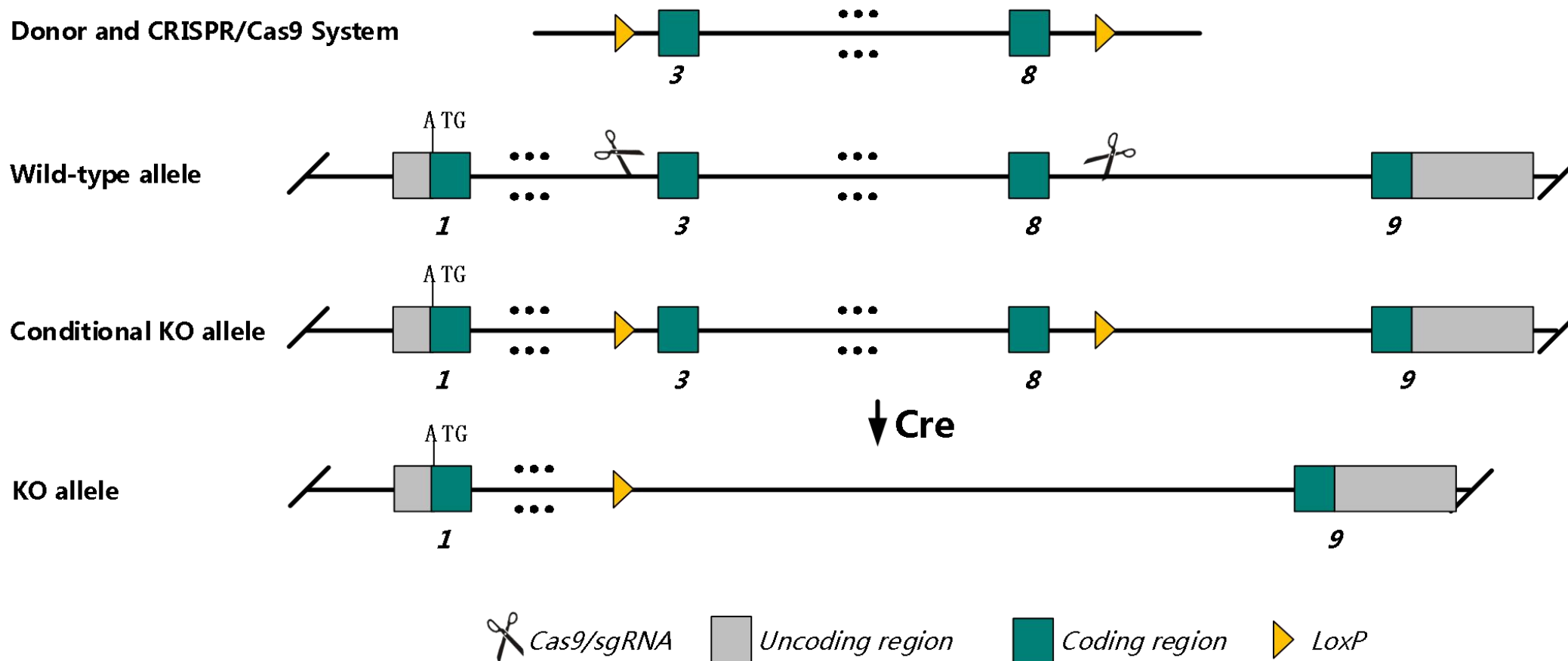
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fmo2* gene. The schematic diagram is as follows:



- The *Fmo2* gene has 7 transcripts. According to the structure of *Fmo2* gene, exon3-exon8 of *Fmo2*-201 (ENSMUST00000045902.12) transcript is recommended as the knockout region. The region contains 1124bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fmo2* 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 *Fmo2* gene is located on the Chr1. 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.

Fmo2 flavin containing monooxygenase 2 [Mus musculus (house mouse)]

Gene ID: 55990, updated on 19-Mar-2019

Summary

Official Symbol	Fmo2 provided by MGI
Official Full Name	flavin containing monooxygenase 2 provided by MGI
Primary source	MGI:MGI:1916776
See related	Ensembl:ENSMUSG00000040170
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	2310008D08Rik, 2310042I22Rik, AW107733
Expression	Biased expression in bladder adult (RPKM 71.4), lung adult (RPKM 60.7) and 4 other tissues See more
Orthologs	human all

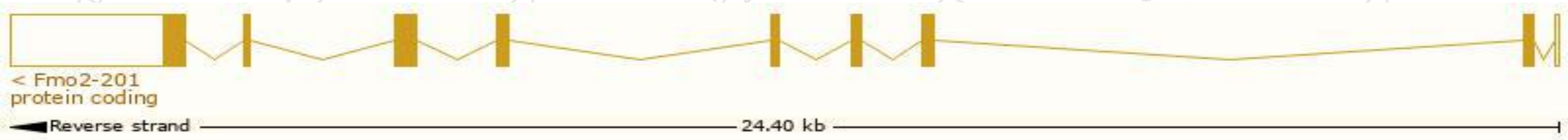
Transcript information

Ensembl

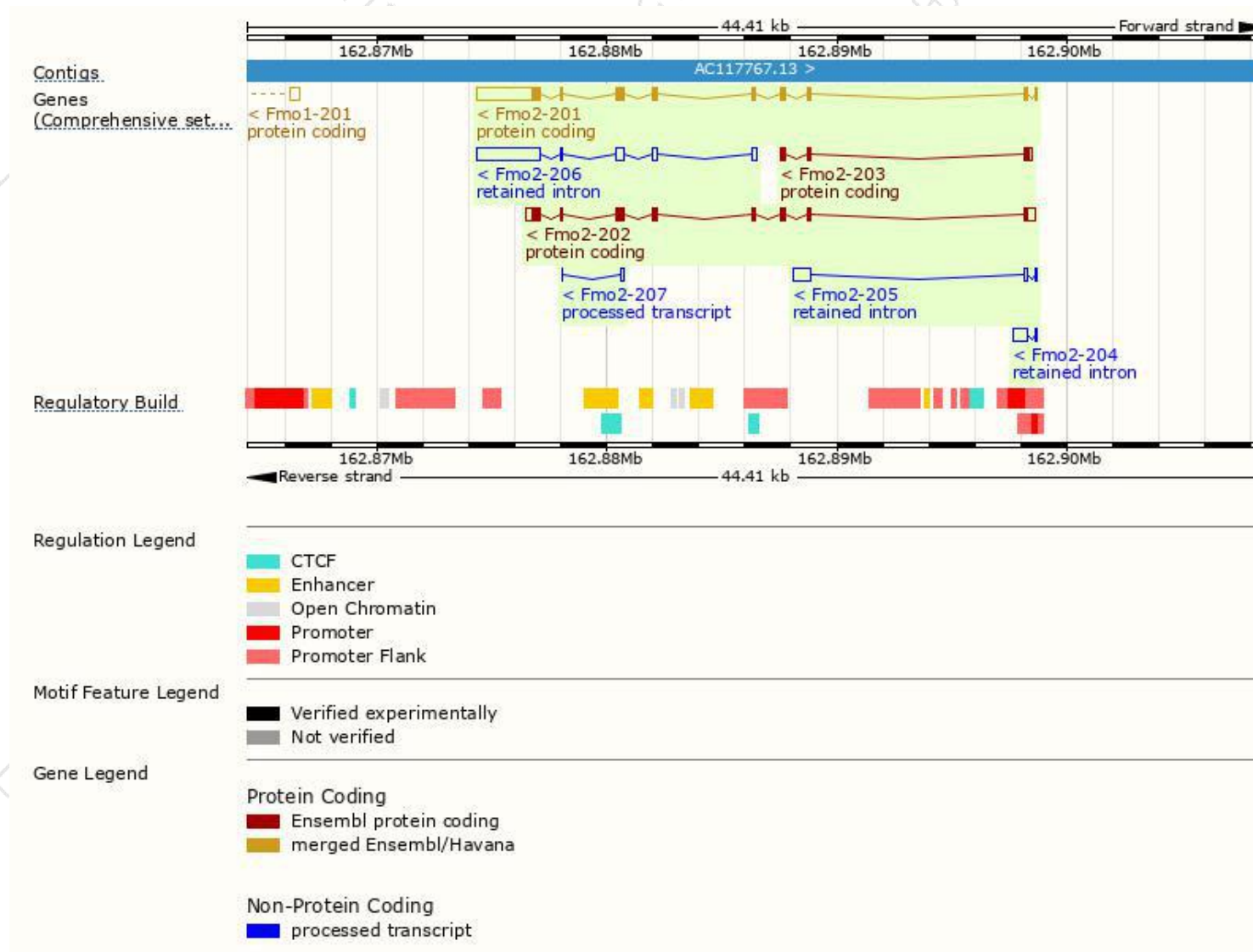
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fmo2-201	ENSMUST00000045902.12	4066	535aa	Protein coding	CCDS15425	Q8K2I3	TSL:1 GENCODE basic APPRIS P1
Fmo2-202	ENSMUST00000111510.7	2260	535aa	Protein coding	CCDS15425	Q8K2I3	TSL:1 GENCODE basic APPRIS P1
Fmo2-203	ENSMUST00000143123.2	581	161aa	Protein coding	-	D3YVR1	CDS 3' incomplete TSL:2
Fmo2-207	ENSMUST00000194197.1	203	No protein	Processed transcript	-	-	TSL:5
Fmo2-206	ENSMUST00000194061.1	3594	No protein	Retained intron	-	-	TSL:1
Fmo2-205	ENSMUST00000156860.1	1000	No protein	Retained intron	-	-	TSL:1
Fmo2-204	ENSMUST00000147617.1	680	No protein	Retained intron	-	-	TSL:2

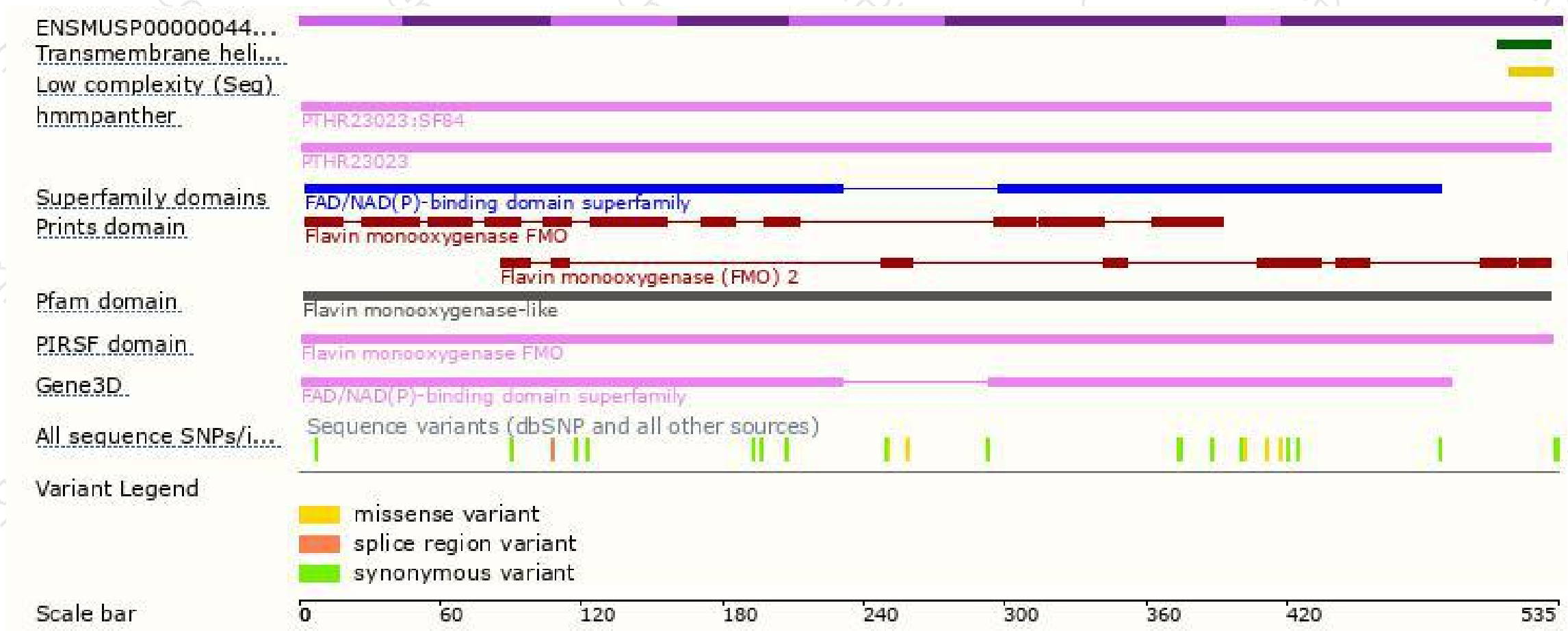
The strategy is based on the design of *Fmo2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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