

Mettl15 Cas9-KO Strategy

Designer:

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Project Overview



Project Name

Mettl15

Project type

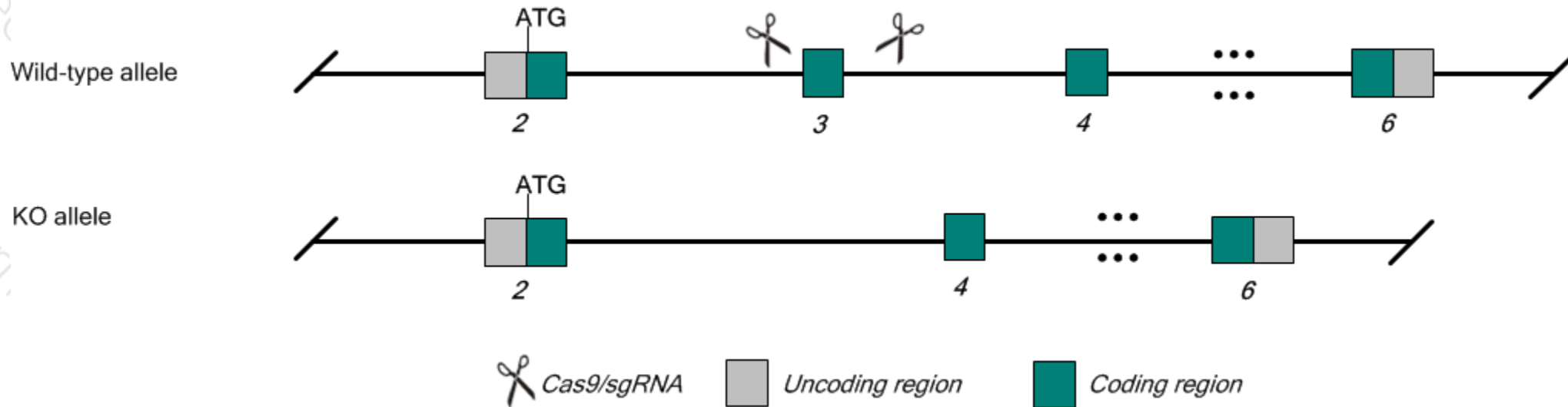
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Mettl15* gene. The schematic diagram is as follows:



Technical routes

- The *Mettl15* gene has 5 transcripts, According to the structure of *Mettl15* gene, exon3 of *Mettl15-201* transcript is recommended as the knockout region. The region contains the 137bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Mettl15* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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.

- Transcript *Mettl15-202*, *Mettl15-203* may not be affected.
- The *Mettl15* gene is located in the Chr2. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Mettl15 methyltransferase like 15 [*Mus musculus* (house mouse)]

Gene ID: 76894, updated on 31-Jan-2019

Summary

Official Symbol	Mettl15 provided by MGI
Official Full Name	methyltransferase like 15 provided by MGI
Primary source	MGI:MGI:1924144
See related	Ensembl:ENSMUSG000000057234
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Mett5d1; AI303697; AWD49952; 0610027B03Rik
Expression	Ubiquitous expression in bladder adult (RPKM 2.5), liver E14 (RPKM 2.3) and 28 other tissues See more
Orthologs	human all

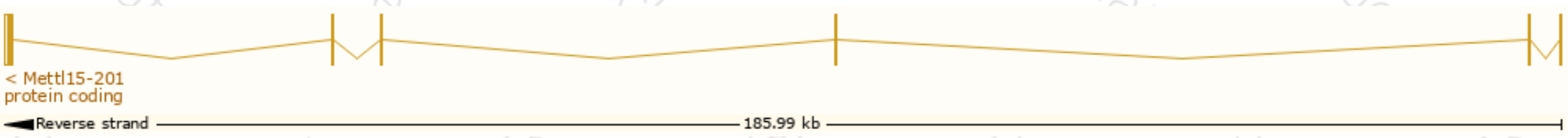
Transcript information (Ensembl)



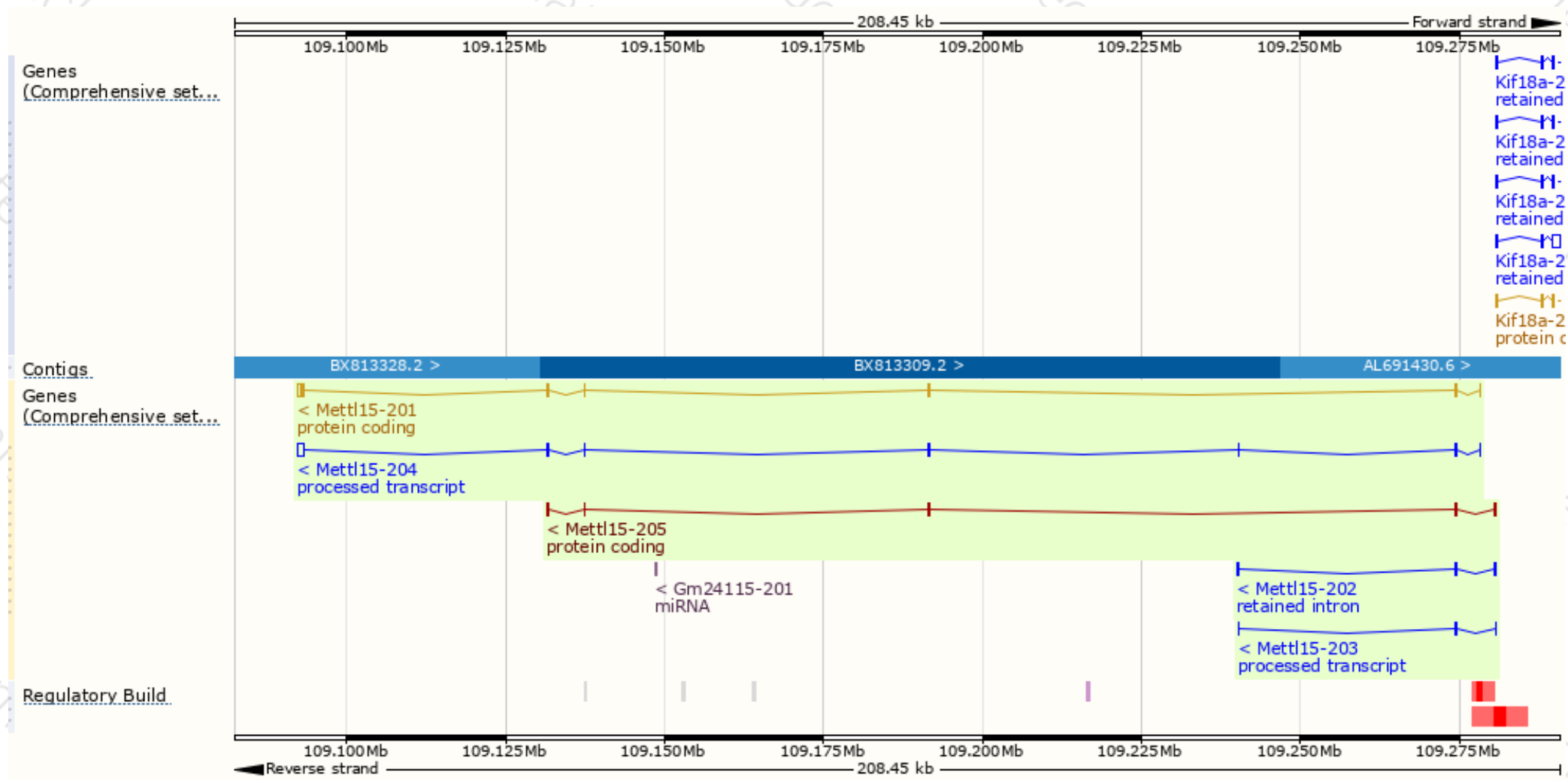
The gene has 5 transcripts, and all transcripts are shown below :

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
Mettl15-201	ENSMUST00000081631.9	1894	406aa	Protein coding	CCDS16506	Q9DCL4	NM_029790 NP_084066	TSL:1 GENCODE basic APPRIS P1
Mettl15-205	ENSMUST00000147770.1	848	230aa	Protein coding	-	A2AGM2	-	CDS 3' incomplete TSL:3
Mettl15-204	ENSMUST00000147376.7	2018	No protein	Processed transcript	-	-	-	TSL:1
Mettl15-203	ENSMUST00000145535.1	530	No protein	Processed transcript	-	-	-	TSL:3
Mettl15-202	ENSMUST00000138533.7	646	No protein	Retained intron	-	-	-	TSL:1

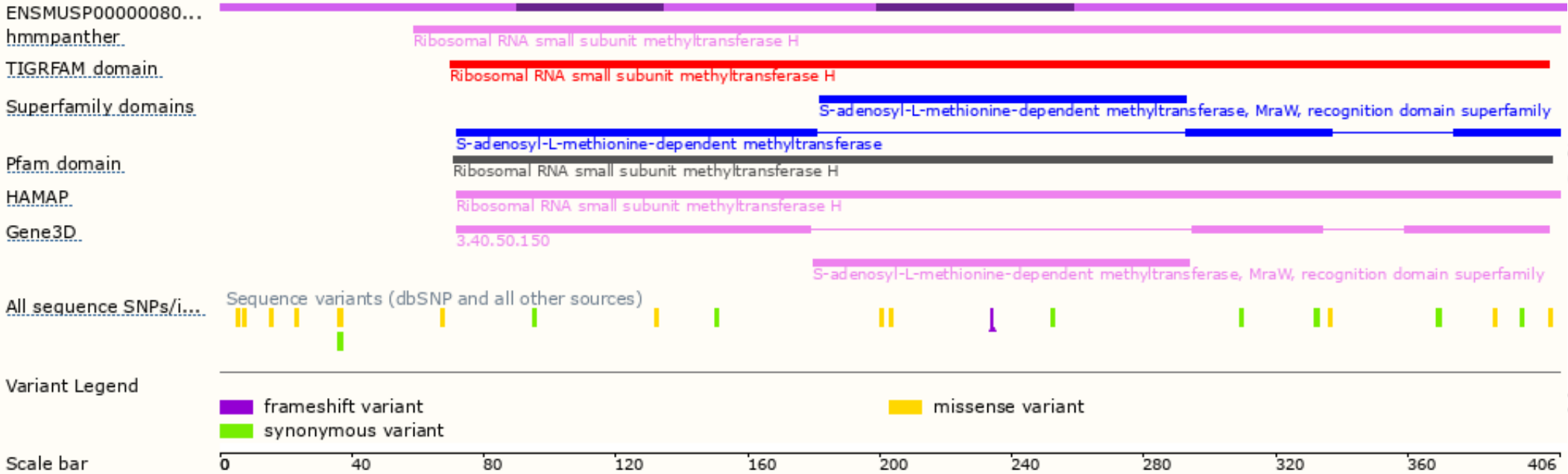
The strategy is based on the design of *Mettl15-201* transcript, The transcription is shown below :



Genomic location distribution



Protein domain



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